

Playford Corner Works

Fencing and Enclosures Plan

DCO Requirement 17

(Applicable to Work Numbers 39 and 40)

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FOR DISCH...

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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 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 1200MW 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, 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.

1.2. Purpose and Scope

5. This plan has been produced to fulfil DCO Requirement 17 which states:

17.—(1) No stage of the connection works may commence until for that stage written details of all proposed permanent and temporary fences, walls or other means of enclosure of the connection works have been submitted to and approved by the relevant planning authority.

(2) All construction consolidation sites must remain securely fenced in accordance with the approved details at all times during construction of the relevant stage of the connection works.

(3) Any temporary fencing must be removed on completion of the relevant stage of the connection works.

(4) Any approved permanent fencing in relation to an onshore substation must be completed before that onshore substation is brought into use and maintained for the operational lifetime of the onshore substation.

6. The scope of this document relates to the fencing and enclosures associated with the Playford Corner Works Stage of the EA THREE onshore construction works, as part of the onshore cable route that runs from the landfall location at Bawdsey to the Converter Station works located near Bramford, Suffolk. The works in this stage comprise Work No.s 39 and 40 (See Figure 1.1 Site Context Plan). Fencing and Enclosures Plans have been produced for each stage of the onshore connection works and are provided under separate cover.
7. The Playford Corner 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 access and CCS will be constructed in Summer 2022 and the jointing bay installation, cable pull through and reinstatement will be undertaken as part of the main cable works construction phase.
8. The information contained herein shall be adhered to by the Principal Contractor and their sub-contractors and 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).
9. All appointed fencing contractors will be provided with a copy of the Onshore Cable Route Archaeological Written Scheme of Investigation (WSI) (EA3-LDC-CNS-REP-IBR-000048). The WSI identifies areas where a programme of archaeological investigation (evaluation, mitigation, excavation, built heritage recording and watching brief) is required, and the measures to be taken to protect or preserve in situ or by record any significant archaeological remains that may be found. No installation of fencing or enclosures shall take place in any of the identified archaeological sensitive areas until the required mitigation works have been completed.

2. ABBREVIATIONS

CCS	Consolidated Construction Sites
Chapter 8	Traffic Signs Manual Chapter 8 Traffic Safety Measures and Signs for Road Works and Temporary Situations (Guidelines for (Public) Highways signing, lighting and guarding)
CLO	Community Liaison Officer
DBEIS	Department of Business, Energy and Industrial Strategy
DC	Direct Current
DCO	Development Consent Order
EA ONE	East Anglia ONE Offshore Windfarm
EA THREE	East Anglia THREE Offshore Windfarm
EATL	East Anglia THREE Limited
ECoW	Ecological Clerk of Works
EnvCoW	Environmental Clerk of Works
ES	Environmental Statement
ESC	East Suffolk Council
GPS	Global Positioning System
HVDC	High Voltage Direct Current
MW	Megawatt
NG	National Grid
PCCS	Primary Construction Consolidation Site
SCCS	Secondary Construction Consolidation Site
RTK	Real Time Kinematic
WSI	Written Scheme of Investigation

3. FENCING AND ENCLOSURES PLAN GOVERNANCE

10. Prior to the commencement of construction a senior member of the construction team will be appointed by the Principal Contractor to manage the implementation of the Fencing and Enclosures Plan. Contact details for the appointed member of staff will be submitted to stakeholders for their records prior to commencement of construction.

4. CONSTRUCTION DETAILS

4.1. Cable Works – Overview

11. 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
 - Reinstate all disturbed land and permanent fences and hedges.
12. 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.
13. 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 4-1 – 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

14. 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.
15. 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.

16. 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 900m² within the compound which would typically measure 24m x 115m i.e. 2,760m². (in accordance with Requirement 12(11) which stipulates that the footprint must not exceed 3,740m²). 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-000047).

17. 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.

18. 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.

4.2. Playford Corner Works

19. Playford Corner Works comprise a stage of the onshore connection works and cover Work No.s 39 and 40. The infrastructure within these Work No.s comprises:

- The Playford Corner SCCS (CCS D) in Work No. 40;
- Jointing Bay 12 in Work No. 39;
- Two accesses with the public roads as follows:
 - Access AP-X (Work No. 40) southwards from Playford Mount, to access the Playford Corner SCCS and Jointing Bay 12; and
 - Access AP-W (Work No.39) eastwards from Holly Lane to access Jointing Bay 13 in Work No 38 (this Jointing Bay is not part of the Playford Corner Works);
- A crossing of Church Road (CR08 and CR09); and
- The access tracks/haul roads required to access Playford Corner SCCS, Jointing Bay 12 and also, in part, Jointing Bay 13 in Work No. 38.

20. These are shown on Figure 2.

4.2.1. Accesses AP-X and AP-W, the Crossing Point, Access Tracks and Haul Roads

21. Playford Corner SCCS will be accessed from Playford Mount using Access AP-X. This access was used for the EA ONE project but was fully reinstated following the EA ONE works, so will need to be constructed again under the EA THREE DCO. From Access AP-X, a new temporary vehicular access track of 360m length and 5.5m width will be used to access the Playford Corner SCCS and also reach the edge of the cable corridor (Work No. 39), where 190m of 5.5m wide haul road will link to Jointing Bay 12 (via a crossing of Church Road). The amount of temporary haul road required to access Jointing Bay 12 will be 190m.

22. Access AP-W will be constructed from Holly Lane, along with 670m of 5.5m wide haul road to reach Jointing Bay 13. This access was not used as part of the EA ONE construction works. 210m of this haul road will be within Work No. 38 and is not part of the Playford Corner Works.

23. A crossing of Church Road (CR08 and CR09) will be required. This will be in the same location as that used for EA ONE.

24. No watercourse crossings will be required for the Playford Corner Works.

25. 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.

4.2.2. Secondary Construction Consolidation Site (Work No. 40)

26. The Playford Corner SCCS will be a hub for the delivery of materials, equipment and resources. The dimensions of the Playford Corner SCCS will be 60m long by 20m wide covering a surface area of 1,200m², in accordance with Requirement 12(9)(a) of the DCO which limits the size of each SCCS to 1,200m². The Playford Corner SCCS will also be within the area previously used for the EA ONE SCCS in this location.
27. 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 Playford Corner 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.
28. The SCCS will be constructed first, with the jointing bay 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.
29. The Playford Corner SCCS will remain in situ for the duration of the onshore cable works, prior to being restored as described in Section 4.2.5.

4.2.3. Jointing Bay 12 (Work No. 39)

30. The jointing bay will be located within Work No. 39, 90m to the east of Church Road (Grid Ref 621869, 248384).
31. Once the location of the 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.
32. 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 area is back filled with subsoil.
33. The creation of the jointing bay compound and excavation of the jointing bay will each take a week.

4.2.4. Cable Installation

34. The electrical transmission cables will be delivered to the Playford Corner SCCS where they will be transferred to the jointing bay compound 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-000039). Two cable lengths of approximately 1260m 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.

35. Installation of the cables into the ducts between Jointing Bay 12 and Jointing Bay 13 (not part of the Playford Corner Works) 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.

36. It is expected that pulling and jointing operations 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 Jointing Bays 11 and 12.

4.2.5. Reinstatement

37. Following installation and jointing of the cables, the jointing bay, 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-000042). Temporary fencing around any new planting would be removed once reinstatement was established.

38. The Playford Corner SCCS will remain in situ for the duration of the cable works and will then be removed and reinstated.

5. FENCING AND ENCLOSURE CATEGORIES

5.1. Overview

39. This section explains the strategy behind the choice of fencing and enclosures required during construction for the different parts of the Playford Corner Works including PCCS, access, haul road and jointing bay. The extent and type of the fencing and enclosures to be installed for the project as a whole will be in accordance with the specification for fences set out in the Specification for Highway Works, Vol. 3 (BS1722 Part 2), or equivalent and are governed by five main parameters:

- Adjacent Land Use – stock or arable - the infrastructure shall be generally of post and wire, post and rail or stock proof wire mesh fencing as depicted by adjacent land use.
- Security – at locations where plant, machinery and materials are being stored then the level of fencing or enclosures will be increased to prevent unauthorised entry. Adequate security will be provided to protect the public and staff, prevent theft from or damage to the works, and prevent unauthorised entry to or exit from the site. Site gates will be closed and locked when there is no site activity and appropriate security measures shall be implemented.
- Environmental Constraints/Protection – where environmental receptors have been identified then fencing will be installed to ensure their protection. The type of fencing will be determined by the environmental receptor and associated requirements. Fencing will also be required to protect trees and hedgerows during construction and those planted post-construction to ensure establishment.
- Third Party Requirements – where stakeholders stipulate specific requirements.

40. Further detail is provided on each of the fencing types proposed in Section 6 Fencing Details. On completion of the cable installation works, all areas will be reinstated and, other than that associated with landscaping/planting protection (see Section 5.6), no permanent fencing will be required.

5.2. Secondary Construction Consolidation Site (SCCS)

41. The onshore construction works will be supported by up to five SCCS which 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 of the jointing bays. They will be of sufficient size to accommodate limited storage of materials, equipment and labour welfare facilities

42. The Playford Corner SCCS will require a high level of security to protect the contents from third parties. It will have Heras fencing and lockable gateways.

5.3. Accesses and Haul Roads

43. Access tracks and haul roads will be fenced with post and wire fencing to prevent unauthorized access as far as reasonably practicable in accordance with the Construction Design and Management Regulations (CDM) 2015.

5.4. Jointing Bay Compound

44. Heras fencing and lockable gates of a suitable type will be installed at the jointing bay compound (including the jointing bay) to ensure the construction area is protected from un-authorized access. The excavated joint and transition bay will also be protected by Heras fencing and signage to protect the workforce.

45. Where the boundary interface requires a higher level of protection, for instance livestock or trees or hedgerow, then alternative protective fencing will be deployed. Signage and notices will be fixed along this boundary to inform members of the public of the works within.

5.5. Landscaping/Planting

46. Where replanting is to take place, post and rail, post and wire, rabbit proof fencing or tree guards will be used to protect replanted trees and shrubs. Once replanted, the reinstated area post construction will also be fenced off with stock proof fencing to prevent damage by livestock, as required.

47. Further details are provided in the Landscape Management Plan (EA3-LDC-CNS-REP-IBR-000042), presented under separate cover.

5.6. Retained Trees and Hedgerows

48. Trees that are to be retained and are within the vicinity of any works will be protected by Heras fencing in accordance with the British Standard 5837:2012. The fencing shall be installed at a specified distance from the tree defined by the Root Protection Area as calculated by the Arboricultural Clerk of Works. 'Crowd control fencing' will also be installed as a barrier to protected trees hedgerows where needed.

49. Further details are provided in the Landscape Management Plan (EA3-CON-R-IBR-010129), presented under separate cover. This includes an Arboricultural Method Statement and Temporary Protective Fencing Specification.

5.7. Ecological Protection

50. A range of fencing may be installed as part of the mitigation strategy for protected species. Full details of these fencing requirements are presented in the Playford Corner Works Ecological Management Plan (EA3-LDC-CNS-REP-BOW-000002) presented under separate cover, however the types of fencing to be used are described within this plan in Section 6.

51. No temporary reptile and newt fencing will be required for the Playford Corner Works.

52. A number of badger setts have been identified within the Development Order Limits, due to their presence within or in close proximity the construction works some setts may need to be closed. In some cases, the closure of the sett will require the installation of badger exclusion fencing around the sett to be closed to prevent them from entering. This fencing will be installed as part of the pre-construction works in Spring 2022 and should the sett not be closed destructively, the fencing will remain in place until construction in that area has been completed in 2025. Badger proof fencing will be designed in a way to avoid re-entry of the sett.

6. FENCING DETAILS

6.1. Overview

53. This section provides details on the different types of fencing and enclosures to be used during the construction of the Playford Corner Works. More technical details on their application are provided in the Appendix 1 Fencing Specifications and Appendix 2 Gateway Specifications.

6.2. Post and Wire

54. This is a level of fencing that offers good demarcation properties and is easy and quick to erect. This fence type can, however, be subject to damage risk from livestock and as such is only suitable for land which does not interface with livestock or is identified as lowest risk.

- 55. Strain posts will be installed at each end of the fence and at all changes of direction or gradient. Rectangular mild steel galvanised wire mesh fencing will be strained between these and supported by intermediate posts installed at regular intervals.
- 56. This type of fencing and associated access gates could also be used to ensure sufficient field enclosure whilst hedgerows establish and grow as part of the post construction landscaping (refer to Landscape Management Plan (EA3-LDC-CNS-REP-IBR-000042) for more details). Further details and an illustration are provided in Appendix 1.



Figure 6-1 Post and Wire Fencing (with new fencing behind)

6.3. Post and Rail

- 57. This fence type will be deployed around the construction working areas where post and wire is not deemed sufficiently robust. It involves vertical posts being knocked into the ground using a mechanical or manual fence knocker at regular spacing. Three horizontal rails are attached between each pair of posts.
- 58. This type of fencing and associated access gates could also be used to ensure sufficient field enclosure whilst hedgerows establish and grow as part of the post construction landscaping (refer to Landscape Management Plan (EA3-LDC-CNS-REP-IBR-000042) for more details). Further details and an illustration are provided in Appendix 1.



Figure 6-2 Post and Rail Fencing

6.4. Stock Proof

59. Where a construction working area interfaces with farmland that contains larger livestock, stock proof fencing will be installed to ensure they are effectively contained through-out the period of the works.
60. The installation is as per the Post and Wire fencing, however, an increased specification will be required subject to the type of livestock e.g. installation of additional barbed wire protection. Further details and an illustration are provided in Appendix 1.

6.5. Heras Fencing

61. Heras fencing offers is easy to erect and dismantle and will be used where construction works are taking place in areas which require additional security to prevent unauthorised access, such as the SCCS and jointing bay compound. In addition, all open excavations will be cordoned off with Heras fencing panels.
62. Heras fence panels will be anti-climb specification (2,000mm high by 3,000-3,500mm wide). Panels will be held in situ with the use of thermo plastic support feet and fixed with the use of two couple clips per panel. Where extra support / anchoring is required extra support feet, concrete support feet or sand bags will be used.



Figure 6-3 Example Heras Fencing

6.6. Signing, Lighting and Guarding

63. Signing, lighting and guarding in accordance with Traffic Signs Manual Chapter 8 will be installed at all working construction areas, as required, to warn and protect the work-force from the dangers present.
64. The following are compliant with the NRSWA ('New Roads and Street Works Act 1991) and the Safety at Street Works and Road Works – A Code of Practice 2013:
- Signing – adequate warning and instruction signs to warn road users approaching from any direction of ongoing works
 - Lighting – warning lights will be deployed depending on the speed limit in force on a particular piece of highway (mandatory for 40mph and above) and traffic signals will be used for lane closures. Should night working be permitted at any time then this will comply with the External Lighting Emissions Plan (EA3-LDC-CNS-REP-IBR-000022)

- Guarding – in the vicinity of public roads, the work-force will be protected by Chapter 8 barriers with lead-in cones. All open excavations will be cordoned off with Heras fencing panels.



Figure 6.4 Example Chapter 8 Barrier

6.7. Gateways

65. Gates will match the fence installation type. Single gateways will comprise steel posts and be 3600mm wide by 1000mm high and double gateways will comprise steel gates and posts and be 6000mm wide by 1000mm high. Where these will be located close to a public highway, gates will be set back as far as possible to allow vehicles to leave the carriageway safely, a minimum of 2m from the highway will be observed. Further details and an illustration are provided in Appendix 2 and 3.



Figure 6.5 Example Heras / Steel Hoarding Gateways

6.8. Tree and Hedgerow Protection

66. Heras fencing will be installed in accordance with the British Standard 5837:2012 along the Root Protection Area of trees where there is a direct interface between the feature and the construction working area to protect against potential root disturbance. Protective fencing to BS 5837:2012 is braced to protect from failure from impacts. Reflective signage will be fitted to the barrier as required.
67. Fencing will also be installed to protected hedgerows as required, the protective fencing is to be 'crowd control fencing', 1.1m high. Further details and illustrations are provided in Appendix 1.



Figure 6.6 Example Heras Fencing Tree Protection

68. The Playford Corner Landscape Management Plan (EA3-LDC-CNS-REP-IBR-000043) provides further details on how tree and hedge protection is to be deployed.

6.9. Landscaping/Planting Protection Fencing

69. Post installation protective fencing will also be installed where required around areas of new planting. Where required this may include standard stock proof timber post and rail fencing and/or timber post and wire fencing will be used to complete boundaries and protect new hedging and woodland.

6.10. Ecology Fencing

70.

6.10.1. Badger Exclusion Fencing

71. During the closure of badger setts, badger exclusion fencing may be installed to prevent the badgers from re-entering the sett. The fencing will comprise badger netting (e.g. diamond mesh) installed between straining posts, as shown in Figure 6.7 or as advised by the licensed ecologist. The netting will be partially buried to prevent badgers burrowing underneath (see Figure 6.8).

72. The fencing will comprise: 75mm i566 intermediate posts 1,800mm long at 3.5m intervals; 150mm straining posts 2,400mm long at the start and ends and changes in direction; and high tensile wire/ galvanized steel badger netting with either two strands of 2.5mm HT line wire (top and bottom) or a 45° turnback on the top of the fencing in the direction of the non-excluded area.

73. Posts will be driven in using a post knocker to a max depth 1,000mm. A 300mm wide x 300mm deep trench will be excavated using a mini-excavator along the fence line. Badger netting and line wires will then be attached to the post and strained using wire strainers. Badger netting will be placed into the ground to create 300mm vertical with 300mm horizontal returns. Once the wire is installed, the trench will be backfilled and compacted.



Figure 6.7 Example Badger Fencing



Figure 6.8 Installation of Badger Fencing

6.11. Maintenance

- 74. All fencing will be regularly inspected by Construction Management Team and contractors. Where defects or damage is found, repairs will be undertaken within 24hrs, with Chapter 8 Signing, Lighting & Guarding used to prevent unauthorised access prior to any full repairs.
- 75. Ecology fencing will be inspected by the EcoW, following installation and on a bi-weekly basis during spring and summer and a monthly basis during the autumn and winter.

6.12. Replacement Fencing

- 76. Landowners fencing that has to be removed as part of the construction works will be replaced on a like-for-like basis. Although existing fencing will be retained / repaired as much as possible, some circumstances will necessitate partial or complete removal.

7. SUMMARY OF FENCING AND ENCLOSURE REQUIREMENTS

77. The following table shows a summary of proposed fencing and enclosures to be installed during the onshore construction works. Illustrative drawings are presented in Appendices 1 to 2.

Table 7-1 Summary of Fencing and Enclosure Requirements

Category	Fencing and Gateway Types
SCCS	Heras fencing with double gateways; Chapter 8 Signing, Lighting and Guarding
Access and Haul Road	Post and wire fencing
Jointing Bay Compound	Heras fencing with double gateways Chapter 8 Signing, Lighting and Guarding
Landscaping/Planting	Stock proof timber post and rail fencing and/or timber post and wire fencing
Trees and Hedgerows Protection	Heras fencing Crowd control fencing
Ecological Protection	Badger exclusion fencing

8. DECOMMISSIONING

78. On completion of the onshore construction works, all fencing will be removed with the exception of any landscaping protection fencing, if required. All boundaries will be reinstated to match existing/previous boundary treatments. All reinstatement will be in agreement with affected landowners. Temporary fencing will be removed as soon as practicable.
79. General disposal parameters for the fences/enclosures once removed comprise:
- Re-use by local landowners;
 - Re-use/Recycle via local recycling centres;
 - Off Hire / Return to applicable depots to be re-used in future; or
 - Disposal – remove to applicable disposal site in line with current legislative requirements

9. REFERENCES

Department for Transport, 2009, *Traffic Signs Manual, Chapter 8 Traffic Safety Measures and Signs for Road Works and Temporary Situations, Part 1: Design*, London, TSO (<https://www.gov.uk/government/publications/traffic-signs-manual>)

English Nature 2001 Great Crested Newt Mitigation Guidelines, English Nature, Peterborough

APPENDIX 1 FENCING SPECIFICATIONS

Post and Wire

Strain posts will be knocked into the ground with the use of a mechanical or manual fence knocker to a depth of 750mm. Where circumstances do not allow posts to be knocked into the ground, then post holes shall be excavated to a depth of 800mm x 300mm x 300mm. The excavations will be backfilled with the use of compacted as dug material.

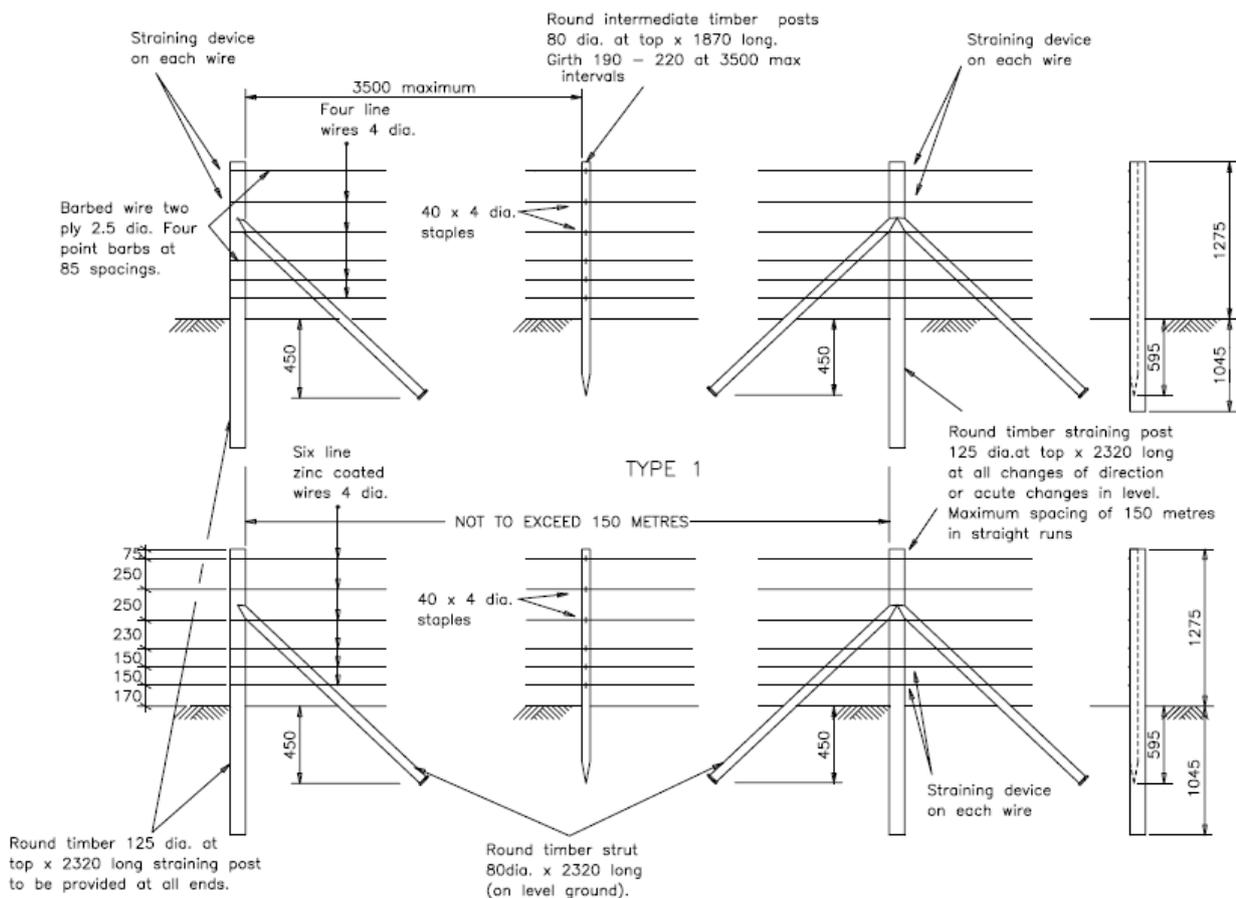
Support posts will be knocked into the ground a depth of 450mm. Where it is impracticable to knock the posts in, an excavation to a depth of 500mm will be undertaken and filled with compacted as dug material.

Intermediate posts will be knocked into the ground a depth of 325mm. Where it is impracticable to knock the posts in an excavation to a depth of 450mm will be undertaken the installation will be filled with compacted as dug material.

Dimensions:

- Terminal/Strain Posts – round, 125mm x 2320mm long
- Intermediate Post – round, 80mm x 1870mm long, installed at maximum 3500mm intervals
- Strain Supports installed where there is a change of direction or 150m maximum spacing
- Rectangular Mild Steel Galvanised Hinge Joint Wire Mesh Fencing.

Figure A Post and Wire Fencing



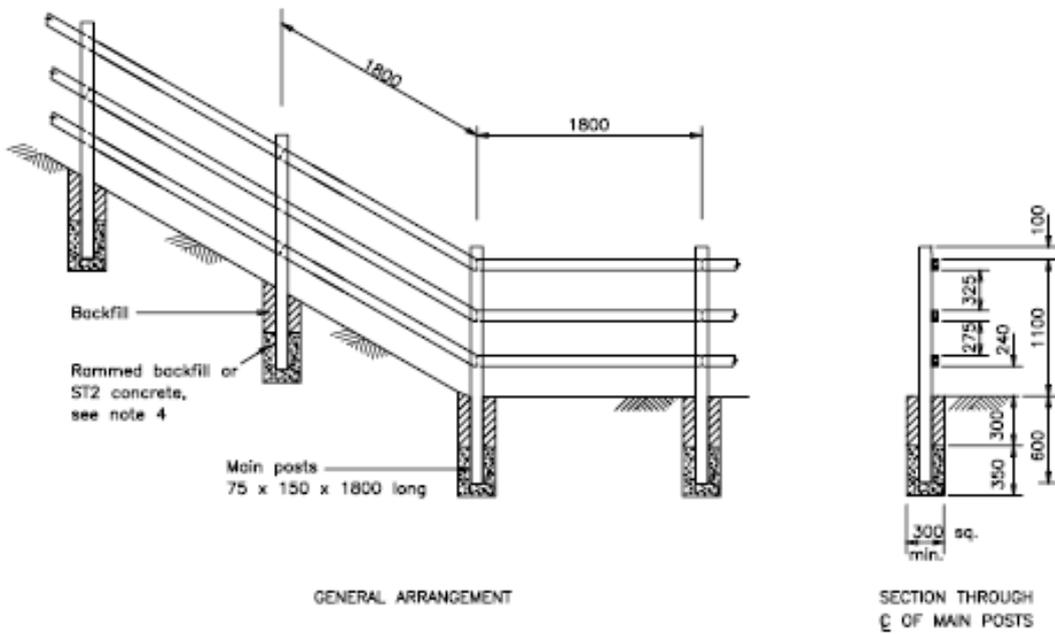
Post and Rail

Posts will be knocked into the ground with the use of a mechanical or manual fence knocker to a depth of 600mm. Where circumstances do not allow posts to be knocked into the ground, then post holes shall be excavated to a depth of 600mm x 300mm x 300mm. The excavations will be backfilled with the use of compacted as dug material.

Dimensions:

- Posts - 75mm x 150mm x 1800mm long
- Rails - 38mm x 87mm
- Post spacing - 1800mm centre spacing

Figure B Post and Rail Fencing



FOR

Stock Proof

Strain posts will be knocked into the ground with the use of a mechanical or manual fence knocker to a depth of 750mm. Where circumstances do not allow posts to be knocked into the ground, then post holes shall be excavated to a depth of 800mm x 300mm x 300mm. The excavations will be backfilled with the use of compacted as dug material.

Support posts will be knocked into the ground to a depth of 450mm. Where it is impracticable to knock the posts in, an excavation to a depth of 500mm will be undertaken with 225mm of concrete placed in the bottom of the installation and the remainder will be filled with compacted as dug material.

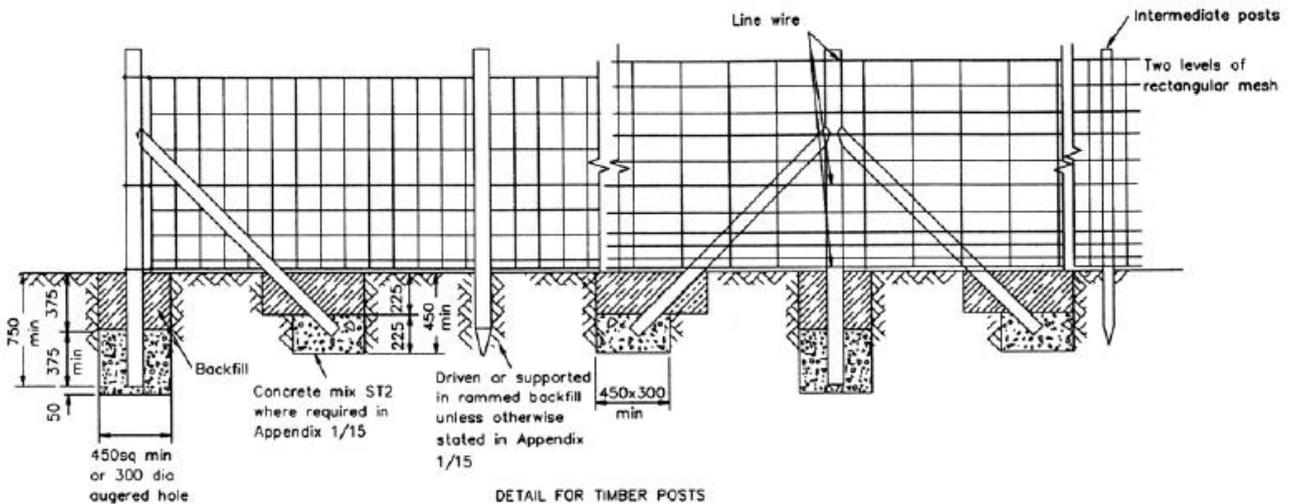
Intermediate posts will be knocked into the ground to a depth of 325mm. Where it is impracticable to knock the posts in, an excavation to a depth of 450mm will be undertaken. The installation will be filled with compacted as dug material.

Dimensions:

- Terminal/Strain Posts – round, 125mm x 2320mm long
- Intermediate Posts – round, 80mm x 1870mm long, installed at maximum 3500mm intervals
- Strain Supports installed where there is a change of direction or 150m maximum spacing
- Rectangular Mild Steel Galvanised Hinge Joint Wire Mesh Fencing

2 x Strands of 2 Ply HT Barbed Wire – evenly tensioned shall be installed along the top of the fencing. Where there is interface with the general public plain wire shall be used in lieu of barbed wire.

Figure C Stock Proof Fencing



Crowd Control Fencing



Figure D Crowd Control Fencing

FOR DISCHARGE

APPENDIX 2 GATEWAY SPECIFICATIONS

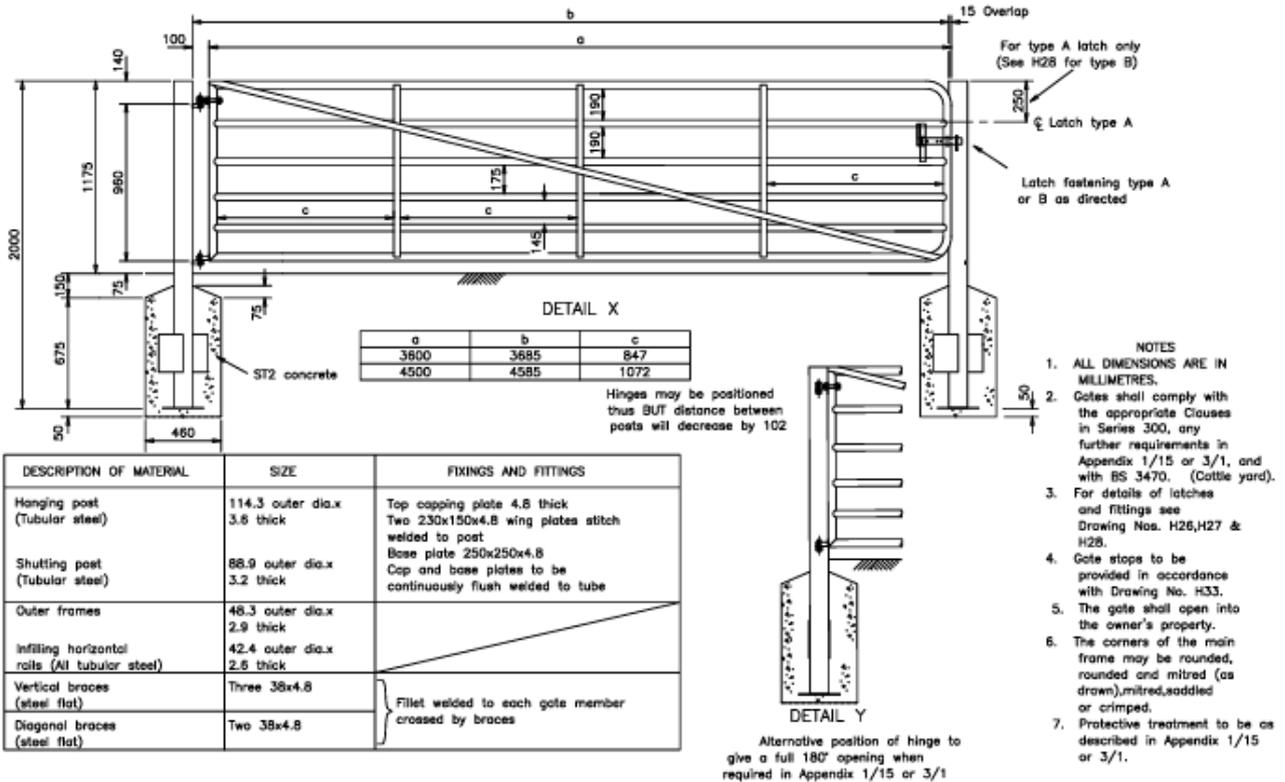
Single Gateway

Typical arrangements for single gateways will be steel gates with steel posts, unless otherwise requested by landowners. The gateway shall be 3600mm wide by 1000mm high.

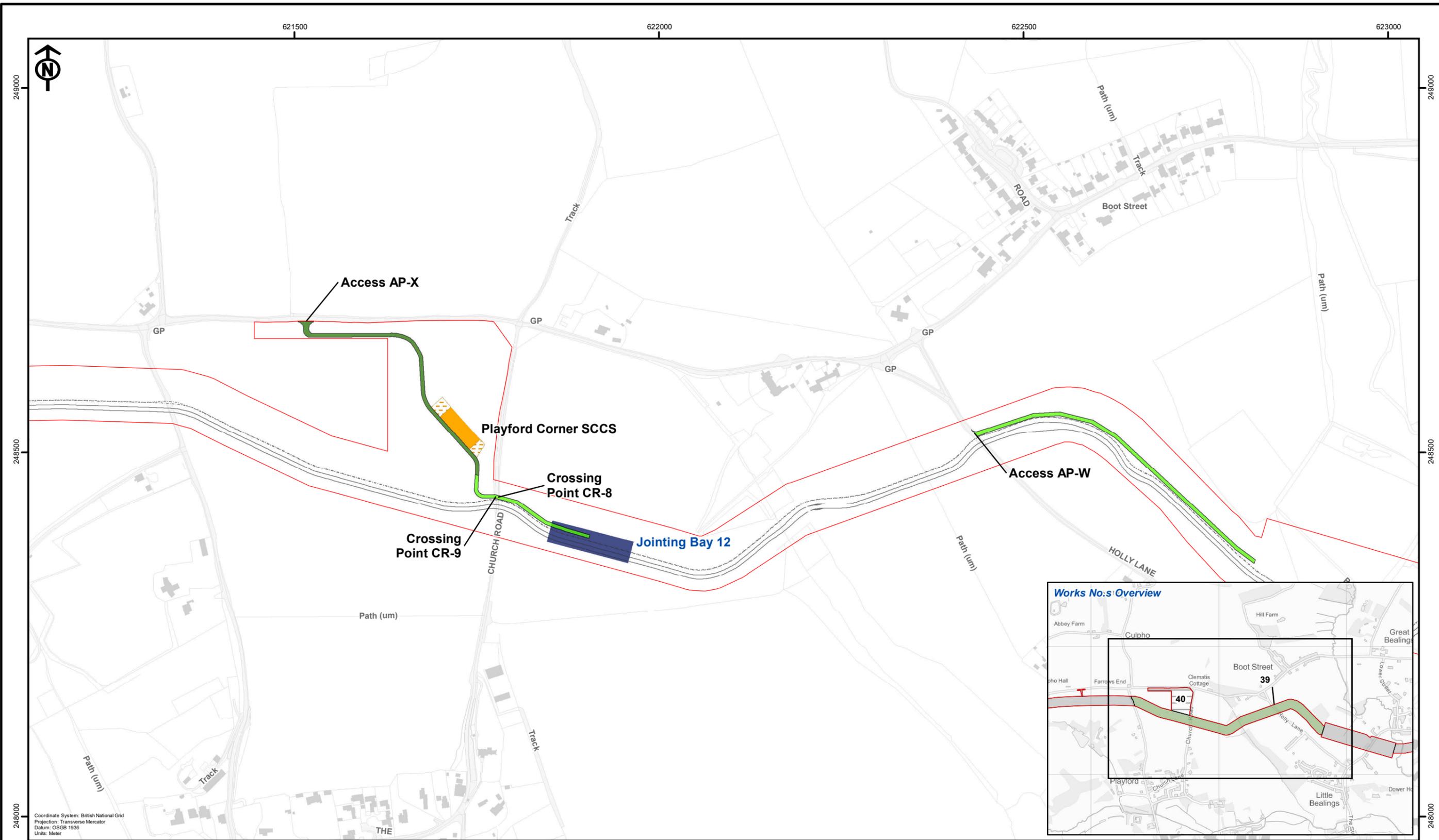
Posts will be installed 825mm below the surface level and will be set in concrete.

All gates will be fitted with warning and information signs.

Figure E Typical Single Gateway



FOR



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

- Works No.s**
- 39
 - 40



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

Original A3 Plot Scale 1:5,000

0 100 200 Metres

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NOT TO BE USED FOR NAVIGATION.

Playford Corner Works Stage

Figure 1: Site Context Plan

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