# Plas Power Solar and Energy Storage Project

## 1.0.7 Outline Scheduled Ancient Monument Consent Application Form and Supporting Information

**February 2024**

**DNS Ref: DNS/3253253**

# APPLICATION *for Scheduled Monument Consent*

ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979

*To be completed by or on behalf of the applicant in BLOCK CAPITALS or typescript*

## 1. Applicant

| | |
|---|---|
| Name | Lightsource SPV 192 Ltd (c/o Richard Conolly, RPS Consulting Services Ltd) |
| Address | Atholl Exchange, 1st Floor, 6 Canning Street Edinburgh |
| Postcode | EH3 8EG |
| Telephone number | 01315555011 |

## 2. Occupier of monument (if not the applicant)

| | |
|---|---|
| Name | Mr Allan Morris and Mr Leslie Morris (J H Morris & Sons) |
| Address | Cadwgan Hall Farm, Bersham, Wrexham |
| Postcode | LL14 4LH |
| Telephone number | 01315555011 |

## 3. Monument to which application relates

| | |
|---|---|
| Name (if any) of monument | Offa's Dyke |
| Address or location | Offa's Dyke: Cadwgan Hall Section, extending from River Clywedog to the Railway |
| County Monument Number | DE132 |
| National Grid reference | SJ 29830 48615 |

## 4. Description of proposed works

Please refer to enclosed Outline SMC document which contains a full description of the works proposed.

Cadw is the Welsh Assembly Government's historic environment service. Its aim is to promote the conservation and appreciation of Wales's historic environment.

Cadw, Welsh Assembly Government,
Plas Carew, Unit 5/7 Cefn Coed,
Parc Nantgarw, Cardiff CF15 7QQ
Tel 01443 33 6000 Fax 01443 33 6001
Email cadw@wales.gsi.gov.uk Website www.cadw.wales.gov.uk

Cadw

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

## 5. List of plans and drawings accompanying application

Please refer to enclosed Outline SMC document and Figures.

## 6. Any other information relevant to application

Please refer to enclosed Outline SMC document.

I/We hereby apply for scheduled monument consent for the works described in this application and shown on the accompanying plans and drawings.

Name Richard Conolly

Signature Date

On behalf of RPS Consulting Services Ltd (on behalf of Lightsource SPV 192) *

* Where the application is being dealt with by an agent to whom correspondence should be sent, state the:

Name of agent Richard Conolly

Address of agent Atholl Exchange, 1st Floor, 6 Canning Street Edinburgh

Postcode EH3 8EG

Telephone number 01315555011

# CERTIFICATE *of Ownership*

ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979

*One of the following certificates must be completed by or on behalf of the applicant*

## A. Certificate in accordance with paragraph 2(1)(a) of Schedule 1 to the Act

It is hereby certified that no person other than the applicant was the owner (note x) of the monument to which the accompanying application relates at the beginning of the period of twenty-one days which ended on the date of the application.

Signature _____ Date _____

## B. Certificate in accordance with paragraph 2(1)(b) of Schedule 1 to the Act

It is hereby certified that the applicant has given the requisite notice of the accompanying application to all the persons other than the applicant who, at the beginning of the period of twenty-one days which ended on the date of the application, were owners (note x) of the monument to which the application related, namely (note y)

_____

_____

_____

Signature _____ Date _____

## C. Certificate in accordance with paragraph 2(1)(c) of Schedule 1 to the Act

It is hereby certified:

(1) that the applicant is unable to issue a certificate in accordance with either paragraph 2(1)(a) or (b) of Schedule 1 to the Ancient Monuments and Archaeological Areas Act 1979;

(2) that the applicant has given the requisite notice of the accompanying application to the following persons who, at the beginning of the period of twenty-one days which ended on the date of the application, were owners (note x) of the monument to which the application relates, namely (note y)

_____

_____ ; and

(3) that the applicant has taken such steps as are reasonably open to him to ascertain the names and addresses of the remainder of the persons who at the beginning of that period were owners (note x) of that monument and has been unable to do so.

Signature _____ Date _____

## D. Certificate in accordance with paragraph 2(1)(d) of Schedule 1 to the Act

It is hereby certified that the applicant is unable to issue a certificate in accordance with paragraph 2(1)(a) of Schedule 1 to the Ancient Monuments and Archaeological Areas Act 1979, but has taken such steps as are reasonably open to him to ascertain the names and addresses of the other persons who, at the beginning of the period of twenty-one days which ended on the date of the accompanying application, were owners (note x) of the monument to which the application relates and has been unable to do so.

Signature Date

## Footnotes

(note x) 'owner' means a person who is for the time being the estate owner in respect of the fee simple in the monument or is entitled to a tenancy of the monument granted or extended for a term of years certain of which not less than seven years remain unexpired.

(note y) Insert names and addresses.

# NOTICE *of Application for Scheduled Monument Consent*

ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979

*If you are the owner of the monument you do not need to fill in this form.*

*If you are making an application but you are not the owner you should complete this form and send it to the owner.*

This notice relates to the ancient monument at (note x)

Offa's Dyke: Cadwgan Hall Section, extending from River Clywedog (DE132)

An application is to be made by/on behalf of (note y)

Lightsource SPV 192 Ltd (c/o Richard Conolly, RPS Consulting Services Ltd)

to the Welsh Assembly Government for scheduled monument consent under the Ancient Monuments and Archaeological Areas Act 1979 to carry out the following work: (note z)

Cable laying by Horizontal Directional Drilling (HDD) to insert a duct and cables under the archaeological deposits and features at Offa's Dyke, associated with the proposed Plas Power Solar and Energy Storage Project (DNS/3253253).

An opportunity to make representations with respect to the application will be afforded by the Welsh Assembly Government before the application is determined.

Signature Date

## Footnotes

(note x) State the address or location of the monument, and the name (if any)

(note y) Insert name and address of applicant

(note z) Insert brief description of the proposed works

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January CMK-22-15-023

# OUTLINE SCHEDULED MONUMENT CONSENT APPLICATION – SUPPORTING INFORMATION

## Plas Power Solar and Energy Storage Project – Grid Connection

JAC25883
Outline SMC
February 2024

rpsgroup.com

## Document status

| Version | Purpose of document | Authored by | Reviewed by | Approved by | Review date |
|---|---|---|---|---|---|
| 1 | Outline SMC | RC | RC | RC | Jan 2024 |
| | | | | | |
| | | | | | |

## Approval for issue

| | |
|---|---|
| Richard Conolly | 31 January 2024 |



**Prepared by:**

**RPS**

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Associate Director - Archaeology & Heritage

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**Prepared for:**

**Lightsource bp**

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## Figures



## Appendices

# 1 INTRODUCTION

1.1 This document has been prepared by Richard Conolly MA(Hons) MCIfA of RPS on behalf of Lightsource bp (the 'applicant') to support an outline application for Scheduled Monument Consent (SMC) being submitted in connection with the planning application for the Plas Power Solar and Energy Storage Project at Plas Power Estate, Wrexham (henceforth the 'Proposed Development').

1.2 The Proposed Development is to be connected to the Legacy Substation located approximately 1.2km to the south-west of the Site, north of the B5246 Bronwylfa Road. The grid connection will be buried. Four route options have been identified, though ultimately only one route will be utilised. These options comprise the Preferred Cable Route Option and Cable Route Options 1-3 (Figure 1). Cable Route Options 1-3 largely follow the Preferred Cable Route Option, but feature slight deviations. Scheduled Monument Consent would not be required for the Preferred Cable Route Option, Cable Route Option 2 or Cable Route Option 3. However, Cable Route Option 1 crosses a Scheduled Monument: *Offa's Dyke: Cadwgan Hall Section, extending from River Clywedog to the Railway (DE132)*. Cadw have indicated that should it be necessary to use this route, SMC is likely to be required. As the Proposed Development is subject to a Development of National Significance (DNS) application, this outline application for SMC has been prepared to accompany the DNS application. In the event that consent is granted for the Proposed Development and Cable Route Option 1 is required, a more detailed SMC application would be prepared.

1.3 Based upon consultation with Cadw, this document sets out:

- The justification for the works being necessary;
- A description of the works, including information regarding the future maintenance and decommissioning phases;
- Statement of significance; and
- Measures to protect the significance of the Scheduled Monument.

1.4 The applicant is not the landowner. Information regarding the landowner will be submitted with the full SMC application and the landowner notified of the SMC application.

# 2 JUSTIFICATION

2.1 This SMC application forms a part of the DNS application for the Plas Power Solar and Energy Storage Project. The solar element of the Proposed Development is anticipated to have an export capacity of 57MWac and the BESS will have an installed capacity of 57MWac. At the end of the Proposed Developments 40-year life it will be decommissioned with the site being restored. Given the capacity of the Proposed Development, the Legacy substation is the nearest available point of connection; there are no suitable alternatives that are reasonably practicable to connect to. The Proposed Development cannot operate without the connection to the Legacy substation.

2.2 The Legacy substation is approximately 1.2km to the south-west of the site (Figure 1). Offa's Dyke runs roughly north/south between it and the site. It is approximately 240km long. Consequently, it is impossible to connect the Proposed Development to the Legacy substation without crossing the line of Offa's Dyke. It is scheduled along almost its entire length in this area. However, there are occasional breaks in the scheduled area, primarily where it is crossed by roads. The Preferred Cable Route Option, crosses the line of the dyke through one such break, along the line of a minor road (Figure 2). This would not require SMC.

2.3 Whilst only one route is necessary for the operation of the Proposed Development, this leaves the applicant wholly reliant on securing that route to connect the Proposed Development. It is therefore necessary to have a second option in case the Preferred Cable Route Option should become unavailable or impracticable. Consequently, a reserve route (Option 1) forms a part of the DNS application. As discussed above, the grid connection must cross the line of Offa's Dyke. Aside from the break used by the Preferred Cable Route Option, there are no other breaks in the scheduled sections of the dyke that are reasonably practicable as crossing points. Therefore, any alternative route must cross a scheduled area and, taking into account all known constraints, Option 1 which crosses *Offa's Dyke: Cadwgan Hall Section, extending from River Clywedog to the Railway (DE132)* has been selected (Figure 2).

2.4 Cadw advice (2019, 5) sets out the purpose of scheduling:

*The aim of scheduling is to preserve the archaeological evidence that survives within sites and monuments. This includes the physical fabric of the monument and any associated artefacts and environmental evidence, such as pollen or seeds. This means that if you want to carry out work that would physically alter a scheduled monument you will probably need to apply to us for permission known as scheduled monument consent. The scheduled monument consent process is intended to protect the monument, its setting and its features from unsympathetic works that could damage its national importance.*

2.5 As set out below, whilst Option 1 crosses the scheduled area, embedded mitigation would prevent any physical damage to the monument and hence loss of archaeological evidence and significance. There would be change in the setting during the construction period, but this would be short-term, ceasing at the end of the construction period. Option 1, with appropriate mitigation, would have no potential to damage the monument's national importance. Therefore, SMC for Option 1 would be in keeping with the stated aims of the SMC process.

# 3 DESCRIPTION OF WORKS

## Construction

3.1 It is proposed that Horizontal Directional Drilling (HDD) will be used to lay the cable under the Scheduled Monument and the archaeological remains present. Detailed design has yet to be confirmed, however, it is anticipated that broadly, the following sequence of works will be adopted:

1. Delivery of plant by low loader. Work areas to be accessed through existing gateways.
2. Establishment of two compounds, one on each side of the scheduled area. These would comprise a Launch/Entry compound and the Exit/Reception compound. These would have a temporary hard surface composed of bog mats (or similar) or compacted Type 1 road stone. The compounds and access routes would be fenced to restrict plant movement to these areas.
3. A launch pit approximately 3.0m x 3.0m x 1.0m deep would be excavated inside the site compound for the pilot bore. A separate reception pit 3.0m x 3.0m x 1.0m deep would be excavated within the exit compound. A mud pit will be excavated near the entry point to receive the arisings from the drilling.
4. HDD would be used to bore under the scheduled area at sufficient depth to avoid archaeological features, in particular the ditch. Arisings would be removed from site and disposed of appropriately (see Appendix 1 for more detailed description of the drilling process).
5. Ducting would be inserted into the bore.
6. The cable would be fed through the ducting.
7. The launch and reception pits would be capped and the hardstanding and fencing removed. The compound areas would return to agricultural use.

3.2 In the event that a drill shot is unsuccessful, all equipment would be withdrawn from the bore as far as is reasonably practicable and then the void filled with a mud slurry and allowed to solidify.

3.3 Where plant becomes stuck underground work shall cease and a method for its recovery devised. Where it is found to be irretrievable due to is location under the scheduled monument then equipment will be abandoned in the ground, the remaining bore filled with mud slurry and its location noted on the as-built drawings.

3.4 Before drilling operations can continue, a revised bore plan and Method Statements would be submitted to Cadw for acceptance.

## Operation

3.5 No access to or maintenance of the buried cable is required during the operation phase.

3.6 Given that the cable will be buried at a substantial depth and appropriately mapped and marked, there is no reasonably foreseeable circumstance in which the cable might be broken or otherwise damaged resulting in a requirement for repair. However, if it were to be necessary to replace the cable under the Scheduled Monument, it would be withdrawn from the duct via the launch and reception pits and replaced in the same way.

3.7 No excavation would be necessary in the scheduled area.

## Decommissioning

3.8 Upon decommissioning the cable would be withdrawn from the duct via the launch and reception pits by plant operating from compounds as used in construction. The duct would be left in place. No excavation would be necessary in the scheduled area.

# 4 STATEMENT OF SIGNIFICANCE

## Description

4.1 The following is Cadw's summary description and reason for designation[1]:

*Offa's Dyke is a boundary earthwork, believed to be of Early Medieval date running, with some gaps, for roughly 120km through the border area between modern Wales and England from Sedbury near Chepstow to Treuddyn in Flintshire. It is traditionally thought to have been built by the Mercian King Offa in the later 8th century, but recent excavations on a section near Chirk suggest that some sections may incorporate earlier earthworks. Whilst its exact function and original form are still the subject of debate Offa's Dyke is significant as the longest and one of the earliest surviving boundary monuments in Europe marking a nominal frontier between Saxon Mercia and Welsh kingdoms to the west. It represents one of the great engineering achievements of the pre-industrial age and the most dramatic built structure to survive from the early medieval (c410-1100) period in Britain. Offa's Dyke is scheduled in multiple different sections on both sides of the present border. These display their own local physical characteristics but all share and contribute to the overall significance of the monument and have potential to enhance our knowledge of the monument as a whole. Approximately 80km of the monument coincides with the Offa's Dyke Path National Trail, which runs from Prestatyn to Sedbury.*

*The monument is of national importance for its potential to enhance our knowledge of early medieval defensive organisation and settlement. It retains significant archaeological potential, with a strong probability of the presence of associated archaeological features and deposits. A dyke may be part of a larger cluster of monuments and their importance can be further enhanced by their group value.*

*The scheduled area comprises the remains described and the areas around them within which related evidence may be expected to survive.*

4.2 In this section the bank is substantial, averaging 2.2m in height, although there are existing breaks in the bank where it is crossed by farm tracks (Plate 1).

## Significance

4.3 The dyke's significance derives from:

- Its inherent value as the longest boundary monument and one of the earliest such monuments in Europe and the largest Early Medieval structure in Britain. Surviving elements of the Early Medieval landscape are exceptionally rare.
- It has substantial archaeological potential and hence evidential value as the dyke and associated features and structures may yield archaeological and palaeoenvironmental data that would add substantially to understanding of the settlement and economy of the area, the reorganisation or otherwise of the landscape during the Early Medieval period.
- It has illustrative value as its presence in the landscape provides a visible mark of a significant moment in the history of the UK.

[1] https://cadwpublic-api.azurewebsites.net/reports/sam/FullReport?lang=en&id=3816. Accessed 21st December 2023.

# 5 MEASURES TO PROTECT THE SIGNIFICANCE OF THE SCHEDULED MONUMENT

## Embedded Measures

5.1 Cable laying in the scheduled area would utilise HDD to insert a duct and cable under the archaeological deposits and features. This would remove any need for excavation or other disturbance of deposits and features in the scheduled area or adjacent.

5.2 The depth below the ground surface that the cable would be laid would be established through a geophysical survey undertaken in accordance with a Written Scheme of Investigation (WSI) approved by Cadw and Clwyd-Powys Archaeological Trust (CPAT). The survey methods would be agreed with Cadw but are likely to comprise electric resistivity imagery (ERI), to determine feature depth, and magnetometry, to assist in the targeting of the ERI survey and to provide context for the ERI results.

5.3 Depending on geology, the rigs typically used in these circumstances can generally bore to a maximum depth of 10m below the ground surface. Larger rigs may have a maximum depth of up to 50m. Consequently, the proposed methodology can readily achieve the depths necessary to pass under the archaeology present with a substantial margin for error.

5.4 The compounds would be set back from the scheduled area by at least 10m. They would be subjected to a geophysical survey. Depending on the results and the surfacing to be used, they would be trial trenched to establish their archaeological potential. If substantive archaeology is present this might be preserved in situ, through the use of bog mats or similar in the compound or excavated and recorded appropriately.

5.5 During drilling of the hole, the drilling fluid lubricates the drill string, removes solids from the borehole, and cools the drilling bit downhole instruments. The drilling mud has very good sealing properties and soaks into permeable and porous drilled hole walls, providing a seal. Consequently, the bore would not affect hydrology and there is no potential for indirect impact upon any waterlogged deposits that might be present.

## Additional Control Measures

5.6 No materials will be stored on or adjacent to the scheduled area; the scheduled area will be demarcated with Heras fencing or similar to prevent accidental damage. Access through the existing gateway will be maintained. Bog matting or similar will be laid to prevent compression or churning of the surface by plant using the gateway.

## Potential Residual Impacts

5.7 Following the implementation of the above mitigation measures there will be no physical impacts, either direct or indirect upon the Scheduled Monument. There is some potential for hitherto unrecorded archaeology associated with the dyke to be affected. Where it is not reasonably practicable to preserve these in situ they will be excavated and recorded appropriately, either through strip, map and record exercise or a watching brief, thereby offsetting their physical loss. All such works would be undertaken in accordance with a WSI agreed with CPAT.

5.8 The compounds and works taking place will be visible from the Scheduled Monument and in combination with it in short-range views. This will result in a short-term change in the dyke's setting that would not affect its cultural significance which primarily relates to its physical fabric. This will

cease shortly after the construction phase ends, when the areas occupied by the compounds would return to agricultural use and pre-development conditions.

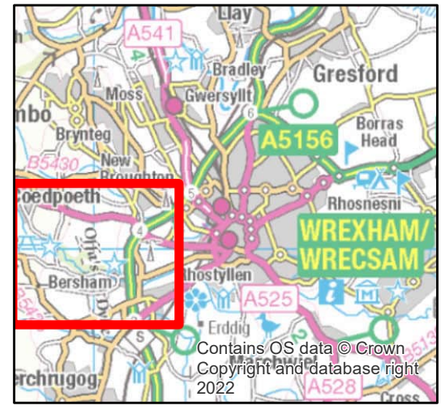
# FIGURES

RJC 14/02/2024

DE182
DE181
DE180
DE139
DE189
DE132
DE131
DE132
DE194
Legacy Substation

## Legend

- Site Boundary
- Scheduled Monuments
- Preferred Cable Route Option
- Cable Route Option 1
- Cable Route Option 2
- Cable Route Option 3




N

0 200 400 600m

Scale at A3: 1:12,500

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Figure 1

Grid Connection Options and Nearby Scheduled Monuments

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Project Ref: \\LON-WAL-02\CADNew\Gloucester Graphics\25000 - 25999\25883 - Plas Power Estate\Graphics\01 GIS\25833 Plas Power smc fig 1v2.mxd

RJC 07/02/2024

DE131

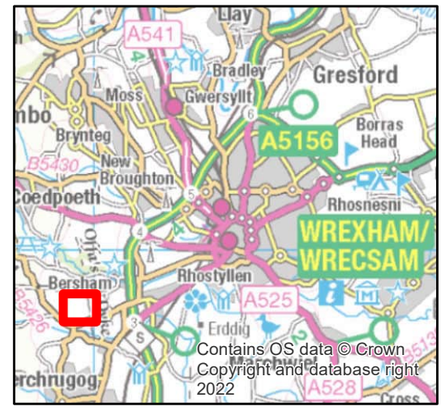
DE132

DE194

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## Legend

- Site Boundary
- Scheduled Monuments
- Preferred Cable Route Option
- Cable Route Option 1




N

0 40 80 120m

Scale at A3: 1:2,500

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Figure 2

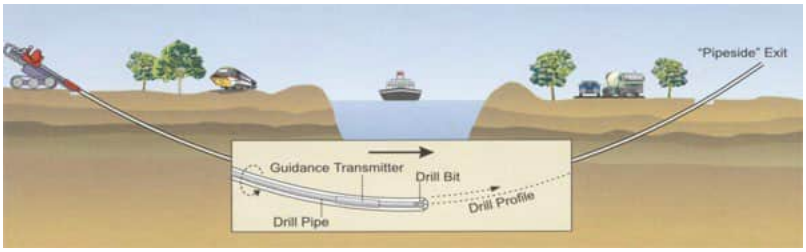
Offa's Dyke Crossing Point Options

Project Ref: \\LON-WAL-02\CADNew\Gloucester Graphics\25000 - 25999\25883 - Plas Power Estate\Graphics\01 GIS\25833 Plas Power smc fig 2.mxd

# APPENDICES

# Appendix 1

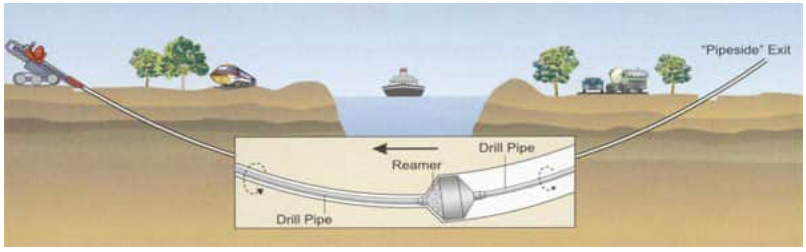
## Typical Drilling Process



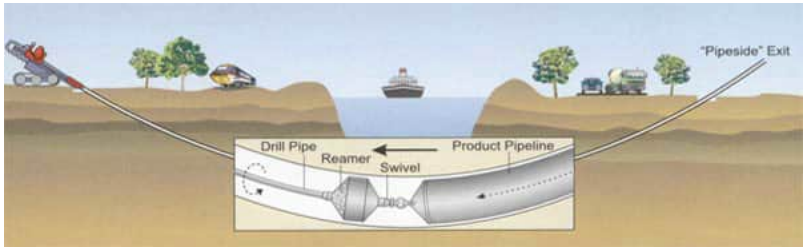

The pilot drill will proceed at an angle to be determined at the detailed design stage, steering to the appropriate radius to conform to bore profile design. Once the pilot drill bit exits at the reception location, the pilot drill head is removed and a 300mm reamer is attached to the drill string at exit and pulled back towards the rig. This commences the incremental reaming operation. The 300mm reamer is then removed at the launch location, and a 450mm reamer is attached to the drill string at exit and pulled back towards the rig. The 450mm reamer is then removed at the launch location and a 560mm reamer is attached to the drill string at exit and pulled back towards the rig.

Further passes of the 560mm reamer shall be made to ensure the bore is cleared and ready for insertion of product ducting. The number of passes with the 560mm reamer will be dependent upon ground conditions to ensure that the hole is clear of any large objects and that the drilling fluid in the bore is well mixed. Throughout the reaming process, drilling fluid shall be pumped under pressure through the drill string to the reamer.

This prepares the bore hole for the PE100 SDR11 product pipe to be installed.




Once the driller is satisfied that the bore is clear and ready for the product pipe a pulling head is connected to the drill string behind the 560mm reamer via an approved shackle and swivel of suitable strength to prevent the product pipe from rotating during the pullback of the drill string towards the drill rig. During the pipe installation process, drilling fluid shall be pumped under pressure through the drill string to the reamer.




The length of pipe shall be greater than the length of the drilled hole to allow for subsequent connections.

The electric cable duct will be welded and will positioned at the receive pit and then pulled back towards the launch area through the bore by the drill rig.

# PLATES

**Plate 1: Offa's Dyke viewed from north-east of Cable Route Option 1, showing existing gateway.**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