Lime Down
Solar Park

Environmental Statement

Volume 3, Appendix 3-2: Cable Route Construction Method Statement

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Appendix 3-2: Cable Route Construction Method Statement

1.1 Purpose

1.1.1 The purpose of this Construction Method Statement (CMS) is to provide details of how the Cable Route Corridor is to be constructed to inform the assessment for the Environmental Statement (ES).

1.1.2 The components described comprise:

- Interconnecting Cables and Grid Connection Cables;
- Modifications to Existing National Grid Melksham Substation; and
- Access points and haul route.

1.2 Interconnecting Cables and Grid Connection Cables

1.2.1 The electricity generated by the Scheme will be exported to the National Grid via a single 400 kV circuit comprised of three buried cables (the Grid Connection Cables) from the onsite substation to the Existing National Grid Melksham Substation within the Cable Route Corridor. The total length of the Cable Route Corridor assessed at ES is approximately 22 km in length.

1.2.2 The Order Limit width is typically 50 m with the width increasing in places (such as road and rail crossings) up to 665 m to allow flexibility for final crossing design alignment and to allow space for temporary compounds. The actual construction working width (i.e. the area of land fenced off and utilised during construction) within the Order Limit will be a maximum of 25m.

1.2.3 The Cable Route Corridor crosses a range of existing infrastructure such as roads (A429, M4, A420, A4), minor roads and tracks, Public Rights of Way (PRoW), existing and/or buried underground utilities, railway lines (Great Western Railway South Wales Main Line and Great Western Main Line), field drains and main drains.

1.3 Avoidance Areas

1.3.1 The start and end points of the different construction methods (being open trench and trenchless technologies) for the whole of the 22 km route will not be confirmed until the detailed design stage. Therefore, the approach to the EIA is: 1) to commit to ‘Avoidance Areas’ where the cable installation method will use trenchless technologies rather than open cut trenches; 2) assess a reasonable ‘worst case scenario’ that considers both the open trench and Horizontal Directional Drilling (HDD) methods (refer to Sections 1.5 and 1.6).

1.3.2 The launch and reception pits associated with trenchless technology will be located outside of Avoidance Areas to minimise impacts in these locations.

1.3.3 Whilst there will be no open cut trenches or launch/exit pits in the Avoidance Areas, parts of the haul road will cross a number of Avoidance Areas. The haul road is further discussed below.

1.3.4 Avoidance Areas have been identified throughout the iterative EIA process, through detailed design and consultation and have informed the ES.

1.3.5 The locations of the Avoidance Areas are shown in **ES Volume 2, Figure 3-2-1 to 3-2-10: Key Construction Phase Features [EN010168/APP/6.2].**

1.4 Open Cut Trenching

1.4.1 For the open cut sections of the Cable Route Corridor, the Scheme allows for necessary spatial flexibility in the routing of the Grid Connection Cables and Interconnecting Cables. The working width for installation of the cable is anticipated to be 25 m. This may be widened in places and narrowed in others, for example to minimise removal of hedgerows or at open cut watercourse crossings. The 25 m working width will include a haul road along which vehicles and plant will be located as well as an area for temporary storage of excavated spoil.

1.4.2 For the Interconnecting Cables, the open cut cable trench would be between 1 m and 7 m wide. This includes separation distances where multiple cables are running in parallel. Trench depth would be up to 2 m subject to design and ground conditions.

1.4.3 For the Grid Connection Cables, the working area will include a single trench within which the 400 kV connection will be installed. The trench will be up to a maximum of 1.7 m wide and 2 m deep. A cross section of a typical 400 kV cable trench is shown in Annex A.

1.5 Trenchless Technologies

1.5.1 Where the need for trenchless technologies has been identified at crossing points or Avoidance Areas, feasibility studies will be carried out at the detailed design stage to identify the appropriate technology. Trenchless technologies may include tunnelling, HDD, Pipe Jacking and Horizontal Auger Boring.

1.5.2 Of the trenchless technologies which could be selected, HDD is considered to represent the worst-case scenario in terms of likely environmental effects because it requires the largest area of land to undertake and the most equipment to conduct the works.

Horizontal Directional Drilling

1.5.3 The sections of the cables that will be installed via HDD require launch and reception pits. Launch and reception pits will be sited outside the avoidance areas. An illustrative example of a 25 m x 25 m launch pit working area and layout for a 400 kV connection is included within **Annex C**.

1.5.4 Activities within the working areas are listed in the sections below. The majority of the preparation for HDD will be undertaken within normal working hours, however continuous working (typically 1-2 days) may be required for drilling as this requires continuous works to complete the operation.

Method Statement for HDD

1.5.5 Any works relating to HDD activities will be undertaken in line with a Method Statement. This commitment is secured via the **Outline Construction Environmental Management Plan (CEMP) [EN010168/APP/7.12]**. Strict adherence to the Method Statement will be required when undertaking HDD with any changes requiring approval from the Contractors Project Manager and documented risk assessments. The Method Statement will cover project details, equipment setup, drilling procedures, and the handling of drilling fluids, emphasizing adherence to safety measures and risk assessments. The document will also include details on emergency response procedures, environmental protection strategies, and the use of personal protective equipment. It will also stress the importance of training, supervision, and communication among all personnel involved to ensure the successful and safe completion of the works.

1.6 Worst Case Scenario

1.6.1 The ES assesses the reasonable worst-case scenario of effects to account for matters of design detail that are yet to be confirmed. This scenario will vary depending on the discipline. Each discipline defines the worst case scenario for their respective chapter and assesses it. The worst case scenario includes consideration of the maximum potential effects associated with both the HDD and open trench construction options.

1.6.2 The worst case footprint (or maximum area of disturbance) comprises:

- 25 m construction working width;
- Up to 1.7 m wide trench up to 2 m deep for the Grid Connection Cables;

- 1 to 7 m wide trenched area (inclusive of separation distances where multiple cables are running in parallel) and trenches up to 2 m deep for the Interconnecting Cables; and
- 25 m x 25 m launch and reception pit working areas.

1.7 Access Points and Haul Route

1.7.1 During the construction phase a number of access points will be utilised to facilitate access/egress to all land contained within the Cable Route Corridor. The access points are shown in **ES Volume 3, Appendix 13-1: Transport Assessment [EN010168/APP/6.3]** and detailed through the **Outline Construction Traffic Management Plan (CTMP) [EN010168/APP/7.22]**.

1.7.2 A temporary haul road will be established throughout the Cable Route Corridor to enable vehicles to access the launch / reception pits and open cut trenches.

1.7.3 The majority of the haul road will be constructed using a hardcore Ministry of Transport (MOT) type 1 stone base. Where permissible, aluminium trackway will be used as an alternative to minimise ground disturbance.

1.7.4 The haul road will be designed to avoid drainage ditches and watercourses based on the surface water flood map for the region. Where watercourses cannot be avoided, both temporary culvert and an open span bridge crossing will be considered, with the type of crossing selected being determined based on-site specific factors and in consultation with the relevant authority and secured via the **Outline CEMP [EN010168/APP/7.12]**. Refer **ES Volume 3, Appendix 11.1: Flood Risk Assessment and Drainage Strategy Covering Report [EN010168/APP/6.3]** for details of the crossing methodology for each watercourse.

1.7.5 Environment Agency Flood Defences will be avoided, with a minimum 16 m standoff between the base of the flood defence and the haul road.

1.7.6 The haul road will be removed following installation of the Grid Connection Cables and Interconnecting Cables and the land used for the haul road fully reinstated back to its original use.

1.8 Plant and Equipment

1.8.1 Indicative plant and equipment to install the cable comprises the following (or equivalent):

HDD

Launch Pits

- 44 ft articulated lorry for delivery / pick-up of the directional drill rig;
- Three 44 ft articulated lorries for delivery of cable;
- Up to five three-axle rigid 30 ft flatbeds for delivering temporary trackway;
- One telehandler anticipated to be delivered on 44 ft articulated lorry;
- One excavator (anticipated to be delivered and picked up with the telehandler);
- Two 6 m^3 concrete lorries for delivering the concrete to create the joint bays;
- Two vans (4 m x 2 m);
- Beavertail Lorry & 100 Gallon Tank 13 m x 2.5 m Rod boxes;
- JT8020 – HDD Rig 9 m Long 2.6 m Wide (20t);
- John Deere 7280R Tractor and tanker dimensions – 12.3 m x 2.5 m;
- Vehicle with 2 x 1000 Gallon Mixing Tanks 9 m x 2.5 m; and
- Mud Mixing Tank Unit 7.6 m x 2.5 m.

Reception Pits

- One excavator (anticipated to be delivered and picked up with the telehandler);
- Two 6 m^3 concrete lorries for delivering the concrete to create the joint bays;
- Three 44 ft articulated lorries for delivery of cable;
- Up to five three-axle rigid 30 ft flatbed for delivering temporary trackway;
- One telehandler anticipated to be delivered on 44 ft articulated lorry;
- Three excavators (anticipated to be delivered and picked up with the telehandler);
- The 6 m^3 concrete lorries for delivering the concrete to the create the joint bays; and
- One flatbed lorry for the delivery of sand.

Drilling Fluid / Mud

1.8.2 The following products will be necessary to facilitate the drilling process:

- **Bore-Gel** (or similar)**:** Dry, powdered Bentonite (mined clay product) will be mixed with non- contaminated, non-saline water to create a suitable drilling fluid.
- **EZ Mud** (or similar): Liquid polymer, mixed with non-contaminated, non-saline water to build viscosity in the Bentonite drilling fluid. This may be added to the drilling fluid as the drilling progresses depending on prevailing ground conditions.

1.9 Construction

1.9.1 Construction activities will include:

- The establishment of mobilisation areas and haul road;
- Temporary construction compounds;
- Stripping of topsoil in sections;
- Trenching in sections;
- Appropriate storage and capping of soil;
- Appropriate construction drainage with pumping where necessary;
- Sectionalised approach of duct installation;
- Excavation and installation of jointing pits;
- Cable pulling;
- Cable joint installation;
- Implementation of crossing methodologies for watercourses, infrastructure (including roads and rail), and sensitive habitats (e.g. HDD, cable bridging);
- Testing and commissioning; and
- Site reinstatement and habitat creation.

Spoil

1.9.2 During construction of the Cable Route Corridor, spoil will be stored temporarily within designated areas adjacent to the cable route and within the temporary construction compounds. The spoil will be utilised to backfill the launch and exit pits, reinstate the temporary construction compounds and any temporary access roads. Should any contaminated spoil be

identified during construction, this would be transported off site to a licenced waste facility for treatment. It is anticipated that no other spoil will be removed from the Cable Route Corridor.

1.9.3 Measures to manage soil are set out in the **Outline Soil Resources Management Plan [EN010168/APP/7.15]**.

Construction Compounds and Lay-Down Areas

1.9.4 There will be a number of temporary construction compounds along the Cable Route Corridor approximately 4-6 km apart. The compound locations are shown in ES **Volume 2, Figure 3.2.6 to 3.2.10 Key Construction Phase Features**.

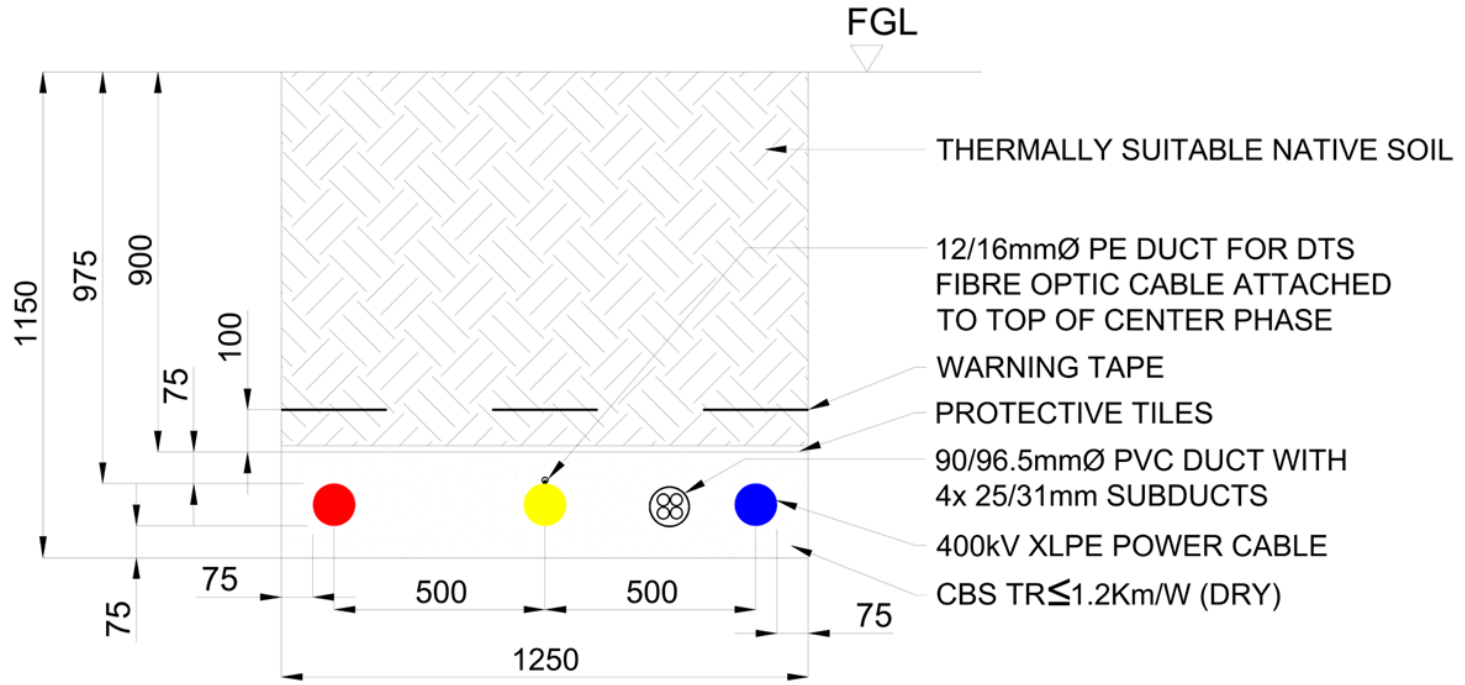
1.9.5 In addition, at each of the Cable Route Corridor access locations, there will be temporary construction laydown areas up to a maximum of 80 m x 80 m. The laydown areas will allow construction vehicles to turn off the public highway and park safely. The laydown area footprint will be determined by the Applicant and will take into consideration topography, drainage, heritage and environmental constraints. Activities at the laydown areas will include receipt of deliveries, unloading, provision of welfare and storage of plant and construction materials. The areas will include portacabins, welfare and power generators and will be secured using heras fencing and security cameras. Upon completion of construction, the laydown areas will be removed and the land reinstated.

Construction Programme

1.9.6 It is anticipated that the construction of the Cable Route Corridor will be undertaken over an 18-month period with each discipline in the ES considering the worst case duration. Over the anticipated 18-month period, cable installation will follow behind trench excavation / HDD with the cables being installed into the ducts. There will be overlap of up to six weeks between sections as individual joint bays become available and completed bays are backfilled and reinstated.

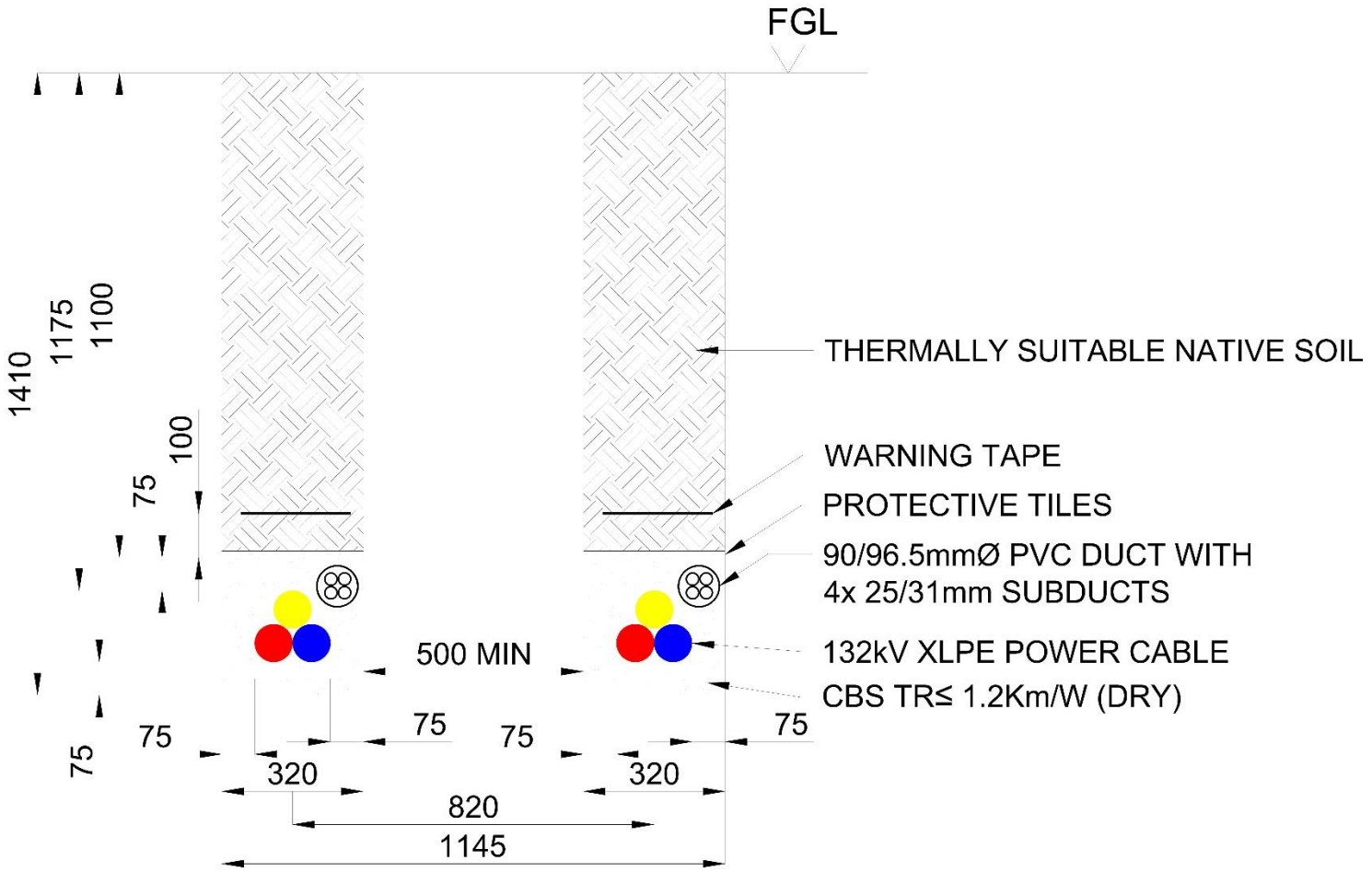
Annex A Illustrative Trench Cross-Sections

Grid Connection Cable

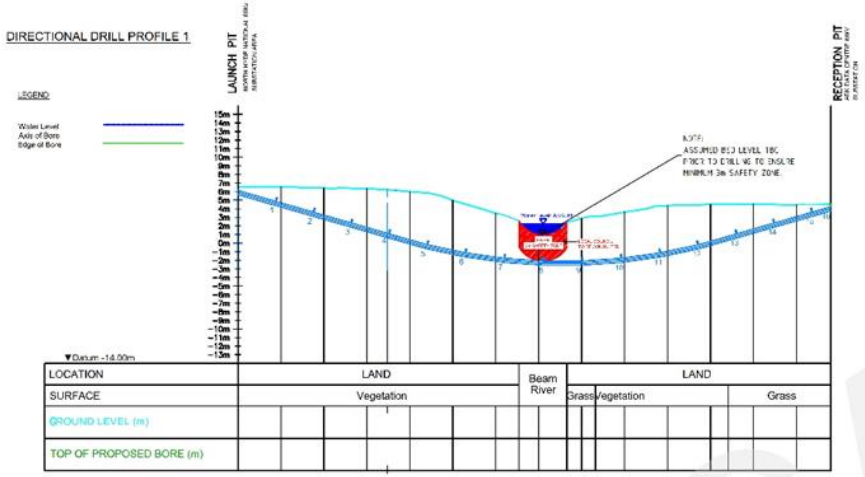


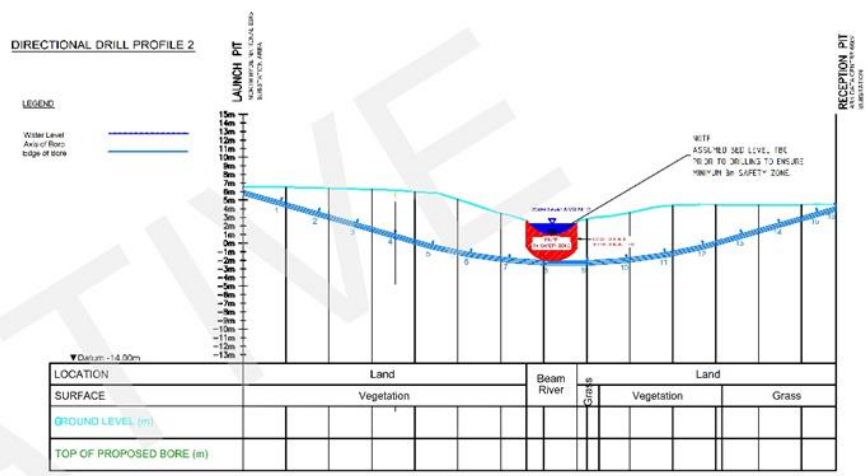
NOT FOR CONSTRUCTION

Interconnecting Cables



Annex B Indicative HDD Cross Sections





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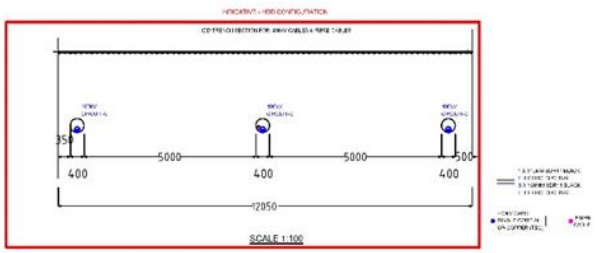

Annex C Illustrative 25 m x 25 m HDD Launch Pit Site Layout for a 400 kV Connection