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Morlais Project

Terrestrial Ecology Assessment Update

Applicant: Menter Môn Morlais Limited

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Author: RHDHV

Royal HaskoningDHV
Enhancing Society Together

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Updated assessments for terrestrial ecology (excluding chough) in response to comments made on the Environmental Statement by NRW and RSPB – version 04

1 Introduction

This document presents an update to the Environmental Statement (ES) impact assessment for terrestrial ecology that has been undertaken following design refinement by Menter Môn and in response to comments raised by Natural Resources Wales (NRW) and Royal Society for the Protection of Birds (RSPB) following the submission of the Morlais Project ES (Document Reference PB5034-ES) and the Information to Support Habitats Regulations Assessment (HRA) (hereafter referred to as the HRA) (Document MOR/RHDHV/DOC/0067). This document covers an update to selected elements of the ES only; namely those to which NRW and RSPB has raised specific queries following the submission of the Morlais Project ES. In particular, these relate to potential impacts upon to the Glannau Ynys Gybi / Holy Island Coast Site of Special Scientific Interest (SSSI) / Special Protection Area (SPA) / Special Area of Conservation (SAC).

A meeting was held with NRW on the 13th December 2019 to discuss the construction and operational phase impacts to the Glannau Ynys Gybi / Holy Island Coast Site of Special Scientific Interest (SSSI) / Special Protection Area (SPA) / Special Area of Conservation (SAC) and grassland habitat during the cable installation works for the landfall of the Morlais export cables. A further meeting was held on the 28th February 2020 to discuss the potential impacts in further detail, following changes to the project description as part of the mitigation strategy. Three historic drafts of this document (circulated to NRW on 25 February 2020 (Version 01), 27 March 2020 (Version 02) and 18 September 2020 (version 03) respectively) have been made as part of these on-going discussions, along with a cliff habitat design refinement note (Document MOR-RHDHV-DOC-0136) – the conclusions of which have been incorporated into this document.

This document reflects updates made in response to these meetings and responses from NRW and supersedes the submissions outlined above.

This document should be read in conjunction with the following Drawings, which can be viewed in Appendix A:

- **Drawing 1**: 122938-BVL-Z0-00-DR-C-00600.P02-S2 (Landfall Trench Cable Option – Cliff Face Attachment); and
- **Drawing 2**: 122938-BVL-Z0-00-DR-Z-00003_P04 (Landfall Trench Cable Option – Cliff Face Attachment) (including SAC);

and in relation to the following Figures, provided within the text:

- **Figure 1:** Proposed microsited cable route.; and
- **Figure 2:** Location of proposed drawpits in relation to Annex I habitats

Further details on the project and ecology survey and assessment works undertaken to date, including habitat maps, is provided in Chapter 19 Onshore Ecology of the ES. The information contained within this document provides further detail and an update on the methods which will be employed during the construction, maintenance and decommissioning activities of the Project and the potential impacts which may occur during each of these phases of development.

The present document considers the potential impacts to the terrestrial ecology receptors assessed in the ES and HRA assessment and does not consider impacts to chough, which are considered separately (provided in Document MOR/RHDHV/DOC/0120).

A series of documents submitted as part of the TWAO application are referred to and are relevant to this document as they contain important mitigation and emergency response plans in relation to the construction and operation of the project. The two most relevant are:

- CoCP – Code of Construction Practice: Document MOR/RHDHV/DOC/0076.
- PPMP – Pollution Prevention and Management Plan: Document MOR/RHDHV/DOC/0077.

1.1 Definition of terminology

The Onshore Development Area was defined and presented in the ES as the area within which landfall, landfall substation, cable routing, onshore substation and all associated activities would be located.

The Project refers to the proposed Morlais Demonstration Zone and associated infrastructure.

2 Baseline Environment

Holy Island has cliffs of hard rock and also supports important examples of coastal cliff heathland vegetation. Extensive areas of heathland are present in the western part of the island, these occur primarily within the Glannau Ynys Gybi / Holy Island Coast SSSI/SAC and Tre Wilmot SSSI.

Beddmanarch-Cymyran SSSI is located at the east end of the Onshore Development Area.

Small areas of coastal heath occur on the various small headlands between South Stack and Trearddur Bay, in amongst areas of maritime grassland. These areas of heathland are dominated by heather *Calluna vulgaris* and western gorse *Ulex gallii* with occasional cross-leaved heath *Erica tetralix*, bilberry *Vaccinium myrtillus*, purple moor-grass, spring squill, and deer grass *Trichophorum cespitosum*.

2.1 Glannau Ynys Gybi / Holy Island Coast SPA

The Glannau Ynys Gybi / Holy Island Coast SPA lies within the footprint of the Onshore Development Area and is characterised as sea cliffs with cliff top grassland, offshore stacks and islets and maritime heath.

The SPA supports a resident, breeding population of chough *Pyrrhocorax pyrrhocorax*, which depends on the diverse mix of habitats and their low intensity agricultural management. Qualifying species are as follows:

- Chough *P. pyrrhocorax*, 18 pairs representing at least 5.3% of the breeding population and at least 2.6% of the wintering population in Great Britain.

2.2 Glannau Ynys Gybi / Holy Island Coast SAC

Glannau Ynys Gybi / Holy Island Coast SAC lies within the footprint of the Onshore Development Area. Annex I habitats that are a primary reason for selection of this site are as follows:

- Vegetated sea cliffs of the Atlantic (and Baltic) Coasts: maritime heath with spotted rock rose *Tuberaria guttata* and extensive cliff-crevice and grassland communities; and

- European dry heaths: the most important site in North Wales for maritime dry heaths. The main NVC types are H7 *Calluna vulgaris – Scilla verna* heath and H8 *Calluna vulgaris – Ulex gallii* heath Small areas of wet heath; grassland, heath, bracken and bramble scrub zonation. The heath is an important locus for spotted rock-rose *Tuberaria guttata*.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site are:

- Northern Atlantic wet heaths with *Erica tetralix*.

RSPB have requested during consultation (Project Meeting Minutes, RSPB South Stack Reserve, 24/01/2018) that the Project avoids impact to the heath habitat entirely due to its importance for breeding / foraging chough.

Following the site selection process to define the working footprint of the Project, areas of wet or dry heath have not been recorded during the Extended Phase 1 Habitat Survey (EP1HS) within the Onshore Development Area and therefore it is concluded that these habitat types are absent from the locations where the landfall activities will be undertaken. As such, wet and dry heath habitat is not considered further within this document and there is no change to the assessment presented in the ES for these habitats.

2.3 Glannau Ynys Gybi / Holy Island Coast SSSI

Glannau Ynys Gybi / Holy Island Coast SSSI is within the footprint of the Onshore Development Area. This SSSI is designated for heathland, maritime grassland, coastal cliffs and ledges, a variety of vascular plants (heathland and maritime species), birds (seabirds, peregrine, chough and heathland species), invertebrates and geology. Key habitats (i.e. heathland, maritime grassland, coastal cliffs and ledges, a variety of vascular plants) of the SSSI are also designated within the SAC and the designations are considered together. Impacts relating to birds are considered separately and not included in this document (to be provided in note PB5034-RHD-ZZ-NT-Z-1001).

2.4 Tre Wilmot SSSI

Tre Wilmot SSSI is located at least 356m from the footprint of the Onshore Development Area and is designated for lowland heath and rocky ridges with intervening depressions with a range of heathland vegetation communities, including wet heath and peatland communities, and small open water areas. There is no change to the assessment conclusions of no significant impacts presented within the ES for this site and therefore it is not considered further within this document.

2.5 Beddmanarch-Cymyran SSSI

Beddmanarch-Cymyran SSSI is located at least 105m from the Onshore Development Area at the eastern end of the Onshore Development Area and is designated for supporting a variety of coastal habitats including sandbank, mudflat, saltmarsh, dune heath. It is also important for overwintering and breeding birds and saltmarsh plant species and eel grass. There is no change to the assessment of no significance impacts presented within the ES to this site and therefore it is not considered further within this document.

3 Key habitats in the vicinity of cable landfall:

3.1 Maritime cliff and slope

The sea cliffs around South Stack and the Range in the western part of Holy Island support a diverse vegetation community including thrift *Armeria maritima*, primrose, sea beat, sea squill, common scurvy grass, bladder campion, kidney vetch *Anthyllis vulneraria*, buck's-horn plantain *Plantago coronopus*, western gorse, and blackthorn *Prunus spinosa* scrub.

A number of nationally rare plant species are known to occur on these cliffs (NRW, 2018), as described in the Glannau Ynys Gybi / Holy Island Coast SSSI citation, including South Stack fleawort *Tephroseris integrifolia sp. maritima*, spotted rock rose *Tuberaria guttata* and rock sea lavender *Limonium britannicum sp. celticum* and also various bryophytes and ferns. Exposed rock is frequent on the cliffs. Where this habitat falls within the boundary of the SAC at the top of the cliffs, it is considered part of the vegetation sea cliffs of the Atlantic (and Baltic) Coasts Annex I habitat which contributes to the designation of the site.

3.1.1 Results of the botanical survey

In response to comments raised in the discussions with NRW, a National Vegetation Classification (NVC) botanical survey has been undertaken in June 2020 (Document MOR-BSG-DOC-0001) on the vegetated sea cliffs using drone and rope-access to ascertain the presence and distribution of rare or notable vegetation species and Annex I habitat communities under the 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts designation.

NRW requested the presence or absence of four rare species be established. None of these were found to be present. Two species identified on the cliff listed within the notified assemblage of the SSSI were recorded in thin exposed soil and rock exposures.

The survey results also identified the following communities which are all listed on the Annex I designation:

- MC1 *Crithmum maritimum*-Spergularia rupicola maritime rock-crevice community;
- MC1b *Inula crithmoides* sub-community;
- MC5 *Armeria maritima-Cerastium diffusum* ssp. *diffusum maritime* therophyte community; and
- MC8 *Festuca rubra-Armeria maritima* maritime grassland community.

MC1 and MC1b were recorded on thinner and eroding soils and include the SSSI listed species. MC5 and MC8 was recorded on denser and more established vegetation. The top of the cliff was recorded as W22 *Prunus spinosa-Rubus fruticosus* community – a scrub habitat which is not listed on the Annex I designation, while the grassland above was recorded as species-rich neutral grassland subject to minimal improvement, and which does not show any conclusive affinity with any grassland types which would be included within the Annex I vegetated sea cliffs of the Atlantic and Baltic coasts habitat type. The base of the cliff was found to be bare rock. Full details of the survey are provided in the survey report (Document MOR-BSG-DOC-0001).

3.2 Unimproved neutral grassland

Unimproved neutral grassland is uncommon and generally limited to small patches of maritime grassland on steeper slopes and along the top of cliffs in the west part of Holy Island (Abraham's Bosom, where landfall will take place) and at the top of the small cliffs to the south of the road between South Stack and Trearddur Bay. This unimproved grassland has the character of maritime grassland, supporting cock's-

foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus* and red fescue *Festuca rubra*, with occasional sorrel *Rumex acetosa*, bladder campion *Silene vulgaris*, spring squill *Scilla verna*, primrose *Primula vulgaris*, common scurvy grass *Cochlearia officinalis*, and wild carrot *Daucus carota*. Where this habitat falls within the boundary of the SAC, it is considered part of the vegetation sea cliffs of the Atlantic (and Baltic) Coasts Annex I habitat which contributes to the designation of the Glannau Ynys Gybi / Holy Island Coast SAC.

3.3 Improved grassland

Many of the fields are grazed and improved, supporting a high proportion of perennial rye grass *Lolium perenne* and few other species.

3.4 Poor semi-improved grassland

The low-input short-sward semi-improved pasture fields provide suitable foraging habitat for chough. Some of these fields in the western part of the Onshore Study Area are managed by the RSPB to provide habitat for chough, which are known to nest within the Holy Island Coast SPA.

3.5 Field boundaries

The field boundaries on Holy Island vary. Many are formed by mortared stone walls (particularly adjacent to wider roads) and dry-stone walls. There are traditional vegetated stone walls/earth banks (cloddiau) within the Onshore Development Area (Figure 19.5, Volume II of the Morlais ES). These occur more frequently beside minor roads and as internal field boundaries. They are mainly found in the west part of Holy Island, including the footprint of the landfall. Post and wire/rail fences, natural banks and rocky outcrops, and occasionally hedgerows also form some of the field boundaries (Figure 19.6, Volume II of the Morlais ES).

Cloddiau can support a wide variety of plant species (such as primrose, red campion, wild carrot, Alexanders, yarrow *Achillea millefolium*, foxglove *Digitalis purpurea*, scurvy grass, creeping thistle *Cirsium arvense*, wood sage *Teucrium scorodonia*, bluebell, gorse, bracken and bramble). A number of Cloddiau are located within the Onshore Development Area in the vicinity of the landfall area and will need to be crossed by the cable route.

Hedgerows within the Onshore Development Area have been assessed as being species poor and are both continuous and defunct in structure.

4 Consultation

Following the submission of the ES and HRA documents in 2019, NRW and RSPB have provided comments and feedback on the material submitted over a series of meetings and written responses since this time. In summary, the following consultation has taken place:

- A meeting was held with NRW / RSPB on the 13th December 2019 to discuss NRW / RSPB comments on the ES and HRA submission.
- A second meeting was held with NRW / RSPB on 28th February 2020 to discuss proposed updates to the ES.
- Menter Môn provided an update to the ES on 25 February 2020 (Version 01 of this document) for comment, to which NRW subsequently provided a written response.
- Menter Môn provided a second update to the ES on 26 March 2020 (Version 02 of this document) for comment, to which NRW subsequently provided a written response, to which NRW also subsequently provided a written response.

- Following completion of the Botanical Survey of Cliff Vegetation, Menter Môn provided a Cliff Micrositing Note (Document MOR-RHDHV-DOC-0136) and Botanical Survey Report (Document MOR-BSG-DOC-0001) to NRW in 03 July 2020.
- A third version of this document was completed based on the findings of the Botanical Survey Report and additional mitigation commitments made by Menter Mon.
- A third meeting was held with NRW on 9th October 2020 to discuss the updates made in version 03 of this document and comments provided by materially submitted to date by NRW on 18 September 2020.
- A fourth update to the ES (Version 04 – this document) was completed to address comments raised during the meeting on 9th October.

Table 4.1 details all the relevant comments received from NRW and RSPB outlined above as part of the ES consultation, and how they have been addressed.

Table 4.1 Consultation with NRW and RSPB

Comment Number	Comment Detail	Morlais Response
Comments from NRW on ES		
1	Section 19.5.2.1, para. 100 refers to the HRA screening of impacts on SAC habitats, but there is no indication of where SSSI features are assessed. Clarification is sought on this.	Ecological features of the SSSI overlap with the designated features of the SAC. Information relating to the SSSI is presented in Section 19.6.5
2	Table 19-16: Landfall options refer to removal of 900m³ of material for HDD or 8,800m³ for trenching. NRW Advisory seeks clarification on where this will be stored. If the trench is 10m wide x 550m long soil storage will require a very large area which has not, to our knowledge, been identified. This could have impacts on protected habitats and species such as chough.	Locations shown on Drawing 2 (Ref: 122938-BVL-Z0-00-DR-Z-00003) shows locations of stockpile areas
3	Paragraph 210 concludes that HDD will result in no impact on the Holy Island Coast SAC/SPA/SSSI. However, it is unclear whether there will be large volumes of spoil around the exit pit: if so, measures will be needed to ensure no sediment laden run-off flows down the cliff before concluding no impact is likely.	Sediment run-off is considered in Section 6.1.1 of this document
4	Paragraph 211 assesses impact on vegetated sea cliff as a percentage of the whole site, which is largely heathland. NRW Advisory considers that the assessment should be based on the percentage of the feature i.e. vegetated sea cliff. No dimensions are given for the J-tubes or colour/materials or fixing methods. NRW Advisory considers that disturbance of a 90m corridor up the vegetated sea cliff could result in long-term impacts as soil development and vegetation growth is extremely slow in these challenging conditions.	Percentages have been re-calculated and presented as a % of the area of the SAC feature Methodology updated in Section 5and assessment updated in Section 6 of this document
5	Paragraphs 212, 223 & 369 state that permanent habitat loss may occur on the cliff face. This would appear very likely if J-tubes are pinned to the cliff in shallow slots; NRW Advisory therefore suggests that this tentative statement should read "will occur". Decommissioning may cause more damage in the future and would need separate assessment. NRW Advisory seeks clarification on how much maintenance/inspection will be needed for the J-tubes as it is likely to be an extremely challenging environment to maintain anything attached to the cliffs and any known need for regular actions should be built into the assessment.	Methodology, including maintenance is updated in Section 5 and assessment updated in Section 6 of this document
6	Paragraphs 212, 223 & 369: NRW Advisory disagrees with the conclusion that there will be no impact on the Holy Island Coast SAC/SPA/SSSI site integrity. No figures have been presented showing percentage of the sea cliff feature that will be affected and presenting it as a percentage of the whole site is disingenuous. Disturbed sea cliff vegetation in exposed locations may be very slow to recover in this exposed location leading to a potential medium to long-term impact.	Percentages have been re-calculated. Assessment updated in Section 6 of this document

Comment Number	Comment Detail	Morlais Response
7	Paragraph 218 refers to cables being temporarily pinned to the cliff if HDD is not possible. However, if this is for the duration of the project, i.e. 37 years, NRW Advisory considers this to be a permanent impact (as defined in Table 5-5 of the ES, Volume I), rather than 'temporary'. The same paragraph refers to reinstatement of temporarily lost or disturbed habitat. If the same interpretation of 'temporary' is used reinstatement may not occur until after the end of the project, which NRW Advisory cannot agree with.	Assessment updated in Section 6 of this document
8	Paragraph 219: Considering that the trench is described as up to 10m wide with a 30m wide working corridor, turf storage would be expected to take up a 10m wide strip leaving just 10m of the 30m wide working corridor for vehicle movements and soil storage etc. NRW Advisory is therefore concerned as to whether the proposed turf reinstatement method would be workable. As a minimum there should be a temporary fence preventing vehicles driving on the edge of the stored turf. Turf would need watering in windy weather as well as dry.	Locations shown on Drawing 2 (Ref: 122938-BVL-Z0-00-DR-Z-00003) and methodology discussed in Section 5 Assessment updated in Section 6 of this document
9	Paragraphs 220-224: NRW Advisory considers that turf management will help regarding grassland habitats but cannot, as stated, ensure that habitat recovers quickly as other factors such as weather will influence success. Removal of turf from vegetated cliffs is likely to remove much of the soil in some areas at least, leading to difficulties in re-establishment. Also, sea cliff turf cannot be stored on the adjacent cliff vegetation.	Assessment updated in Section 6 of this document and includes for challenges of turf re-establishment
10	Paragraphs 220-224 appear to assume that loss of habitat can be compensated for elsewhere, although this is not explicitly stated. The proposed Habitat Management Plan proposals appear to be similar to other proposals that NRW Advisory has seen but given the nature of the sea cliff habitat likely to be lost it is difficult to see how new habitat could be created.	Assessment updated in Section 6 of this document. Biodiversity net gain is discussed in Section 8 of this document.
11	Paragraph 222: Materials and plant should be stored outside the designated sites' boundary. There should be no need for storage within the designated sites.	Assessment updated in Section 6 of this document and includes for no storage within the designated site
12	Paragraph 225: NRW Advisory considers the expectation that disturbed grassland can recover within one year is overly optimistic. It is likely that a number of species will still be absent then and may only recover after a considerable number of years - depending on availability of seed sources.	Assessment updated in Section 6 of this document
13	Paragraph 348 mentions a pre-construction survey of INNS and then states that an INNS management plan specific to knotweed will be produced. NRW Advisory considers that this plan should address any INNS found during the survey, not just knotweed.	Updated mitigation in Section 5 of this document to consider the known knotweed stands at the site and any INNs subsequently recorded

Comment Number	Comment Detail	Morlais Response
14	Paragraph 349: NRW Advisory recommends that the treatment of known knotweed stands in or adjacent to the development zone during the season before work commences would be good practice. Since the works involve excavation of a trench and possible dispersal of root material there is a significant risk of spreading knotweed during the construction and/or operational phase. The applicants must be made aware that it is an offence to spread knotweed and must adopt robust policies and good working practices to address this.	Updated mitigation in Section 5 of this document includes for treatment of knotweed and measures to prevent spread
15	Paragraph 357: There is no mention of the J-tubes which, if used, would presumably be removed and be part of the decommissioning plan referred to. Further clarification is sought on this.	Assessment updated in Section 6 of this document includes for decommissioning activities
16	Table 19-25: Clarification is sought over what this table is intended to explain.	This table identifies where potential interactions occur between potential impacts upon terrestrial ecology
17	Paragraph 370: NRW Advisory disagrees that habitat loss will be temporary: some at least will be >37 years which we would consider long term and possibly permanent.	Assessment updated in Section 6 of this document
18	Paragraph 371: NRW Advisory disagrees with this conclusion because it is based on the total area of the designated site, not the area of the designated habitat affected.	Assessment updated in Section 6 of this document including updated percentages based on the feature
19	The application makes reference that an Environmental Clerk of Works will be employed. Details of this person, along with their qualifications, licencing and contact details should be forwarded to NRW as early as possible. NRW Advisory would expect this person to be the main point of contact for all ecological matters during this work.	Mitigation updated in Section 7.1 of this document includes for EcoW details to be sent to NRW
20	NRW Advisory considers that pre-construction surveys to be carried out for protected/invasive species should inform the micro-siting of the onshore cable route to avoid any sensitive species.	Mitigation updated in Section 7.1 of this document includes for pre-construction surveys to inform micrositing
21	Although there is a preference expressed for Horizontal Directional Drilling (HDD) there is relatively little information provided about the alternative trenching method and what there is, is inconsistent. The shadow HRA (para. 997) refers to shallow slots down the cliff with cables pinned into them, but this refers to J-tubes or split ducts. Between the different documents it is unclear what is the preferred option and NRW Advisory has found no information about how wide the J-tubes are or whether they will be "pinned" to the cliff. If extensive drilling is required then consideration should be given to noise, dust and bird impacts. Given the lack of clarity as to what is proposed it is difficult to assess impacts on the Holy Island Coast SAC. NRW Advisory seeks clarification on how shallow slots would be cut into the cliff and how this would be done without major permanent damage to the SAC feature.	Methodology updated in Section 5 and assessment updated in Section 6 of this document to provide greater clarity

Comment Number	Comment Detail	Morlais Response
22	NRW Advisory disagrees with the conclusions regarding the impact on the Holy Island Coast SAC because calculations of the potential impact on the SAC are based on the percentage of the whole SAC area rather than the area covered by the designated feature i.e. vegetated sea cliff.	Assessment updated in Section 6 of this document including updating the percentages based on the feature
23	NRW Advisory disagrees that habitat loss associated with the worst-case open trenching method (if required) would be temporary; we consider that some at least will last for longer than the 37-year operational period and hence could be considered permanent (as defined in Table 5-5 of the ES, Volume I).	Assessment updated in Section 6 of this document
24	NRW Advisory also has significant concerns about the suggested ease of reinstatement of disturbed vegetation, including vegetated sea cliff habitat, in such a challenging environment.	Assessment updated in Section 6 of this document including for challenges associated with reinstatement of habitat
25	Paragraph 993 states that entry and exit pits will be set back 10m from sensitive coastal habitats. NRW Advisory considers that 10m is not a very large buffer between major works (transition pits are stated to be 15x85m x 1.5m deep) and sensitive habitats - it would be preferable to have a greater buffer where space permits.	Methodology updated in Section 5 of this document and transition pits will be minimum 220m back from the cliff. The nearest stockpile area will be 19.5m away
26	Paragraphs 995, 996 & 1001: NRW Advisory disagrees with the conclusion that there will be no impact on SAC site integrity. No figures have been presented showing percentage of the sea cliff feature that will be affected and presenting it as a percentage of the whole SAC gives an inaccurate picture of the extent of impact on this habitat. Disturbed sea cliff vegetation in exposed locations may be very slow to recover in this exposed location leading to a potential medium to long-term impact.	Assessment and percentages updated in Section 6 of this document
27	Paragraph 997: It should be stated here that not only will materials and equipment be stored within the construction footprint, but they will be stored outside the designated site boundary.	Methodology updated in Section 5 of this document to include for no storage in the designated site boundary
28	We advise that further work to reduce the impact on hedgerow and cloddiau due to their removal is made - possibly using HDD at these locations. NRW would expect that if the removal of any hedgerow or cloddiau cannot be avoided, a licenced ecologist or Environmental Clerk of Works (ECoW) should be on site to provide the necessary expertise. The qualifications, licencing and contact details for this person should be forwarded to NRW as early as possible. NRW would expect this person to be the main point of contact for all ecological matters during this work.	Mitigation updated in Section 7.1 of this document to use trenchless crossings for cloddiau and any sensitive / important hedgerows
29	We would question whether the level of permanent lighting at the substations (110 Lux) is low enough.	Mitigation updated in Section 7.1 of this document to include guidance for lighting

Comment Number	Comment Detail	Morlais Response
30	Pre-construction surveys to be carried out for protected/invasive species should inform the micro-siting of the onshore cable route to avoid any sensitive species.	Mitigation updated in Section 7.1 of this document to include pre construction surveys
Comments on ES from RSPB		
1	Based on the information provided, it is not clear on the extent of impact, in terms of direct permanent or temporary loss or fragmentation, on SSSI and SAC habitat features and land outwith the designated sites. This is dependent on whether horizontal direct drilling (HDD) is possible: a decision the applicant has not yet made and therefore is not able to provide clarity on in its ES and HRA documentation. If HDD is not possible and trenching is adopted, the impact on designated site habitats is not clear, including the extent and permanence of any habitat loss.	Methodology updated in Section 5 and assessment updated in Section 6 of this document
2	Based on our analysis below, we do not consider the mitigation measures proposed meet the legal requirements of ruling out an adverse effect on site integrity beyond reasonable scientific doubt, as they leave too many issues to be resolved post-consent, not least the choice of technology to lay the cable. As the applicant notes, this is critical to the question of whether or not there will be impacts that need to be avoided through mitigation measures. Such an important issue cannot be left to the post-consent period as the competent authority would not have been able to rule out an adverse effect on integrity (see section 2 above).	Methodology updated in Section 5and assessment updated in Section 6 of this document
3	If adverse effects cannot be avoided, then the competent authority will need to consider the strict derogation tests under the Habitats Regulations (see section 2 above). Any reliance on the derogation tests will require the requisite information on alternative solutions, imperative reasons of overriding public interest and compensatory measures to be provided such that the competent authority is satisfied the tests are met. At this stage, the relevant information is not available. Mitigation measures (dependent on the adopted cable landfall working method) are not clearly presented and are reliant on further post-consent discussions with NRW and IOACC prior to construction. The applicant proposes that adopted mitigation measures will be captured in an Ecological Action Plan (EAP) which will be subject to review by NRW and IOACC prior to construction. For the reasons given above, we consider this would conflict with the requirements of the Habitats Regulations.	See Section 9 of this note
4	The ES and HRA appear to be confused over the definitions of mitigation and compensation in the context of the Habitats Regulations. Mitigation measures are those designed to avoid or reduce adverse effects, in this case on protected areas including European sites. Compensation measures are those designed to offset residual adverse effects. In the case of residual adverse effects on European sites, they can only be considered once the competent authority is satisfied there are no less damaging alternative solutions to the proposed scheme and that any damage is justified for imperative reasons of overriding public interest.	See Section 9 of this note

Comment Number	Comment Detail	Morlais Response
5	The RSPB considers there is insufficient information provided to fully assess the potential impacts of the cable landfall on protected habitats. The application should include further details on the extent and permanence of habitat loss and fully assess the potential impacts on protected habitats. The mitigation hierarchy should be applied. As set out in section 2 above, for mitigation to be relied upon to rule out an adverse effect on integrity, the competent authority must be certain the measures will make an effective contribution to avoid harm i.e. it is beyond reasonable scientific doubt. At present, the lack of detail on the technology to be used, combined with a lack of detailed analysis of the likely success of habitat restoration should the cable be trenched, means the competent authority cannot rely on the proposed mitigation to rule out an adverse effect.	Methodology updated in Section 5and assessment updated in Section 6 of this document
6	In addition, any mitigation or compensation measures should be clearly presented, agreed and legally binding. The details of the compensatory habitat including agreements for securing the land, the habitat creation, management and monitoring and funding throughout the project lifetime need to be legally secured in the TWAO and HRA consent and must be evidence based to achieve functionality of habitat lost before the damage occurs. Should compensation be necessary, there is wide acknowledgement that compensation ratio should generally be well above the intended 1:1 ratio referred to in para 224 of ES Chapter 19. (Commission Notice 2018, "Managing Natura 2000 sites; The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" para 3.7.13 Extent of Compensation.)	See Section 9 of this note
7	Pre-construction checks for barn owl should also include mature trees.	Mitigation updated in Section 7.1 of this document
Comment from IoACC on ES		
1	The Council therefore requests that the Promoter identifies appropriate enhancement measures and that these are secured in the Ecological Action Plan (EAP). The Council would therefore suggest that the EAP is amended to be a 'Mitigation, Enhancement and Management Plan' to reflect its scope.	Biodiversity Net gain is discussed in Section 8
Comments from NRW on first draft of ecology note MOR-RHDHV-DOC-0110, provided 19/03/2020		
1	A satellite compound is shown on Drawing 1 close to the cliff. We would advise that anything in this compound be made storm-proof. In recent storms a Portaloo blew over on a nearby RSPB construction site. Any incidents in the satellite compound are very close to SAC cliff vegetation and could therefore have serious impacts.	All compounds will be established in accordance with the level of exposure to the environment and the anticipated weather conditions. All compounds are to be secured via perimeter fencing which will be appropriate to the prevailing conditions (e.g. storm proofing) (See Section 5).

Comment Number	Comment Detail	Morlais Response
2	Drawing 2: Concrete apron at toe of cliff – up to Highest Astronomical Tide. There is a need to assess whether any qualifying SSSI features are present in this area: rockpools, caves and overhangs under boulders	These features do not appear on the citation for the SSSI https://naturalresources.wales/media/656113/SSSI_0963_Citation_EN001c75d.pdf
3	Drawing 2 shows the wrong SSSI boundary at the north-west end of the area where cables come ashore. It should follow mean low water but at c SH215815 the low water mark disappears and only the high water boundary is left.	Drawing 2 has been amended to better define the SAC boundary
4	The areas shown for stockpiles still seem quite small relative to the volumes of material to be stored, even allowing for opening trenches in short sections. Turf storage usually requires a lot of space.	For the construction phase of the project, a detailed Materials Management Plan will be developed by the contractor and submitted for acceptance by the client. All construction works will be programmed and undertaken to meet any planning and environmental constraints that are imposed on the works. It is however anticipated that the works will be phased to minimise environmental impact and disruption to local receptors. Construction of the works will be phased to suit available land take (e.g. stockpile and laydown areas) which will accommodate the temporary storage of turf as required. (See Section 5).
5	Para. 2.4: Tre Wilmot appears to be over 700m from the nearest works, yet this paragraph says at least 36m. Is there additional work of which we are unaware which isn't shown on the Drawing? Assuming the map is correct the conclusion in this paragraph is correct, even if the presented facts are wrong.	This has been re-calculated
6	Para. 5.2.1: The stockpile will be a minimum of 19.5m back from the cliff edge; this seems extremely precise, suggesting that space may be very tight – any sediment runoff prevention measures should be within the stockpile area, not even closer to the cliff vegetation.	No detailed topographical survey of the site has been undertaken, the 19.5m is an estimated scaled distance based on OS mapping. It has been provided for guidance and information only. Should environmental limitations dictate that the boundary is to be moved further from the sensitive

Comment Number	Comment Detail	Morlais Response
		habitat then this will become a constraint within which the contractor will need to work. As with all embankments, due consideration will be given to pluvial runoff and suitable protection measures put in place. Any surface water drainage discharge will be in agreement with the landowner or governing authority. The type of and extent of protection provided will be in accordance with usual construction practises and standards. (See Section 5).
7	It is essential that the existing vegetation in the location of Options A, B and C is surveyed to determine a baseline. NRW suggest a Phase II National Vegetation Classification (NVC) Survey (by NRW approved contractors with relevant qualifications and experience in surveying vertical cliff face vegetation). The NVC survey should take extend at least 20m from the cliff top inland and should finish at break of slope on the seaward side. Fixed point photographs should be used as part of the survey procedure.	Included within survey methodology. Options B and C were discounted prior to application due to significant areas of fractured rockface (B) and access restrictions for construction machinery / proximity to only public right of way to beach (C). Both Options B and C would also require impacting a larger section of cliff and vegetation than Option A. A is the most stable area for pinning the cables to.
8	There are numerous references to cliff survey, including suggestions that a drone may be used. A roped-access botanical survey by a suitably-qualified botanist will also be needed as we do not believe that a drone will give adequate resolution to identify small specimens of rare plants. This should also include photography of the cliff face to give an idea of density of the plant growth. Our final assessment of the impacts of this proposal will have to be done after the cliff vegetation survey as we will have insufficient information to comment prior to that.	Included within survey methodology (See Section 5).
9	Para. 5.2.1, top of page 14: this refers to excavation of the trench with an excavator with “breaker” taking c. 1 month. The noise of this should be included in the chough SPA assessments together with the noise of drilling all the anchor pins for the J-tubes. We are concerned that this has been overlooked so far.	This will be included within the chough report MOR/RHDHV/DOC/0120
10	An assessment of potential impacts on cliff vegetation from the dust from drilling will be required.	The scale and difficulty of the work favours using lightweight drilling equipment that adopts air as the flushing medium. It will likely be percussive drilling methods that are used with air flush, which will

Comment Number	Comment Detail	Morlais Response
		produce dust. Although means of extracting or collecting dust are available this is normally associated with larger and not portable equipment. The larger equipment also tends to produce more dust. Percussive drilling will not be detrimental to the cliff face and should produce a neat round hole. It will probably produce dust and cuttings some of which may be blown away whilst some may fall by gravity rather like sand. It might be possible to implement some form of dust extraction arrangement, although this is likely to depend on the contractor carrying out the drilling. (See Section 5).
11	If any lubricant is required for the drilling then impacts of this must also be assessed.	The other main options for drilling fluid are water or air mist. Water would run down the face which is probably far less desirable than dust. Air mist introduces some water into the air to dampen the dust down but may have less benefit in this situation. Any other drilling fluids, such as bentonite or foam for example are less likely to be acceptable for the sea cliff environment. However, it is preferred that percussive drilling is adopted. (See Section 5).
12	There is no description about the nature of the pins but we suggest that they should be as durable as possible to minimise maintenance requirements and non-toxic to plants since there could be run-off from the pins downslope.	The items mentioned are referring to rock bolts, which are typically made of high yield steel although these could potentially be provided as stainless steel (but this would incur significant additional cost). It is expected that required maintenance would be minimal and further corrosion protection could be offered by wrapping the bolts, however this is expected to be low risk. (See Section 5).

Comment Number	Comment Detail	Morlais Response
13	Neutral grassland at the top of the cliff was mapped as heathland by CCW's phase 1 surveyors in the past. It may be a heath/grassland mosaic and, if so, restoration to heath rather than grassland would be preferred.	Following the Botanical Survey of Cliff Vegetation, NRW will be consulted to agree the habitats that will be restored at the cliff top. (See Section 6)
14	Para. 5.2.3 does not mention what will happen to the concrete mattress at sea level during decommissioning.	The decommissioning method is most likely to be a reverse of the installation method and include a mix of carefully managed work from the foreshore, from inshore vessels and by divers. The sea mattress will be inspected to assess structural integrity at the beginning of decommissioning and the method details adapted based on their condition, for example, if a portion was considered more, or less, likely to break-up upon removal. (See Section 5).
15	Any replanting should comprise species suitable to the area, particularly near the boundary of the SAC.	Any replanting will comprise species suitable to the area, particularly near the boundary of the SAC. (See Section 6)
16	Storage of soil: It is not only important to keep topsoil and subsoil separate, topsoil from unimproved or semi-improved areas should be separate from improved topsoil.	Topsoil from unimproved or semi-improved areas will be kept separate from improved topsoil. (See Section 5).
17	Para. 6.2.2: Seeds should be collected in late summer. In some areas it may be preferable to reseed using material "Rytecced" from local heathland	Reseeding will be agreed in advance with NRW (See Section 6)
18	Para. 6.3.2, Mitigation: Under the secondary option, i.e. trenching, beyond the measures already made to avoid and minimise direct impacts upon the SAC/SSSI features through micro-siting, reduction of footprint and adaptation of methods to be used during construction, no further mitigation is considered to be successful upon the sea cliff habitat due to ongoing disturbance through 5 yearly maintenance activities. Please also clarify the purpose of the highlighted section.	This section states that mitigation has already been implemented, in the form of micro-siting, reduction of footprint and adaptation of methodology. A potential Biodiversity Net Gain Initiative is discussed under residual impact and in Section 8.
19	We would seek clarity over the reasons why Option A has been selected over Options B and C, as from Figure 1 it appears that a larger area of vegetated vertical sea cliff would be affected compared to Option C and to a lesser extent Option B. We would value seeing the process and reasons as to why Options B and C have been ruled out.	The project engineers (Black & Veatch) determined that Option A has the greatest stability for allowing the engineering of pinning the cables to cliff.

Comment Number	Comment Detail	Morlais Response
		Options B and C were discounted prior to application due to significant areas of fractured rockface (B) and access restrictions for construction machinery / proximity to only public right of way to beach (C). Both Options B and C would also require impacting a larger section of cliff and vegetation than Option A. A is the most stable area for pinning the cables to.
20	It is difficult to anticipate what the effects of the J- tubes 400mm from the cliff will be. During installation we would expect almost all vegetation within the working zone to be damaged, but roots may persist and may regrow. We will have a better idea about how fragile the vegetation is after the survey.	Assessment assumes worst case of all being removed for the life of the project (>40yrs), although the methodology proposed has been designed to minimise loss of vegetation if at all possible. (See Sections 5 and 6).
21	During operation there will be a shading effect and possibly sheltering effect. This could lead to the growth of different plants, not normally part of the vegetated sea cliff community. Whatever the effects, they will last for the duration of the project i.e. 37 years.	This is included within the assessment (See Section 6).
22	We cannot accept the assertion that damaging a 7m wide strip of cliff is “de minimis”. If an area of any SSSI of these dimensions were deliberately damaged without consent, we would consider it as a potential offence. We therefore advise that the final assessment of the impact of the proposals should be changed.	We do not consider the proposed project to cause a significantly adverse impact on the SSSI or an adverse effect on the integrity (AEOI) on the basis it is a small-scale impact with no change to the form and function of the designated features of the SAC. This is further discussed in Section 6 and 0.
23	We are currently unable to determine if there would be any permanent loss of Vegetated Sea Cliff (Annex I habitat) as a result of trenching at landfall. The construction methodology outlining the cliff works does not clearly outline how the siting of the cables via J-tubes will interact with the existing vertical cliff vegetation and whether or not after the installation the Vegetated Sea Cliff (Annex I habitat) would be permanently damaged or destroyed from: 1. shading 2. a reduced influence of salt-spray on vegetation 3. the loss of epithilic lichens 4. the loss of disturbance by sea birds (essential for ephemeral sea cliff plant species.	We have assessed on the worst case that the vegetation will be impacted within the entire footprint (7m wide cable chute and 2m either side) for the duration of the project but is anticipated to recover over time following decommissioning of the cables and associated infrastructure on the cliffs. These points have been clarified in Section 6.3.2.

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Comments from NRW on second draft of ecology note MOR-RHDHV-DOC-0110, provided May 2020		
1	A.50 We accept that the updated proposals are a significant improvement on the original 9m wide working zone, but they still involve loss of SAC habitat. 0.046% is a small percentage, but we advise that the loss of any SAC habitat is significant, especially such a fragile and spatially-restricted one. The Terrestrial Ecology Assessment Update has focused on the percentage loss of habitat without considering exactly what is being lost, as well as the nature of the designated features in this part of the site and how their loss might affect the rest of the site. Until an adequate vegetation survey of this habitat has been completed it is not possible to draw any informed conclusions about the scale or severity of impacts, but in general we advise that any development should pursue the aim of no net loss of SAC habitat.	Further information has been submitted to NRW in July 2020 providing the results of the Botanical Survey of Cliff Vegetation and information on additional mitigation to reduce the impact on the SAC/ SSSI and designated features further. The Botanical Survey of Cliff Vegetation report has been revised based on feedback from NRW and is provided with this submission (Document MOR-BSG-DOC-0001)
2	A.51 There is insufficient information about what habitat would be lost beneath the J-tubes and their brackets for us to be able to agree with the assertion in Table 8.1 of the Terrestrial Ecology Assessment Update that impacts would be minor adverse and negligible. We consider that any loss of SAC habitat would be at least a moderate adverse impact, regardless of scale or percentage of the habitat to be lost.	Further information has been submitted to NRW in July 2020 providing the results of the Botanical Survey of Cliff Vegetation and information on additional mitigation to reduce the impact on the SAC/ SSSI and designated features further. NRW responded on 31 July 2020 "*We consider that it provides a competent description of the vegetation of the cliff face given the difficulties of surveying a cliff. We note that much of the cliff is mapped as a mosaic, but this is acceptable as both the vegetation types within the mosaic are part of the vegetated seacliff SAC feature. The survey was completed at an appropriate time of year, but given the prolonged hot, dry weather conditions in May it is possible that some small annuals may have been desiccated to the point that they could not be identified. The species recorded on site are typical and representative of cliffs and clifftop vegetation in the Holy Island Coast designated site.*"

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3	A.52 There is a lack of information about the vegetation in the section of SAC which the cable would cross, should HDD not be possible. Without this information conclusions regarding scale and severity of impacts are uncertain. Pre-construction surveys are offered as a form of mitigation. However, we consider that these are a means of obtaining the information necessary to determine what the impacts of the development are likely to be, rather than mitigation. We advise that a detailed botanical survey should be carried out by a suitably-qualified botanist with ability to identify lichens as well as higher plants. The survey should cover the cliff top habitats, vertical or near-vertical cliff faces and intertidal habitats. Access should be via roped techniques, with additional information from a drone if required. The survey should extend across the whole bay to allow micro-siting of J-tubes to avoid important vegetation, inland 2m back from the cliff edge and downslope to the limit of lichen and/or vascular plant growth. The survey should not focus solely on the species listed but should record all species present and include vascular and lower plants. Vegetation should be mapped accurately on the cliff face to at least NVC subcommunity level where possible, with detailed photographs of crevice and ledge vegetation. Areas of rock where lichen communities dominate also need to be identified as does intertidal habitat. The survey should include all areas of natural and semi-natural vegetation on the clifftop as well as vegetation on the cliffs: maritime grassland and heathland in this location is an integral part of the vegetated sea cliff Annex I habitat.	Further information has been submitted to NRW in July 2020 providing the results of the Botanical Survey of Cliff Vegetation and information on additional mitigation, including micrositing to reduce the impact on the SAC/ SSSI and designated features further.
4	A.53 In order to install up to 9 rock bolts (1 per J-tube) approximately 2.2m³ of rock would have to be drilled out. This could cause significant dust with the potential to smother plants downslope/downwind of the drilling site. The applicant states that dust extraction may be possible, but that this will depend on the contractor. We do not consider this an adequate approach: if the detailed vegetation survey reveals species which could be vulnerable to dust, we would advise that such species would need to be protected during drilling works. Should percussive drilling not be possible an assessment of the impacts of lubricants would be required.	It is most likely that percussive and air drilling will be adopted for installing the rock bolts and that dust extraction measures will be in place, however this cannot be confirmed until detailed design work has been undertaken prior to construction. A Dust Management Plan (DMP), including measures for managing dust in line with the Institute of Air Quality Management (IAQM)'s Guidance on the assessment of dust from demolition and construction (IAQM, 2014), will be developed and implemented prior to construction. Details of the DMP are outlined in Section 6.1.2.
5	A.54 Dust from general onshore construction works may also be a risk, but prevailing wind will likely take this away from the cliffs and is more likely to impact heathland within the SAC. No consideration appears to have been given to this impact.	Risk of dust impacts to ecological receptors, including the SAC, were assessed to be high during earthworks, low during construction activities and medium from track out from Heavy Goods Vehicles (HGV) movements, as set out in Section 6. Mitigation measures are proposed within ES Chapter 22 Air Quality which are anticipated to reduce these impacts down to a non-significant level.

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6	A.55 Impacts of dust have therefore not been adequately assessed due to a) an apparent lack of acceptance that drilling will cause significant dust and b) a lack of knowledge of what vegetation is present on the development route; therefore, we cannot be certain of the conclusion that impacts are likely to be low. In order to address this, we suggest that dust deposition outside the boundary of the works is subject to a condition that it must not exceed a specified level considered to be a nuisance in residential areas. This could be controlled via a dust management plan.	Further information has been submitted to NRW in July 2020 providing the results of the Botanical Survey of Cliff Vegetation, which identifies the location and distribution of qualifying features of the SSSI/SAC within the area surrounding the works. The assessment presented in ES Chapter 22 Air Quality (and summarised in Section 6 below) notes that construction activities on the cliff face are dust generating activities, and that these will require construction mitigation measures to be in place to minimise the potential effects upon the SSSI/SAC. These are proposed to be captured in a DMP produced post-consent, once the contractor has been appointed and detailed construction techniques are confirmed. This document has been updated (Section 6) to provide further information as to the potential measures which could be included in the DMP, however these will be confirmed within the DMP.
7	A.56 Botanical survey should also identify the extent of *Allium ampeloprasum* alongside the road near SH217816 and the small-flowered catchfly *Silene gallica*. Cliff survey should also note any INNS - Crocosmia and Hebe species are both present to the east of the preferred route A. Any INNS present in the development zone should be killed/removed during work.	The survey scope was discussed with NRW as outlined in the survey report (Document MOR-BSG-DOC-0001). Management of invasive non-native species are discussed in Section 7.1.2.
8	A.57 No mitigation or compensation has been proposed for impacts on the sea cliff vegetation, even though they are expected to be long term. Whilst not a direct replacement, restoration of some areas of improved or semi-improved grassland along the top of the cliff could enhance the coastal ecosystem allowing the development of a more natural transitional zone between vertical cliff and more level grassland/heathland. We would welcome engagement in such discussions.	Further information has been submitted to NRW in July 2020 providing information on additional mitigation (Document MOR-RHDHV-DOC-0135). Habitat restoration of the habitat at the top of the cliff is discussed in Section 6 of this document.
9	A.58 It is agreed that if HDD is successful direct impacts on cliff vegetation will be avoided. There is however still a risk of indirect effects on both cliff and heathland vegetation through aerial deposition of dust and run-off of polluted water; these should be considered within the HRA process. The Terrestrial Ecology Assessment Update assumes that residual impacts of sediment laden run-off affecting upper parts of the cliff are negligible. However, this will depend on the results of the pre-construction vegetation survey. If any particularly rare or sensitive species could be affected potential impacts may be more serious.	The mitigation measures proposed in Section 6 of this document provides control measures for the sediment laden run-off to minimise the pathway of an impact. The measures proposed are intended to reduce the risk of pollutant release down to negligible levels, giving rise to impacts which are non-significant in EIA term (i.e. impacts of negligible magnitude on a high

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		importance receptor, giving rise to impacts of minor adverse significance). The impact assessment was initially conducted assuming that sensitive plant species could potentially be present within the cliff adjacent to the clifftop works, under a precautionary approach. The findings of the Botanical Survey of Cliff Vegetation undertaken in July 2020 show that particular rare or notable species have not been identified immediately adjacent to the clifftop works. Habitats which constitute the Annex I habitat 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts (i.e. MC1, MC5 and MC8) are present across the cliff, however these habitats are separated from the clifftop works by a strip of blackthorn-dominated scrub habitat.
10	A.59 There is a general a lack of consistency between the FEI, which makes it difficult to be certain of what is now proposed. The PDE Matrix spreadsheet and updated ES Chapter 4 Project Description have not been modified to match the Terrestrial Ecology Assessment Update. For example, the Terrestrial Ecology Assessment Update confirms that the width of vegetated seacliff affected has been reduced to 11m with the J-tubes pinned 40cm out from the cliff face (as recently agreed with the applicant), while the PDE Matrix and updated ES Chapter 4 Project Description still refer to a 90m wide zone and J-tubes laid on the surface of the cliff. In addition, these still quote the extent of the works as a percentage of the total site not a percentage of the vegetated cliff habitat. Table 4-30 of the updated ES Chapter 4 Project Description fails to mention J-tubes and pinning cables to the cliffs, referring only to transition pits on the assumption that HDD is successful. It is therefore difficult to assess impacts on designated sites with this lack of clarity and consistency. All crossreferencing documents should be amended to be consistent with the measures now proposed in the Terrestrial Ecology Assessment Update. However, if the original proposal is still considered possible, we would wish to be reconsulted on this more damaging option.	ES Chapter 4 represents the Project Description that was assessed in the ES. The information presented in the Cliff Micrositing Note (Document MOR-RHDHV-DOC-0135) and this document represents the latest project design envelope.
11	A.60 Section 9 of the Terrestrial Ecology Assessment Update and the Information to Support an HRA, regarding conservation objectives for the SAC, has not referred to the SAC management plan so should be updated with reference to this document.	The SAC Management Plan is discussed in Section 9.
12	A.61 Two of the proposed draw pits appear to be within the vegetated sea cliffs Annex 1 habitat. Although not part of the Holy Island Coast SAC it is a valuable supporting habitat without which the designated habitats would be poorer. If the pre-construction vegetation survey confirms this, we suggest that efforts should be made to relocate the pits in less valuable habitat.	As is shown in Figure 2, the draw pits situated above the cliff are located outside of the Annex I vegetated sea cliff habitat, located within the unmanaged MG1e / MG5 / MC9b grassland and W22 scrub habitat, which

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		were identified within the Botanical Survey of Cliff Vegetation as not forming part of the Annex I vegetated sea cliff habitat. In addition, there is flexibility to microsite the draw pits during detailed design to ensure that they are located outside of the Annex I habitats during construction.
14	A.63 J-tube bolts should be sufficiently durable to last for at least 4 years in this exposed location. If not, the need for bolt replacement could lead to significant increased disturbance to the cliff vegetation.	It is anticipated that the J-tubes and rock bolts will be robustly designed accounting for the exposed environment. It is therefore not expected for replacement or maintenance works to be required for well in excess of 4 years following installation (i.e. design life is well in excess of 4 years). Maintenance is discussed in Section 5.2.2.
15	A.64 The Seascape, Landscape and Visual Impact Assessment Response document refers to planting to screen J-tubes where they rise 2m above the cliff edge. This may not be compatible with the vegetated sea cliff feature of the Holy Island Coast SAC, where low-growing grasses and dwarf shrubs such as heather or herbaceous plants would be more appropriate. The pre-construction vegetation survey of this area should be completed before any plans are made regarding appropriate planting. A photomontage may help to inform the requirements for screening. See also paragraph A.78.	Noted. The pre-construction vegetation survey will inform the development of the screening proposals to be included in the Landscape Management Plan. The Landscape Management Plan will be secured by condition of the TWAO and must be approved by the Planning Authority.
16	A.65 We welcome the commitment in the Terrestrial Ecology Assessment Update to restore "agreed areas" to grassland or heathland as appropriate using locally-sourced seed/vegetation. However, we have not located a plan of these "agreed areas". Also, the subsequent section on turf management appears to propose a different method to restore damaged areas, but we presume that this would apply across the wider development site. Clarification is required on this.	Heath habitat restoration is proposed within the maritime grassland / scrub mosaic habitat where the boundary of the Onshore Development Area overlaps the SAC/SSSI. Grassland outwith the boundary of the SAC/SSSI is currently managed by mowing and will be restored using the methodology outlined in the Turf Management Plan. Further details are provided in Section 6.
17	A.66 The Terrestrial Ecology Assessment Update's reference to habitat recovery being possible assumes that there will still be a source of propagules. However, during the construction/installation phase vegetation and pockets of soil with seeds may be lost from the cliffs. If this is the case, recovery could take a considerable time. Mitigation to reduce this loss should therefore be considered as part of the Method Statement.	Works on the cliff will be undertaken by hand to minimise impacts and will be supervised by a suitably qualified ECoW. Further details are provided in Section 6 of this report.

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18	A.67 We note the Terrestrial Ecology Assessment Update's commitment to use native species of local provenance for reinstatement. We advise that a nursery is commissioned to grow this material specially for the project as local provenance stock is unlikely to be widely available.	A nursery will be commissioned and this is committed to in Section 7 of this report.
19	A.68 We note the Terrestrial Ecology Assessment Update's statement that works to undertake biodiversity net gain would be reliant on both survey and consultation with NRW and would welcome engagement in such discussions.	Menter Môn commit to undertaking Biodiversity Net Gain (BNG) as part of this project. Any discussions regarding net gain we would seek to undertake post-consent as part of the development of the Ecological Action Plan. This would include the calculation of biodiversity units using the information gathered in the Botanical Survey of Cliff Vegetation and agreeing the locations for suitable net gain with NRW and IoACC as part of the Ecological Action Plan. See Section 8.
Comments from NRW on additional information provided with the Marine Licence Application (including cliff micrositing note), provided September 2020		
1	101. If HDD is successful, we agree that impacts on the designated sites would be minimal, subject to adequate pollution control. However, if trenching and J-tubes are necessary, we cannot agree that the potential loss of 3.1ha of intertidal habitat and 0.023ha of vegetated seacliff can be considered to have no significant effect. Table 8.1 of the Terrestrial Ecology Assessment Update (MOR-RHDHV-DOC-0110, F1.0, 26/03/20) records minor adverse impacts but the loss of a strip of vegetation down the cliff together with intertidal areas is potentially damaging. Vegetated seacliffs are a scarce and fragile habitat and slow to recover from any disturbance. The intertidal habitats are a supporting feature of the other habitats and without them the whole site will be devalued. 102. It is estimated that maintenance works would be required on the J-tubes every 5 years, but this is only an estimate and a worst-case scenario could require far more frequent maintenance, and disturbance to the cliff vegetation. Based on the location, it is possible that the J-tubes will be regularly impacted by storms. In view of the available evidence therefore, we do not believe that an adverse effect on site integrity of the Holy Island Coast SAC can be ruled out for the trenching/J-tubes option.	Menter Môn's position is that, following design refinement and micrositing, and with the mitigation set out in Sections 6 and 7 in place, installation of the J-Tubes represents a small-scale impact which is recoverable in the long-term, constituting an effect which is not significant in EIA terms or which constitutes an AEOI of the SAC (see Section 6). It should be noted that the potential habitat loss in the intertidal zone is significantly less than 3.1ha. The ES assessed 7,400m^2 (0.74ha), however, with the refined cable route, the length of intertidal zone crossed is likely to be significantly shorter than the worst case scenario assessed in the ES (see Section 5.2.1). As noted in the latest version of this document, maintenance will now be conducted without interacting with the cliff.

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2	103. Section 7.1.2: we welcome the commitment to manage Japanese knotweed and any other INNS identified during the project. This should include *Oxalis articulata* which was found during the cliff survey and will spread readily from small fragments of plant material. The proposed 10m fenced buffer around INNS will not always be possible if they are found within a working zone. In this case, control methods should be included in the INNS biosecurity risk assessment and management plan and undertaken before work starts.	*Oxalis articulata* is now specifically mentioned within the mitigation set out in Section 7.1.2. Reference to eradication prior to works is also included within Section 7.1.2, it would be part of the ISMP.
3	104. The updated proposals in the Terrestrial Ecology Assessment update (MOR-RHDHVDOC-0110, F1.0, 26/03/20) and Cliff Habitat Design Refinement note (MOR-RHDHVDOC-0135, F1.0, 03/07/20) are a significant improvement on the original 90m wide working zone. The cliff vegetation survey carried out satisfactorily in May/June 2020 has shown that the proposed location for J-tubes supports high-quality vegetated cliff habitat. However, the worst-case cable-trenching scenario would still involve loss of SAC habitat (0.023% for J-tube width and working zones). Although a small percentage, we advise that the loss of any SAC habitat is significant, especially such a fragile and spatially restricted one. A recommendation has been made regarding micro-siting of J-tubes, but there will be other requirements to consider and we believe it is not possible to be certain that these recommendations can be followed and implemented. In view of this we regard 0.023% as the minimum amount of habitat that could be affected if J-tubes are installed. 105. No rare plant species were present within the proposed disturbance zone, but the habitats found are fully representative of this SAC feature. Therefore, we cannot agree with the assertion in Table 8.1 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC-0110, F1.0, 26/03/20) that impacts would be minor adverse and negligible. We consider that any loss of vegetated seacliff SAC habitat would be at least a moderate adverse impact.	As discussed above, Menter Môn's position is that, following design refinement and micrositing, and with the mitigation set out in Sections 6 and 7 in place, installation of the J-Tubes represents a small-scale impact which is recoverable in the long-term, constituting an effect which is not significant in EIA terms or which constitutes an AEOI of the SAC (see Section 6). Note that 0.046% is the maximum amount of habitat potentially affected - the micrositing is expected to give rise to effects upon 0.023% of the key areas of habitat, as approximately half of the cliff is bare rock, which does not support the key species which comprise the Annex I vegetated sea cliff habitat, however this cannot be confirmed exactly until detailed design, so 0.046% is the worst case.
4	106. The extent of *Allium ampeloprasum* alongside the road near SH217816 and the small-flowered catchfly *Silene gallica* should be identified through botanical survey.	ES Chapter 19, Section 19.6.5.13.1 sets out the mitigation for these species, which includes identification and demarcation of these species prior to construction. This would be undertaken through a botanical survey (this is now explicitly included in the drafting planning condition), and required mitigation included in the EAP. In addition, NRW's comment in the 9th October 2020 meeting that the *Silene gallica* may not be present every year and should be treated as potentially present within the EAP has been noted and Section 7.1 updated accordingly.

Comment Number	Comment Detail	Morlais Response
5	107. In order to install up to 100 rock bolts to secure the J-tubes, approximately 0.25m³ of rock would have to be drilled out. This could cause significant dust with the potential to smother plants downslope/downwind of the drilling site. The applicant states that dust extraction may be possible, but that this will depend on the contractor. We do not consider this an adequate approach; the vegetation survey showed that the cliff is well-vegetated across much of its surface i.e. supports a habitat for which the SAC is designated. This could be vulnerable to dust, and we advise that the methodology used for this work should be selected to minimise impacts on surrounding vegetation through dust or lubricants. 108. Dust from general onshore construction works may also be a risk, but prevailing wind will likely take this away from the cliffs and it is more likely to impact heathland within the SAC. No consideration appears to have been given to this impact. 109. Impacts of dust have therefore not been adequately assessed due to a) an apparent lack of acceptance that drilling will cause significant dust and b) a lack of knowledge of what vegetation is present on the development route; therefore, we cannot be certain of the conclusion that impacts are likely to be low. In order to address this, we suggest that dust deposition outside the boundary of the works is subject to a condition that it must not exceed a specified level considered to be a nuisance in residential areas. This could be controlled via a dust management plan.	Following discussions at the 9th October 2020 meeting, Menter Môn has committed to ensuring that contractors will use dust extractors when installing rock bolts on the cliff face. This is detailed in Section 6.1.2. Following discussions at the 9th October 2020 meeting, further details on the contents of the Dust Management Plan to be produced post-consent, including the proposed approach to monitoring dust during construction, and the procedure which will be in place to reduce the effects should excessive dust be generated, are detailed in Section 6.1.2. The Dust Management Plan is secured through the draft planning conditions. The ecological assessment of potential impact on sensitive habitats of the SAC / SSSI is considered within Chapter 22 Air Quality of the ES. The methodology used for this assessment follows Guidance on the assessment of dust from demolition and construction. (IAQM, 2014). This has included an assessment of the sensitivity of ecological receptors to dust impacts. Signposting to this assessment is provided in Section 6.1.2.
6	110. No mitigation or compensation has been proposed for impacts on the sea cliff vegetation, even though they are expected to be long term. There will be a loss of SAC habitat and, whilst direct replacement is not possible, compensation may be possible through restoration of some areas of improved or semi-improved grassland along the top of the cliff, which would enhance the coastal ecosystem allowing the development of a more natural transitional zone between vertical cliff and more level grassland/heathland. We would welcome engagement with the applicant in such discussions.	As noted above, Menter Môn's position is that, following design refinement and micrositing, and with the mitigation set out in Sections 6 and 7 in place, no adverse effect on the integrity of the SAC will occur and therefore compensation is not required. However, Menter Môn would like to enter into a biodiversity net gain initiative with NRW in order to ensure that the project provides an overall net gain in biodiversity. As discussed at the 9th October 2020 meeting, once NRW have reviewed version 03 of this document, Menter Môn will seek to agree the principles of the biodiversity net agreement in advance of consent, for example a

Comment Number	Comment Detail	Morlais Response
		commitment to a minimum area restored, a commitment to the types of habitat created and the timeframes which will be used. Defined areas to be enhanced will need to be defined post-consent once biodiversity units have been calculated and detailed design undertaken.
7	111. It is agreed that if HDD is successful, direct impacts on cliff vegetation will be avoided. There is however still a risk of indirect effects on both cliff and heathland vegetation through aerial deposition of dust and run-off of polluted water; these should be considered within the HRA. The Terrestrial Ecology Assessment update (MORRHDHV-DOC-0110, F1.0, 26/03/20) assumes that residual impacts of sediment laden run-off affecting upper parts of the cliff would be negligible. However, the cliff survey found that the cliff was well-vegetated and as such it is vulnerable to eutrophication or smothering by silty run-off. A further risk is that of water flowing from a point source i.e. channelled through the working zone to a single discharge point and washing soil and vegetation from upper parts of the cliff. This should be prevented by a robust pollution prevention plan, but as there is a small risk of such measures failing there is a residual low risk of moderate impacts. 112. Paragraph 210, Chapter 19 of ES Volume I (MOR/RHDHV/DOC/0100, F3.0, July 2019) concludes that HDD will result in no impact on the Holy Island Coast SAC/SPA/SSSI. However, it is unclear whether there will be large volumes of spoil generated: if so, measures will be needed to ensure no sediment-laden run-off flows down the cliff before concluding no impact is likely. Section 5 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC-0110, F1.0, 26/03/20) states that transition pits will be at least 220m back from the cliff. However, the proposed draw pits are still very close to the cliff edge. Although the Cliff Habitat Survey report (MOR/BSG/DOC/0001, F1.0, 03/07/20) shows quadrats within the unimproved grassland there are some inconsistencies in quadrat labelling between the map and the data tables, making it difficult to judge the impacts of the draw pits. The main risk associated with this work is loss of sediment and/or polluted water onto the cliff below.	The mitigation measures proposed in Section 6 provide control measures for the sediment laden run-off to minimise the pathway of an impact. The measures proposed are intended to reduce the risk of pollutant release down to negligible levels, giving rise to impacts which are non-significant in EIA term (i.e. impacts of negligible magnitude on a high importance receptor, giving rise to impacts of minor adverse significance). These measures will be captured in the PPMP, secured by planning condition. With these measures in place, the residual risk will be low. Under option 2, the draw-pits are located within neutral grassland outside the SAC boundary. The Botanical Survey identified it as a species-rich grassland showing evidence of some limited improvement, and most closely associated with NVC community MG1 (*Arrhenatherum elatius* grassland). As a worst case, it has been classified as unimproved grassland for the purposes of this document. Draw pits can be microsited.
8	113. The Terrestrial Ecology Assessment update (MOR-RHDHV-DOC-0110, F1.0, 26/03/20) states: “There are no marine (intertidal) notified features listed for the Glannau Ynys Gybi / Holy Island Coast SSSI. Glannau Ynys Gybi SSSI has other habitats/earth science features that contribute to the special interest, including rockpools, overhanging rock, gullies and under boulder communities and their associated flora and fauna. These are key components of the special interest of the site and therefore will be avoided where possible, however there is no statutory mechanism by which they are protected within the SSSI”. However, rock bags and concrete mattresses below the J-tubes would be expected to smother intertidal organisms. Although not a designated feature they are of local interest and an integral part of the designated site. Their loss through the	Noted, Section 5.2.1 has been revised .

Comment Number	Comment Detail	Morlais Response
	project may be inconsistent with the biodiversity duty in section 6 of the Environment (Wales) Act so consideration should be given to minimising impacts in this area.	
9	114. Section 5.2.1 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC0110, F1.0, 26/03/20) states that rock bolts would typically be made of high-yield steel or stainless steel, but at an increased cost. We advise that durability should be the overriding concern in order to avoid having to re-bolt the J-tubes during the life of the project in order to protect the cliff habitat from unnecessary maintenance works.	Both high yield and stainless steel are seen as providing a robust option for the rock bolts. Menter Môn is also keen to minimise the amount of maintenance required and to select an option which will minimise maintenance requirements.
10	115. The Seascape, Landscape and Visual Impact Assessment Post-application Consultation Responses document (MOR/SLR/DOC/0001, F2.0, March 2020) refers to the use of planting to screen J-tubes where they rise 2m above the cliff edge. This may not be compatible with the vegetated sea cliff feature of the Holy Island Coast SAC, where low-growing grasses and dwarf shrubs such as heather or herbaceous plants would be more appropriate along the cliff top. Consideration must be given to local vegetation types to avoid introducing inappropriate species. See also paragraph 134 below.	The pre-construction vegetation survey will inform the development of the screening proposals to be included in the Landscape Management Plan. The Landscape Management Plan will be secured by planning condition and must be approved by the Planning Authority. This is detailed in Section 7.1.
11	116. We welcome the commitment in the Terrestrial Ecology Assessment update (MORRHDHV-DOC-0110, F1.0, 26/03/20) to restore “agreed areas” to grassland or heathland as appropriate using locally sourced seed/vegetation. However, we have not located a plan of these “agreed areas”. We advise that a nursery is commissioned to grow this material especially for the project as local provenance stock is unlikely to be widely available. Also, the subsequent section on turf management appears to propose a different method to restore damaged areas, but we presume that this would apply across the wider development site. Clarification is required on this.	This has been amended to say “areas to be agreed” as was the intended meaning – i.e. to be agreed post-consent as part of the preparation of the EAP. Heath habitat restoration is proposed within the maritime grassland / scrub mosaic habitat where the boundary of the Onshore Development Area overlaps the SAC/SSSI. Grassland outwith the boundary of the SAC/SSSI is currently managed by mowing and will be restored using the methodology to be outlined in the Turf Management Plan. Further details are provided in Section 6.
12	117. The reference in the Terrestrial Ecology Assessment update to habitat recovery being possible assumes that there will still be a source of propagules. However, during the construction/installation phase, vegetation and pockets of soil with seeds may be lost from the cliffs. If this is the case, recovery could take a considerable time. Mitigation to reduce this loss should therefore be considered as part of the Method Statement.	Measures to minimise the loss of propagules of the working width will be included within the EAP. This could include netting to capture dislodged propagules during construction for replanting following the completion of construction. This is detailed in Section 6.1.2.
13	118. We note the statement in the Terrestrial Ecology Assessment update that works to undertake biodiversity net gain would be reliant on both survey and consultation with NRW and would welcome engagement in such discussions.	Agreed. See previous comment on biodiversity net gain in this table (comment 6).

Comment Number	Comment Detail	Morlais Response
14	119. Table 19-16, Chapter 19 of ES Volume I (MOR/RHDHV/DOC/0100, F3.0, July 2019) refers to removal of 900m³ of material for HDD or 8,800m³ for trenching. We previously sought clarification on where this will be stored. If the trench is 10m wide x 550m long, soil storage will require a very large area which had not, to our knowledge, been identified. This could have impacts on protected habitats and species such as chough. The Terrestrial Ecology Assessment update (MORRHDHV-DOC-0110, F1.0, 26/03/20) states that Drawing 2 (Ref: 122938-BVL-Z0-00DRZ-00003) now shows stockpile areas. However, we remain concerned that these may not be adequate unless only very small sections of trench are to be opened at any time.	The project engineers have confirmed that these areas are adequate to store all the spoil generated during construction works at the cliff top as only small sections of trench are to be opened at a time.
15	120. Paragraphs 212, 223 & 369, Chapter 19 of ES Volume I (MOR/RHDHV/DOC/0100, F3.0, July 2019) state that permanent habitat loss may occur on the cliff face. We suggest that this should read “will occur”. Decommissioning may cause more damage in the future and would need separate assessment.	This has been clarified in Section 6.1.2.
16	121. Section 6.1.2 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC0110, F1.0, 26/03/20) and the Cliff Habitat Design Refinement note (MOR-RHDHVDOC-0135, F1.0, 03/07/20) describe methods designed to reduce impacts and acknowledges that impacts will be long term, in excess of 40 years. This is an acceptable description of impacts.	Noted.
17	122. Section 6.1.2 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC0110, F1.0, 26/03/20) also refers to seeding of stockpiles of soil in order to prevent dust/run off. This is a useful technique, but any stockpiles close to the SAC/SSSI should not be seeded with any non-native seeds which could be washed or blown into the SAC/SSSI and become established. Ideally, any grass used for this purpose should be a sterile hybrid to prevent production of seed which could spread.	Seeding would not be undertaken with non-native seed, and such provisions can be included within the EAP, to be agreed post-consent.
18	123. Section 6.2.2 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC0110, F1.0, 26/03/20) describes turf storage and management measures; we are satisfied that these measures are appropriate.	Noted.
19	124. Section 9 of the Terrestrial Ecology Assessment update (MOR-RHDHV-DOC-0110, F1.0, 26/03/20), regarding conservation objectives for the SAC, has not referred to the SAC management plan so should be updated with reference to this document.	Sections 9.1 and 9.2 includes details from the SAC Management Plan.

5 Overview of refinements made to the project envelope

This section outlines the refinements made to the project envelope. All changes lie within the existing Order limits.

Under both options, it is anticipated that the main construction compounds and welfare facilities will be located adjacent to the Landfall and Orthios substation sites. It is proposed that all satellite compounds are adopted for the storage of materials and small tools necessary for the day's activities.

All compounds will be established in accordance with the level of exposure to the environment and the anticipated weather conditions. For example, welfare facilities can be provided via welfare (e.g. Garic) van which can be readily removed from site at night or if weather conditions worsen. All compounds are to be secured via perimeter fencing which will be appropriate to the prevailing conditions (e.g. storm proofing).

For the construction phase of the project, a detailed Materials Management Plan will be developed by the contractor and submitted for acceptance by the client. All construction works will be programmed and undertaken to meet any planning and environmental constraints that are imposed by the works. It is however anticipated that the works will be phased to minimise environmental impact and disruption to local receptors. Construction of the works will be phased to suit available land take (e.g. stockpile and laydown areas) which will accommodate the temporary storage of turf as required.

5.1 Preferred Option: HDD at landfall

The designation of the SAC (and SSSI) includes 'Vegetated sea cliffs of the Atlantic and Baltic Coasts', and this habitat follows the coastline of Holy Island. The preferred option for crossing the cliffs is by Horizontal Directional Drilling (HDD), which avoids all direct impacts on the sensitive coastal habitats.

Under the preferred option, the transition pits from where the HDD would take place will be set back from the cliffs and the designated site by 220m, with all landfall substation related infrastructure, including stock piles, also set back by that distance or more. The HDD Methodology is presented in Chapter 4 Project Description of the ES.

5.2 Secondary Option: trenching at landfall

Should HDD not be possible at the landfall, a secondary option is included within the design envelope, which would incorporate trenching the cables across fields and pinning them down the cliffs. This option was presented in the ES and will only be deployed if the preferred HDD method is not achievable for engineering reasons. After feedback from NRW and RSPB, engineering approaches have been considered in more detail and considerable additional mitigation through design can be confirmed. Consideration has been made to refine the design and reduce potential impacts within the designated site and the designated features where possible through the following measures:

- **Micrositing**: The location of landfall has now been identified to be within a very narrow band of the SAC to minimise the footprint on the designated habitat. At this location, the SAC is limited to the cliff face and does not include the grassland at the top of the cliff. Further micrositing has also been undertaken following completion of the Botanical Survey of Cliff Vegetation at the point where the cable route crosses the cliff to minimise the impact on sensitive / protected / notable features (see Section 6.1.2).
- **Avoidance**: The width of the working corridor has been considered and reduced upon sensitive habitats where possible, including a reduction of the working corridor within the SAC itself from

30m with up to 30m working width either side (a total of 90m wide potential impact width), to 7m with 2m working width either side (a total of 11m wide potential impact width). This is a reduction of 88% on the original project footprint assessed in the ES. All wet and dry heath habitat has also already been avoided in the creation of the original Onshore Development Area presented in the ES.

- **Methodology**: Previous methodology included the option for slots to be cut into the cliff-face, in which the J-tubes would be inserted. To minimise damage to the SAC, it is now proposed to drill the J-tubes to the cliff using bolt anchors, allowing the J-tubes to sit approximately 400mm away from the face of the cliff.

Drawings 1 and 2 also provide further details on the route of the cable line and the design and layout of the preferred and secondary options for landfall at the cliff.

Further details on methodology for construction, maintenance and decommissioning at the cliffs is presented in the following sections. Prior to any construction in the cable corridor within the SAC and SSSI, a detailed Construction Method Statement for these works will be approved by IoACC, in consultation with NRW, pursuant to Planning Condition 3. This Construction Method Statement will detail the proposals to be employed on site to verify whether HDD is implementable and will identify if it is reasonable to pursue HDD or whether trenching the cables and pinning to the cliff is the only viable option. In the event of the need to trench the cables, an additional Planning Condition is proposed that will secure the location and extent of the cable corridor (as presented within this note).

5.2.1 Construction methodology

Trenching from transition pits to cliff side draw pits

This section should be read alongside Drawing 2: 122938-BVL-Z0-00-DR-Z-00003.

From the substation, nine cable ducts of 350mm outside diameter will be trenched within in a c.28m wide corridor to a series of nine draw pits set back from the cliff edge and outside the boundary of the SAC. A minimum working width of 2m either side of the trench corridor is required to enable machinery and operatives to safely access the trenches making a total minimum working corridor width of c.32m. Storage of turf (where practicable), topsoil and excavated material from the trench corridor will be in a designated stockpile area adjacent to the trench. The stockpile area will be in an area of poor semi-improved grassland, avoiding the un-improved neutral grassland. An Ecological Clerk of Works (ECoW) will work with the contractor to ensure work areas are microsited into the least sensitive habitat. There is a working area each side of the trench which incorporates the stockpile area and site compound. However, where the footprint is constrained there is an assumed 2m ‘buffer’ each side of the trench whereby the majority of the vehicle/plant movements will be on the reinstated trench (i.e. trench installed in sections). The stockpile area will be set back by a minimum of 19.5m from the sensitive coastal habitat. As with all embankments, due consideration will be given to pluvial runoff and suitable protection measures put in place. Any surface water drainage discharge will be in agreement with the landowner or governing authority. The type of and extent of protection provided will be in accordance with usual construction practises and standards.

Works within un-improved neutral grassland will be minimised (in both footprint and duration) where possible and will be prioritised in areas of improved / semi-improved grassland. The cables can be installed in the trenches in sections. Once the cables have been installed, the sections will be back filled, and the top soil / turf replaced as soon as practicable to reduce the time turf is stored for. Long-term (more than a month) storage of topsoil in bunds or heaps will be avoided where possible and will be positioned on improved grassland.

Protective matting (such as grass protection mesh, e.g. https://www.grassmats.co.uk/product/grass-protection-mesh/) would be used on the grassland habitat to reduce compaction impacts in the working corridor. The main cable trenching works are not located within the unimproved neutral grassland. No matting will be stored on the un-improved neutral grassland unnecessarily (for example when not in use) to minimise impacts to the neutral grassland and no equipment or excavated soil will be stored on the un-improved neutral grassland.

Due to the likely presence of rock, it is anticipated that the trenches (and draw pit excavations) will be dug by 30Tonne tracked excavator with a 'breaker' attachment and may take approximately 1 month to complete (best assumption, subject to production rates). Noise impacts associated with this equipment are discussed in note MOR/RHDHV/DOC/0120.

Cliff works

This section should be read alongside Drawing 1: 122938-BVL-Z0-00-DR-C-00600.P02-S2.

From the draw pits, the cable ducts will be marshalled closer together on approach to a structural steel cable chute positioned at the edge of the cliff. This length of cabling is anticipated to be installed using similar excavation equipment as per the main cable trenching works with the 32m working maintained to provide flexibility to complete the cliff side pinning works. Storage of turf (where practicable), top soil and excavated material will adopt the stockpile area used for the main trenching works which is in an area of Low Sensitive Habitat. The total excavated area of the cable trench between the draw pits and cable chute is c.191m^2 and will take approximately 1 week to complete (subject to production rates).

To facilitate the bending radius of the export cables as they pass over the cliff edge, it is proposed that a steel cable chute will be positioned at the top of the cliff. This chute is a structure c.7.5m wide that could be secured directly by several rock bolts at ground level. This element of the design will be subject to further refinement through detailed design phase post consent. However, as presented below the design represents the worst case.

The 9no. cables will exit the cable chute into 9no. J-tubes that will be attached directly to the cliff face and will pass through the SAC. The J-tube corridor will be c.7.15m wide down the cliff face (9 x 350mm J-Tube OD) + (8 x 500mm spacing) + (2 x 100mm end collars) = 7.35m at the collars. The width between the actual J-Tubes is 7.15m). Construction of the cables and pinning to the cliff will be via a top-down approach, using a specialist rope-access contractor to install and pin the J-tubes using manually operated drilling rigs. Personnel and the drilling rig may work directly on the cliff face or conduct the works off a suspended platform lowered from a crane (such as a mobile 60Tonne crane) located at the cliff edge, although the methodology is to be confirmed. This approach will ensure that the footprint of construction works on the cliff face remains as small as practicable and will require an additional 2m working width either side of the J-tube corridor where potential scuffing of the cliff face and associated vegetation will occur. The construction corridor on the cliff (and therefore within the SAC) will be c.11.15m wide and c.510m^2. The 32m working corridor adopted for the trenching works will be maintained at the top of the cliff to provide the necessary room to support the cliff pinning works which will probably take around 2 weeks to complete. Protective grass matting will be used to protect the unimproved neutral grassland habitat at the top of the cliff. Where practicable, equipment or matting will not be stored on the neutral grassland unnecessarily (for example, when not in use, noting it may not be practical to move the crane on a daily basis) to minimise impacts to the unimproved neutral grassland. It is expected that each pin will be grouted into place which will require provisions for the management of grout spillage, measures of which will be detailed within the final CoCP and PPMP. Alternatively, mechanical bolt anchorages may be adopted. The rock bolts are typically made of high yield steel although these could potentially be provided as stainless steel (but this

would incur significant additional cost). It is expected that required maintenance would be minimal and further corrosion protection could be offered by wrapping the bolts, however this is expected to be low risk.

On the cliff face, the J-tubes will be pinned using thread bar rock anchors (between 25 and 32mm diameter) currently expected to be set deep (3m embedment) into the rock and at 4m vertical spacings (along the incline of the rock). Adjacent J-tubes will be placed at 500mm clear distances and are anticipated to have an outer diameter of 350mm. It is currently assumed that each J-tube will be attached to the cliff individually which would require c.100 anchors in total. Further design development may identify the use of saddles/brackets to group adjacent J-tubes which could reduce the number of rock anchors to, for example, c.50 anchors.

The thread bar anchors will protrude from the cliff face by approximately 400mm to allow the J-tubes to be separated from the cliff face to minimise impacts to the cliffs and associated vegetation.

At the toe of the cliff, the J-tubes will be installed using rock bolt anchors drilled into the foreshore. Concrete protection mattresses (or rock bags) will be used to protect the J-tubes and will be placed up to level of highest astronomical tide (HAT). Some 7m^2 of this will extend into the 'Maritime & Cliff' zone of the SAC which includes the vegetated sea cliffs. The SAC boundary continues to Mean Low Water Springs (MLWS), however the SAC has no designated intertidal features.

It is recognised that the Glannau Ynys Gybi SSSI has other intertidal habitats/earth science features that contribute to the special interest, including rockpools, overhanging rock, gullies and under boulder communities and their associated flora and fauna. The refined landfall route joins the intertidal zone at an area where there is only approximately 30m between MHWS and MLWS, thereby minimising the potential impact on the intertidal zone. In addition, these special interest features of the intertidal zone will be avoided where possible.

The scale and difficulty of the work favours using lightweight drilling equipment that adopts air as the flushing medium. It will likely be percussive drilling methods that are used with air flush, which will produce dust. Percussive drilling will not be detrimental to the cliff face and should produce a neat round hole. It will probably produce dust and cuttings some of which may be blown away whilst some may fall by gravity rather like sand. Dust extraction measures will be in place and will be implemented through a DMP. Details of the DMP are outlined in Section 6.1.2.

The other main options for drilling fluid are water or air mist. Water would run down the face which is probably far less desirable than dust. Air mist introduces some water into the air to dampen the dust down but may have less benefit in this situation. Any other drilling fluids, such as bentonite or foam for example are less likely to be acceptable for the sea cliff environment. However, it is preferred that percussive drilling is adopted.

The rock bolts are typically made of high yield steel although these could potentially be provided as stainless steel (but this would incur significant additional cost). It is expected that required maintenance would be minimal and further corrosion protection could be offered by wrapping the bolts, however this is expected to be low risk.

5.2.2 Maintenance methodology

Maintenance of the cables will be undertaken by pulling them back through the J-tubes to the draw pits near the cliff edge. Access is therefore not required within the SAC for cable maintenance, with works completed within the grasslands at the top of the cliff.

The thread bar anchors penetrate 3m into the rock and will provide support the rock face of the cliff. Any maintenance of the J-tubes within the SAC is considered to be infrequent. In the unlikely event maintenance is required on the cliff face (i.e. within the SAC) the approach would be similar to construction, i.e. using a crane at the top of the cliff to support a lowered platform. The J-tubes will be designed such that structures (such as handholds) are able to support maintenance activities (i.e. inspection and repainting) without touching the cliff. It is likely that inspections of the J-tubes would take place every 5 years and following severe storm events. It is anticipated that the J-tubes and rock bolts will be robustly designed accounting for the exposed environment. It is therefore expected that no replacement or maintenance works will be required for well in excess of 4 years following installation (i.e. design life is well in excess of 4 years).

5.2.3 Decommissioning methodology

Cables will be removed from the cable ducts. The cable ducts will remain in-situ where buried either under the road or verge, but the J-tubes will be removed where surface laid on the cliffs at landfall. Upon decommissioning, the J-tubes will be removed from the cliff. This will entail similar methodology and footprints used during construction, working in reverse. The thread bar anchors will be cut off at the cliff face, with the embedded anchor left in situ to minimise disturbance to the cliff.

The cable chute (and concrete pad foundations) will be recovered during decommissioning. Ground anchors to the cable will be cut off at the foundation formation level. Chambers covers to the draw pits will be removed and the voids backfilled and covered with topsoil and turf.

The decommissioning method for the concrete matting is most likely to be a reverse of the installation method and include a mix of carefully managed work from the foreshore, from inshore vessels and by divers. The sea mattress will be inspected to assess structural integrity at the beginning of decommissioning and the method details adapted based on their condition, for example, if a portion was considered more, or less, likely to break-up upon removal.

6 Potential Impacts

The updated impacted assessments that have been undertaken focus on the highly sensitive features of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC and neutral grassland at the top of the cliff, in response to the comments and clarifications received by NRW. The assessments in the following sections update the impact assessments made in the ES following the design refinement described above.

The assessment considers potential impacts from:

- the preferred option of HDD at landfall; and
- the secondary option of trenching at landfall.

6.1 Construction impacts to Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC

6.1.1 Preferred Option: HDD at landfall

Direct impacts

The preferred option of bringing the cables ashore at landfall is to use HDD (see Chapter 4, Project Description of the ES). This method will avoid any interaction with the intertidal environment, vegetated sea cliffs and coastal fringe habitat, and would be located within the grasslands that are set further back from the coast (Figure 19.6, Volume II of the ES). The HDD entry and exit pits will be set back a minimum of 220m from sensitive coastal habitats. The use of HDD at landfall will entirely avoid the designated site and its qualifying features, and the habitat and species for which it is afforded protection, and consequently there will be **no direct impact** on the SAC/SSSI or its designated features.

Mitigation
None required

Residual Impact
There will remain to be **no direct impact**

Indirect impacts

There is potential for indirect impacts to occur should run-off of sediments occur from the construction footprint, including stockpiles of excavated material during the HDD activities, and contaminate or smother highly sensitive maritime grassland and cliff habitats at the coast. Impacts associated with run off are considered to be of up to negligible magnitude with effects occurring in the long term due to poor rates of recovery of sensitive habitats in stressful environmental conditions at the coast. This is anticipated to be of **minor adverse** significance, depending in the amount of habitat affected. Additional mitigation measures are discussed below.

Additional Mitigation
Control of sediment supply
Measures contained within the CoCP and the PPMP will be designed to limit the potential for dispersal and accidental releases of potential contaminants, soil derived dusts and uncontrolled run-off to occur during construction. The CoCP and the PPMP would be developed for the construction activities which will adhere to all relevant legislation and industry good practice guidance as detailed in NRW's series of Sector Guidance Notes (SNG) and Technical Guidance Notes (TNG) to advise operators on standards for operational and environmental performance. There are regularly updated, and a list will be compiled prior to commencement of construction to ensure currency of advice. Areas covered by the notes will include:

- Guidance for storage and handling of materials,
- Guidance for site drainage and effluent management; and
- Guidance on environmental best practice.

Good practice measures from the relevant guidance notes from NRW's Sector Guidance Notes (SNG) and Technical Guidance Notes (TNG) will be adopted and implemented as agreed with NRW. In addition, relevant good practise from the Construction Industry Research and Information Association (CIRIA)'s 'Control of water pollution from construction sites: Guidance for consultants and contractors (C532)' (2001) will also be implemented with agreement from NRW.

The CoCP and the PPMP will include the following:

- Subsoil exposure would be minimised, and strips of undisturbed vegetation would be retained on the edge of the working area where possible;
- On-site retention of sediment would be maximised by routing all drainage through the site drainage system;
- The drainage system would include measures to intercept sediment runoff at source. Suitable filters would be used to remove sediment from any water discharged into the surface drainage network;
- Additional measures would be included in parts of the working area that are in proximity to surface drainage channels;
- Soil and sediment accumulation on road surfaces would be minimised as reasonably practicable by cleaning the wheels of vehicles leaving site and, where required, clearance of the road surface. Traffic movement would be restricted to minimise the potential for surface disturbance;
- The works area would aim to avoid water resources and flood risk receptors wherever possible.
- The CoCP and the PPMP will set out how material is to be excavated and stockpiled to minimise the potential for run-off, soil degradation or wind dispersal of dusts, including consideration of local natural drainage to enable the precise location of stockpile material to drain into local natural soil drainage system;
- The covering of long-term stockpiles with sheeting or the binding of the surface through temporary grass seeding will be specified together with dampening procedures during dry weather.
- In the event of uncontrolled releases occurring, the CoCP and the PPMP would set out the measures required of the construction contractor to ensure that the extent and impact of any such releases are contained and ultimately remediated.
- Construction materials and spoil materials will be positioned in a manner that does not constrain potential flood waters unduly or direct flood waters towards habitats of high sensitivity.
- Construction will not be undertaken during very extreme wet weather where erosion of sediments and risk from flooding may increase.
- The avoidance of soil compaction through the use of Low Ground Pressure (LGP) tracked or wheeled tyres to spread the weight of vehicles, limiting the height of soil stockpile mounds, restricting construction traffic to specific areas on the construction working width.

Further details on mitigation for release of contaminants is provided in Chapter 18 Ground Conditions and Contamination of the Morlais ES.

Soil management Plan

Under the final CoCP a Soil Management Plan (SMP) would be produced by a competent soil science contractor and agreed with the IoACC (and NRW as applicable), in advance of the works. The SMP would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP will include, but not be limited to, the following measures:

- The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement;
- Topsoil from unimproved or semi-improved areas will be kept separate from improved topsoil;
- Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location;

- Protocols for works in wet weather to minimise accumulation of mud within the working corridor and runoff into the SAC / unimproved neutral grassland; and
- The setting of vehicular speeds along the construction access routes to minimise soil compaction.
- Any stockpiles of excavated material shall be covered, seeded or fenced to prevent wind whipping or wind/water erosion.
- Where surface vegetation has been removed, this will be reseeded to prevent future runoff.
- This plan will be developed with the relevant stakeholders and should be complimentary to other proposed mitigation measures

Residual impact

Following implementation of the mitigation measures to protect stockpiles and other areas of the construction site from run-off impacting upon the sensitive coastal habitats, including the designated site, the potential for a pathway of impact is greatly reduced and therefore potential indirect impacts associated with run-off will be **negligible** in significance.

6.1.2 Secondary Option: trenching at landfall

Direct impacts

Under a worst-case scenario where HDD at landfall is not possible for technical / engineering reasons, landfall activities will involve trenching the cabling through a narrow coastal strip of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC designation and associated cliff habitat. Details of the activities and methods used within the SAC/SSSI are detailed in Section 5.2.

Areas of long term (i.e. for the life of the project and the recovery of the vegetation) and temporary direct impacts to the SAC cliff features are detailed in **Table 6.1**. A total of 510 m^2 of the SAC/SSSI would be impacted, which is a large reduction from that considered in the original assessment, which considered up to 31,700 m^2 of the designated site to be disturbed / permanently impacted.

Table 6.1 Areas of designated habitat effected within the SAC

Impact type	Activity	Area (m^2)
Long term temporary (life of project + recovery) loss (m^2) for cable footprint	Corridor of J-tubes 7.15m wide (7.35m at the collars) and c.45m along the cliff incline, including 50-100 thread bar rock anchors (including 36.5m^2 for concrete mattress protectors at the toe of the cliff).	330
Short term temporary loss (construction + recovery) (m^2)	Two working corridors for installation where scuffing of the cliff face will occur, each 2m wide each side of the 7.15m wide J-Tube corridor and c.45m along the cliff incline.	180
Total area of SAC impacted (m^2)		510 Of which, this is approximately (based on initial Phase 1 Habitat Survey results, prior to the Botanical Survey): Neutral grassland– 162m^2 Cliff/Maritime – 341m^2 Intertidal habitat – 7m^2
Total footprint of SAC (m^2)		43,600,000

Impact type	Activity	Area (m^2)
Total footprint of Vegetated sea cliffs of the Atlantic (and Baltic) Coasts recorded within the SAC (m^2)		1,105,900
% of Vegetated sea cliffs of the Atlantic (and Baltic) Coasts feature (i.e. life of project plus recovery of vegetation) affected in the long term		0.029%
% of Vegetated sea cliffs of the Atlantic (and Baltic) Coasts feature affected in the temporary working corridor		0.016%
Total % of Vegetated sea cliffs of the Atlantic (and Baltic) Coasts affected		**0.046%**

The amended methodology to pin the cables to the cliff (see Section 5.2.1 for details) rather than create slots for J-tubes to be inserted into, is designed to minimise the impacts to the cliff face and associated vegetation and has reduced the footprint from up to 31,700m^2 of cliff previously assessed in the Environmental Statement. The footprint of temporary habitat disturbance on the cliff due to scuffing during installation will be up to 2m either side of the J-tube corridor. In addition, there may be differential shading different to the surrounding unaffected cliff, but the cliff faces a sunny south-west aspect and this is not anticipated to extend beyond the 2m working buffer either side of the cables. The worst-case assessment assumes habitat loss would occur in the entire working corridor during installation however, because the J-tubes would be installed carefully by hand, there are likely to be large areas of vegetation, or roots which may persist and grow, therefore being retained within the working corridor and that the scuffing does not strip the entire temporary working corridor of vegetation and therefore the realistic scenario is likely to be less than the conservative worst case scenario presented.

The J-tubes will be designed such that the structures (such as handholds) are able to support maintenance activities (i.e. inspection and repainting) without touching the cliff and therefore the habitat within the 2m working corridor is expected to recover following construction and not be further impacted by maintenance activities, which are likely to be required every 5-10 years.

It is therefore considered that approximately 330m^2 of the cliff feature affected within the SAC/SSSI (0.029% of the feature within the SAC) would be subject to a long term impact upon the cliffs. This impact would be reversable upon decommissioning, however this is likely to be in excess of 40 years. The working corridors (180m^2, i.e. 0.016% of the feature within the SAC) would be temporarily disturbed through scuffing during the installation period, but recovery of the vegetation will then occur. It is worth noting that the sea cliffs along the Holy Island coast do occasionally collapse, which may interfere with the vegetation established upon it, however the condition of the cliffs, or their friability is currently unknown within the Onshore Development Area. The thread bar anchors would be installed deep enough to contribute to the stabilising of the cliffs behind the J-tubes.

Post survey micrositing

The Botanical Survey has provided greater clarity on the vegetation upon the cliff and how much Annex I habitat would be located within the 510m^2 cliff corridor.

As much of the central band of cliff is considered to be Annex I habitat of broadly uniform distribution and value, measures are proposed to microsite the construction corridor to further minimise the footprint within these habitats. The western side of the central face broadly aretes to a west facing cliff face. At this location an area of bare rock extends further up the cliff. It is proposed to take advantage of the area of bare rock and place the construction corridor up the westernmost part of the central face (adjacent to the

arete) to minimise the area of Annex I habitats affected (this area is approximately shown by a pink line on **Figure 1**).

By increasing the amount of the corridor located within areas of bare rock, and taking account of the band of bare rock at the base of the cliff and the scrub habitat across the top section of the cliff, the amount of Annex I habitat which would now be located within the construction corridor is considered to be greatly reduced (approximately by half) from what was previously assessed to be present in the pre-survey worst case scenario and as assessed in the Environmental Statement. The majority of Annex I habitat affected under this route would be MC1/MC1b, with some MC5b/MC8f mosaic community also directly impacted. Full recovery of this habitat to its current species diversity levels will be slow due to the diversity of plants present and the stressful environmental conditions the habitat lives on (high wind, rain, salt spray, thin soils etc.).

Actual areas of habitat have not been calculated and annotations shown on **Figure 1** below are indicative, given the photograph includes multiple faces of the cliff and for-shortening of perspective occurs at the top of the cliff. However, the total amount of designated sea cliff Annex I habitat within the proposed cable corridor is estimated to be in the region of 165m^2 (approximately 0.015% of the designated feature within the SAC) with approximately 90m^2 of Annex I habitat within the two proposed 2m wide installation corridors (combined approximately 0.008% of the designated feature within the SAC).

Consequently, the impact of the removal of this small area of habitat is not anticipated to have an adverse effect on the ecological function of the sea cliffs in the wider SAC area or cause significant severance.

It is noted that areas of bare rock are also present to the east of the survey area (**Figure 1**) which does not contain Annex I habitats, however this area been previously considered as a potential route and is unstable and not suitable from an engineering perspective to construct within.

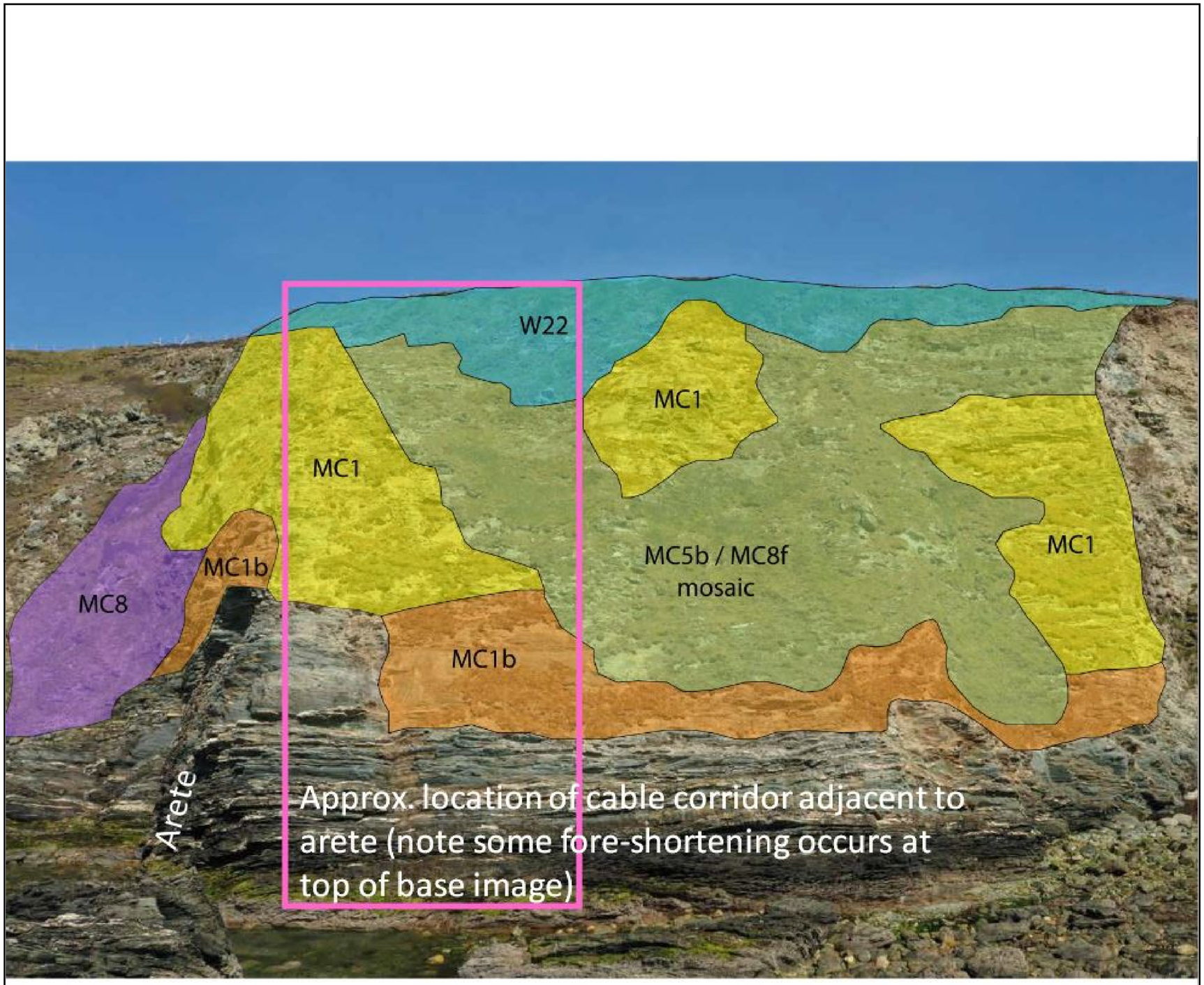
In summary, all wet and dry heath designated habitat has already been avoided in the design of the Onshore Development Area. Our analysis suggests that as worst case approximately 0.029% of the vegetated sea cliffs designated feature is anticipated to be directly impacted in the long term (i.e. for the life of the project plus recovery), with a further 0.016% affected in the short term during construction plus recovery. It is likely that the actual area affected by installation will be less than the maximum 0.046%[1] worst case loss as cable micrositing within the least sensitive habitats will reduce the potential area of habitat affected by 50%, habitat lost through installation and maintenance will be minimised through further micrositing the cables to cover as little vegetation as possible, and through careful hand installation methods for construction, operation and decommissioning. It is Menter Môn's position that this level very small level of impact, albeit long term but temporary, to a non-priority habitat is an effect of negligible magnitude on the integrity of the SAC. Overall, the impact is anticipated to be **minor adverse** in significance, which is not significant in EIA terms.

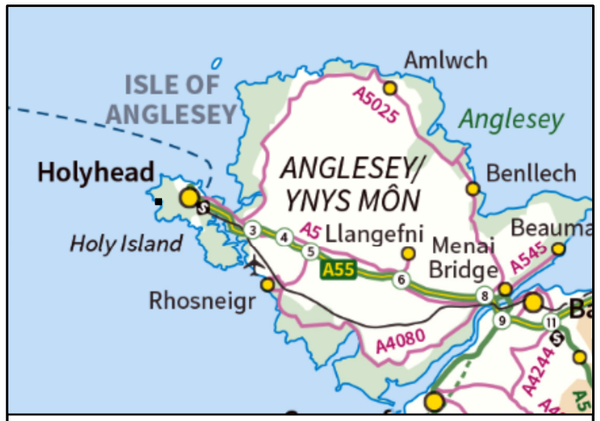
Additional Mitigation

Under the secondary option, i.e. open cut trenching and pinning the J-tubes to the cliff face, measures are already made to avoid and minimise direct impacts upon the SAC/SSSI features through micrositing, reduction of footprint and adaptation of methods to be used during construction. Further mitigation is outlined below:

Preconstruction survey

[1] This total footprint of habitat affected does not exactly equal 0.016% plus 0.029% due to rounding.





Legend:

- MC8 (*Festuca rubra - Armeria maritima* maritime grassland)
- MC1 (*Crithmum maritimum - Spergularia rupicola* maritime rock-crevice community)
- MC1b (*Inula crithmoides* sub-community)
- MC5b (*Armeria maritima - Cerastium diffusum ssp. diffusum* maritime therophyte community *Anthyllis vulneraria* sub-community) / MCB1 (*Festuca rubra - Armeria maritima* maritime grassland *Anthyllis vulneraria* sub-community) mosaic
- W22 (*Prunus spinosa - Rubus fruticosus* sub-community)

Client: morlais / MENTER MÔN

Project: morlais ANGLESEY MARINE ENERGY

Title:

Location of Microsited Cable Corridor following Botanical Survey

Figure: 1

Drawing No: PB5034-POE-019-051

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	16/09/20	GC	GC	A3	No Scale

Co-ordinate system:

Royal HaskoningDHV
Enhancing Society Together

ROYAL HASKONINGDHV
INDUSTRY & BUILDINGS
2 ABBEY GARDENS
GREAT COLLEGE STREET
WESTMINSTER
LONDON
SW1P 3NL
+44 (0)20 7222 2115
www.royalhaskoning.co.uk

Prior to construction, further detailed botanical survey work will be undertaken in the season before construction commences to record the presence and extent of spatulate (South Stack) fleawort, golden-hair lichen and spotted rock-rose (and other areas of botanically rich vegetation) so that minimal impacts to these species and their associated habitats can be experienced. Such survey work should be carried out in May or June when fleawort is in flower to aid with pre-construction micrositing activities. The design of the survey will be undertaken in consultation with the IoACC and NRW and will take the form of a Phase II National Vegetation Classification Survey (by NRW approved contractors with relevant qualifications and experience in surveying cliff face vegetation) and will extend at least 20m from the cliff top inland and finish at break of slope on the seaward side. Fixed point photographs will be used as part of the survey procedure. Survey on the cliff may be undertaken by combination of drone and a roped-access botanical survey by suitably-qualified botanist to allow for identification of small specimens of rare plants. This will also include photography of the cliff face to provide an understanding of density of the plant growth. The survey will provide detail on the vegetation immediately prior to construction to allow for micrositing where possible around sensitive / notable / protected features.

ECoW

A suitably qualified and NRW approved ECoW will be present on the cliff face using roped access for all cliff works activities. The ECoW will provide a toolbox talk briefing to all relevant construction personnel on the importance of the designated sites and associated features, and will provide guidance and instruction to the construction team working within the SAC/SSSI boundary and the cliff on avoidance of all protected or notable species where possible to minimise the loss of plants from the cliff. Clumps of notable or protected species will be highlighted to construction personnel for avoidance where possible. Works will not be undertaken in strong winds or adverse weather conditions to minimise risk of accident on the cliff. The ECoW will also advise on measures for minimising the loss of propagules during construction, and measures to ensure this will be included within the EAP.

Residual Impact

The impact to the designated feature of the SAC/SSSI remains **minor adverse** in significance during construction, operation and decommissioning phases. Works to undertake biodiversity net gain will be reliant upon further survey and consultation with IoACC and NRW.

Indirect impacts

There is potential for indirect impacts should run-off of sediments occur from the construction footprint, including stockpiles of excavated material during the trenching activities, and contaminate or smother highly sensitive maritime grassland and cliff habitats at the coast. Impacts associated with surface water run-off are considered to be of up to negligible magnitude with effects occurring in the long term due to poor rates of recovery of sensitive habitats in stressful environmental conditions at the coast. This is anticipated to be of up to **minor adverse** significance, depending in the amount of habitat affected. Additional mitigation measures are discussed below.

A water resources assessment has been undertaken and is presented in Chapter 17, Water Resources and Flood Risk of the ES. The assessment concluded no significant impacts. There is no hydrological connection to the protected sites in terms of surface water, and the excavations are shallow enough to have no significant impact on groundwater flow. As such, there is not anticipated to be any hydrological impacts which may affect the habitats, species or designated features of the designated sites.

Air quality impacts on designated ecological sites are considered in Chapter 22, Air Quality of the ES. The methodology used for this assessment follows the *Guidance on the assessment of dust from demolition and construction* (IAQM, 2014). Impacts on designated sites relating to construction phase dust and particulate matter emissions were considered. Risk of dust impacts to ecological receptors, including the

designated sites, were assessed to be high during earthworks, low during construction activities and medium from track out from Heavy Goods Vehicles (HGV) movements. With the implementation of the mitigation measures recommended in Chapter 22, Air Quality of the ES, i.e. adherence to best practice dust minimisation and suppression methods as recommended by the IAQM (2014), including creation of a DMP, impacts to ecological receptors are considered to be not significant. In addition, there are not anticipated to be any significant impacts on designated sites associated with road traffic emissions due to the expected low number of vehicle movements in the construction, operational and decommissioning phases. The measures to be included in the DMP are summarised in (see '*Dust Management Plan*' below for further details). This includes dust monitoring for the lowland heathland SAC habitat.

Additional Mitigation measures

Control of sediment supply

Measures outlined within the CoCP and PPMP are designed to limit the potential for dispersal and accidental releases of potential contaminants, soil derived dusts and uncontrolled run-off to occur during construction. The CoCP and the PPMP would be developed for the construction activities which will adhere to all relevant legislation and industry good practice guidance as detailed in NRW's series of Sector Guidance Notes (SNG) and Technical Guidance Notes (TNG) to advise operators on standards for operational and environmental performance. There are regularly updated, and a list will be compiled prior to commencement of construction to ensure currency of advice. Areas covered by the notes will include:

- Guidance for storage and handling of materials,
- Guidance for site drainage and effluent management; and
- Guidance on environmental best practice.

Good practice measures from the relevant guidance notes from NRW's Sector Guidance Notes (SNG) and Technical Guidance Notes (TNG) will be adopted and implemented as agreed with NRW. In addition, relevant good practise from the Construction Industry Research and Information Association (CIRIA)'s 'Control of water pollution from construction sites: Guidance for consultants and contractors (C532)' (2001) will also be implemented with agreement from NRW.

The final CoCP and PPMP and include the following:

- Subsoil exposure would be minimised, and strips of undisturbed vegetation would be retained on the edge of the working area where possible;
- On-site retention of sediment would be maximised by routing all drainage through the site drainage system;
- The drainage system would include measures to intercept sediment runoff at source. Suitable filters would be used to remove sediment from any water discharged into the surface drainage network;
- Additional measures would be included in parts of the working area that are in proximity to surface drainage channels;
- Soil and sediment accumulation on road surfaces would be minimised as reasonably practicable by cleaning the wheels of vehicles leaving site and, where required, clearance of the road surface. Traffic movement would be restricted to minimise the potential for surface disturbance;
- The works area would aim to avoid water resources and flood risk receptors wherever possible.
- The CMS will set out how material is to be excavated and stockpiled to minimise the potential for run-off, soil degradation or wind dispersal of dusts, including consideration of local natural drainage to enable the precise location of stockpile material to drain into local natural soil drainage system;

- The covering of long-term stockpiles with sheeting or the binding of the surface through temporary grass seeding will be specified together with dampening procedures during dry weather.
- In the event of uncontrolled releases occurring, the CMS and the Contractor's own method statements contained in their Construction Phase Plan (CPP) would also set out the measures required to ensure that the extent and impact of any such releases are contained and ultimately remediated.
- Construction materials and spoil materials will be positioned in a manner that does not constrain potential flood waters unduly or direct flood waters towards habitats of high sensitivity.
- Construction will not be undertaken during very extreme wet weather where erosion of sediments and risk from flooding may increase.
- The avoidance of soil compaction through the use of Low Ground Pressure (LGP) tracked or wheeled tyres to spread the weight of vehicles, limiting the height of soil stockpile mounds, restricting construction traffic to specific areas on the construction working width.

Further details on mitigation for release of contaminants is provided in Chapter 18 Ground Conditions and Contamination of the Morlais ES.

Soil management Plan
Under the CoCP a SMP would be produced by a competent soil science contractor and agreed with the IoACC (and NRW as applicable), in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP will include, but not be limited to, the following measures:

- The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement;
- Topsoil from unimproved or semi-improved areas will be kept separate from improved topsoil;
- Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location;
- Protocols for works in wet weather to minimise accumulation of mud within the working corridor and runoff into the SAC / unimproved neutral grassland; and
- The setting of vehicular speeds along the construction access routes to minimise soil compaction.
- Any stockpiles of excavated material shall be covered, seeded or fenced to prevent wind whipping or wind/water erosion.
- Where surface vegetation has been removed, this will be reseeded to prevent future runoff.
- This plan will be developed with the relevant stakeholders and should be complimentary to other proposed mitigation measures

Dust Management Plan
The DMP, to be developed once a contractor has been appointed post-consent and agreed with IoACC and NRW prior to construction, will contain best-practice measures with respect to dust management during construction. In additional the general site-wide mitigation measures, the following specific measures will be included in the DMP to mitigate potential impact to sensitive vegetated sea cliff and lowland heath habitats of the SSSI/SAC (adapted from IAQMs Guidance on the assessment of dust from demolition and construction (2014)):

- Only use drilling equipment fitted or in conjunction with suitable dust suppression techniques such as local extraction;

- Monitoring of the works on the cliff will be undertaken by the ECoW by visual inspection (dust monitoring gauges, such as 'frisbee' gauges' need level ground to operate and are not suitable for cliff deployment). Should the works be observed by the ECoW to be generating unacceptable levels of dust, as defined as a level which will lead to the potential for local smothering of species which comprise vegetated sea cliff habitats, the ECoW with have the authority to stop the works until remedial measures have been deployed. These will primarily involve the damping down of the affected area before work can recommence. Alternative measures, including the use of localised barriers (i.e. sheeting) to temporarily protect sensitive areas where dampening down would not be effective, will also be deployed of required;
- Restriction of weather conditions when dust generating activities on the cliff face are acceptable (i.e. during damp days);
- Monitoring of dust generation during other construction activities will also be detailed in the DMP to ensure that there are no impacts on nearby lowland heathland habitat located within the SAC. Dust levels at the lowland heathland habitat located within 50m of the site boundary will be monitored through the use of construction during dust-generating elements of construction (e.g. earthworks) through the use of dust monitoring stations (frisbee gauges). Should dust levels breach an agreed threshold, mitigation measures will be employed. These will be derived from those detailed in Section 8.2 of IAQMs Guidance on the assessment of dust from demolition and construction (2014). A threshold beyond which dust levels would be unacceptable, location of gauges, procedure should thresholds be breached, and monitoring responsibilities will be included in the DMP.

Residual impact
Following implementation of the mitigation measures to protect stockpiles and other areas of the construction site from run-off impacting upon the sensitive coastal habitats, including the designated site, the potential for a pathway of impact is greatly reduced and therefore potential indirect impacts associated with run-off will be of **negligible** significance.

6.2 Potential construction impacts on sensitive grasslands outwith the boundary of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC

6.2.1 Preferred Option: HDD at landfall

Direct impacts

Under the preferred option of HDD at landfall, there will be **no direct impacts** to the sensitive grasslands at the coast.

Mitigation
None required

Residual Impact
There will remain to be **no direct impact**.

Indirect impacts

There is potential for indirect impacts to occur should run-off of sediments occur from the construction footprint, including stockpiles of excavated material during the HDD activities, and contaminate or smother highly sensitive maritime grassland at the coast. Impacts associated with run off are considered to be of

up to negligible magnitude with effects occurring in the long term due to poor rates of recovery of sensitive habitats in stressful environmental conditions at the coast. This is anticipated to be of up to **minor adverse significance**, depending in the amount of habitat affected.

A water resources assessment has been undertaken and is presented in Chapter 17, Water Resources and Flood Risk of the Morlais ES. The assessment concluded no significant impacts. There is no hydrological connection to the protected sites in terms of surface water, and the excavations are shallow enough to have no significant impact on groundwater flow. As such, there is not anticipated to be any hydrological impacts which may affect the habitats or species at the coast.

Additional Mitigation measures

Control of sediment supply

Measures contained within the CoCP and the PPMP will be designed to limit the potential for dispersal and accidental releases of potential contaminants, soil derived dusts and uncontrolled run-off to occur during construction. The CoCP and the PPMP would be developed for the construction activities which will adhere to all relevant legislation and industry good practice guidance as detailed in NRW's series of Sector Guidance Notes (SNG) and Technical Guidance Notes (TNG) to advise operators on standards for operational and environmental performance. There are regularly updated, and a list will be compiled prior to commencement of construction to ensure currency of advice. Areas covered by the notes will include:

- Guidance for storage and handling of materials,
- Guidance for site drainage and effluent management; and
- Guidance on environmental best practice.

Good practice measures from the Construction Industry Research and Information Association (CIRIA)'s 'Control of water pollution from construction sites: Guidance for consultants and contractors (C532)' (2001) will also be implemented with agreement from NRW.

The PPMP will include the following:

- Subsoil exposure would be minimised, and strips of undisturbed vegetation would be retained on the edge of the working area where possible;
- On-site retention of sediment would be maximised by routing all drainage through the site drainage system;
- The drainage system would include measures to intercept sediment runoff at source. Suitable filters would be used to remove sediment from any water discharged into the surface drainage network;
- Additional measures would be included in parts of the working area that are in proximity to surface drainage channels;
- Soil and sediment accumulation on road surfaces would be minimised as reasonably practicable by cleaning the wheels of vehicles leaving site and, where required, clearance of the road surface. Traffic movement would be restricted to minimise the potential for surface disturbance;
- The works area would aim to avoid water resources and flood risk receptors wherever possible.
- The CMS will set out how material is to be excavated and stockpiled to minimise the potential for run-off, soil degradation or wind dispersal of dusts, including consideration of local natural drainage to enable the precise location of stockpile material to drain into local natural soil drainage system;
- The covering of long-term stockpiles with sheeting or the binding of the surface through temporary grass seeding will be specified together with dampening procedures during dry weather.
- In the event of uncontrolled releases occurring, the CMS and the Contractor's own method statements contained in their Construction Phase Plan (CPP) would also set out the measures

required to ensure that the extent and impact of any such releases are contained and ultimately remediated.
- Construction materials and spoil materials will be positioned in a manner that does not constrain potential flood waters unduly or direct flood waters towards habitats of high sensitivity.
- Construction will not be undertaken during very extreme wet weather where erosion of sediments and risk from flooding may increase.
- The avoidance of soil compaction through the use of Low Ground Pressure (LGP) tracked or wheeled tyres to spread the weight of vehicles, limiting the height of soil stockpile mounds, restricting construction traffic to specific areas on the construction working width.

Soil management Plan
As part of the CoCP, a SMP would be produced by a competent soil science contractor and agreed with the IoACC (and NRW as applicable) This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP will include, but not be limited to, the following measures:

- The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement;
- Topsoil from unimproved or semi-improved areas will be kept separate from improved topsoil;
- Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location;
- Protocols for works in wet weather to minimise accumulation of mud within the working corridor and runoff into the SAC / unimproved neutral grassland; and
- The setting of vehicular speeds along the construction access routes to minimise soil compaction.
- Any stockpiles of excavated material shall be covered, seeded or fenced to prevent wind whipping or wind/water erosion.
- Where surface vegetation has been removed, this will be reseeded to prevent future runoff.
- This plan will be developed with the relevant stakeholders and should be complimentary to other proposed mitigation measures

Residual impact
Following implementation of the mitigation measures to protect stockpiles and other areas of the construction site from run-off impacting upon the sensitive coastal habitats, including the sensitive grasslands, the potential for a pathway of impact is greatly reduced and therefore potential indirect impacts associated with run-off will be of **negligible** significance.

6.2.2 Secondary Option: trenching at landfall

Direct impacts

This section (and associated calculated areas) focusses on the impacts to the coastal fringe habitats where the unimproved neutral grassland is located. It considers the works at the top of the cliff, as far as the landward face of the draw pits. It does not consider the trenching works inland from the draw pits, which is considered within the ES.

Consideration has been made in the revised design of the proposed project to avoid the neutral unimproved grassland located at the top of the cliff where practicable.

The nine proposed draw-pits will be located within the unimproved neutral grassland, transitioning to W22 scrub habitat toward the cliff edge. It is proposed to leave all nine manhole covers in place, to reduce temporary disturbance to the habitat during planned or unplanned maintenance events. The footprint of the manhole covers, and the nine ground anchors will result in long term habitat loss for the life of the project as presented in **Table 6.2**, and will be reinstated upon decommissioning. There will be no laydown areas for plant or equipment within the neutral grassland habitat, recognising that this habitat is considered to be of high sensitivity.

Table 6.2 Areas of grassland potentially affected at the coast for secondary option of trenching at landfall

Impact type	Activity	Area (m^2)	Total (m^2)
Neutral unimproved grassland outside the SAC (not forming part of Annex I habitats)			
Long term temporary (i.e. for life of project plus recovery) habitat loss (m^2)	9no. ground anchors	n/a	7.30 plus 9 ground anchors
	9no. 900 x 900mm draw pit access manholes at the eastern end	7.30	
Short term temporary habitat loss (m^2)	Draw pits corridor and marshalling area	301.25	611.85
	Working corridor	310.60	

Due to the small habitat loss of 7.30m^2 anticipated in the long term (for the life of the project plus recovery of vegetation) and reduced temporary disturbed footprint of unimproved neutral grassland at the coast of 611.85m^2, the magnitude of impact is assessed to be low. As such, the impacts to the neutral unimproved grassland at the coast are assessed to be **moderate adverse**, which is significant in EIA terms.

Additional Mitigation

Pre-construction survey

Prior to construction, further detailed botanical survey work will be undertaken in the season before construction commences to record the presence and extent of spatulate (South Stack) fleawort, golden-hair lichen and spotted rock-rose (and other areas of botanically rich vegetation) so that minimal impacts to these species and their associated habitats can be experienced. Such survey work should be carried out in May or June when fleawort is in flower to aid with micrositing activities. The design of the survey will be undertaken in consultation with the IoACC and NRW and will take the form of a Phase II National Vegetation Classification Survey (by NRW approved contractors with relevant qualifications and experience in surveying cliff face vegetation) and will extend at least 20m from the cliff top inland and finish at break of slope on the seaward side. Fixed point photographs will be used as part of the survey procedure. Survey on the cliff may be undertaken by combination of drone and a roped-access botanical survey by suitably-qualified botanist to allow for identification of small specimens of rare plants. This will also include photography of the cliff face to provide an understanding of density of the plant growth. The survey will provide detail on the vegetation immediately prior to construction to allow for micrositing where possible around sensitive / notable / protected features.

Seed collection and habitat restoration

Seed collection will be undertaken in late summer / autumn prior to construction from the areas of unimproved neutral grassland habitat. In some areas it may be preferable to reseed using material collected using a flail mower collector from local heathland, as clifftop neutral grassland has been previously mapped as heathland by CCW's Phase 1 surveyors (NRW, pers comm) and therefore the clifftop habitat may be a heath/neutral grassland mosaic. NRW have expressed preference to restore to heath in such case. The Botanical Survey (Document MOR-BSG-DOC-0001) recorded a fine mosaic of grassland (MC9 community) and scrub (W22 community) habitat at the top of the cliff within the SAC/SSSI boundary, dominated by western gorse interspersed with blackthorn. Bramble *Rubus fruticosus agg*.,

bracken *Pteridium aquilinum*, honeysuckle *Lonicera periclymenum*, sorrel *Rumex acetosella*, red campion *Silene dioica* and cock's-foot were also present in amongst the scrub. The western part of the cliff top was recorded to be more open, and in addition to western gorse supported a greater range of species, similar to those that occur on the front face of the sea cliffs (including thrift, sea plantain *Plantago maritima*, buck's-horn plantain, sea campion, bird's-foot trefoil, kidney vetch, wild carrot, sheep's-bit, cat's-ear, and English stonecrop). Some heather *Calluna vulgaris* and thyme *Thymus polytrichus* was also present. Mentor Mon propose to restore the scrub/grassland mosaic habitat at the top of the cliff within the boundary of the SAC/SSSI (**Figure 2**) and the Onshore Development Area with heath species to support restoration of the heath habitat in this area, subject to agreement with NRW. All collected seeds will be suitably stored and used to aid habitat replacement on completion of the works and within the areas for habitat restoration to be agreed post-consent. It is accepted that the seeds may not be successful in establishing. All replanting will comprise species suitable to the area, particularly near the boundary of the SAC. Monitoring of the replanted areas will be undertaken to understand the diversity that returns, and results will be provided to NRW. Grassland outwith the boundary of the SAC/SSSI is currently managed by mowing, and the construction works outwith the SAC/SSSI boundary will be restored in line with the Turf Management Plan (TMP) detailed below.

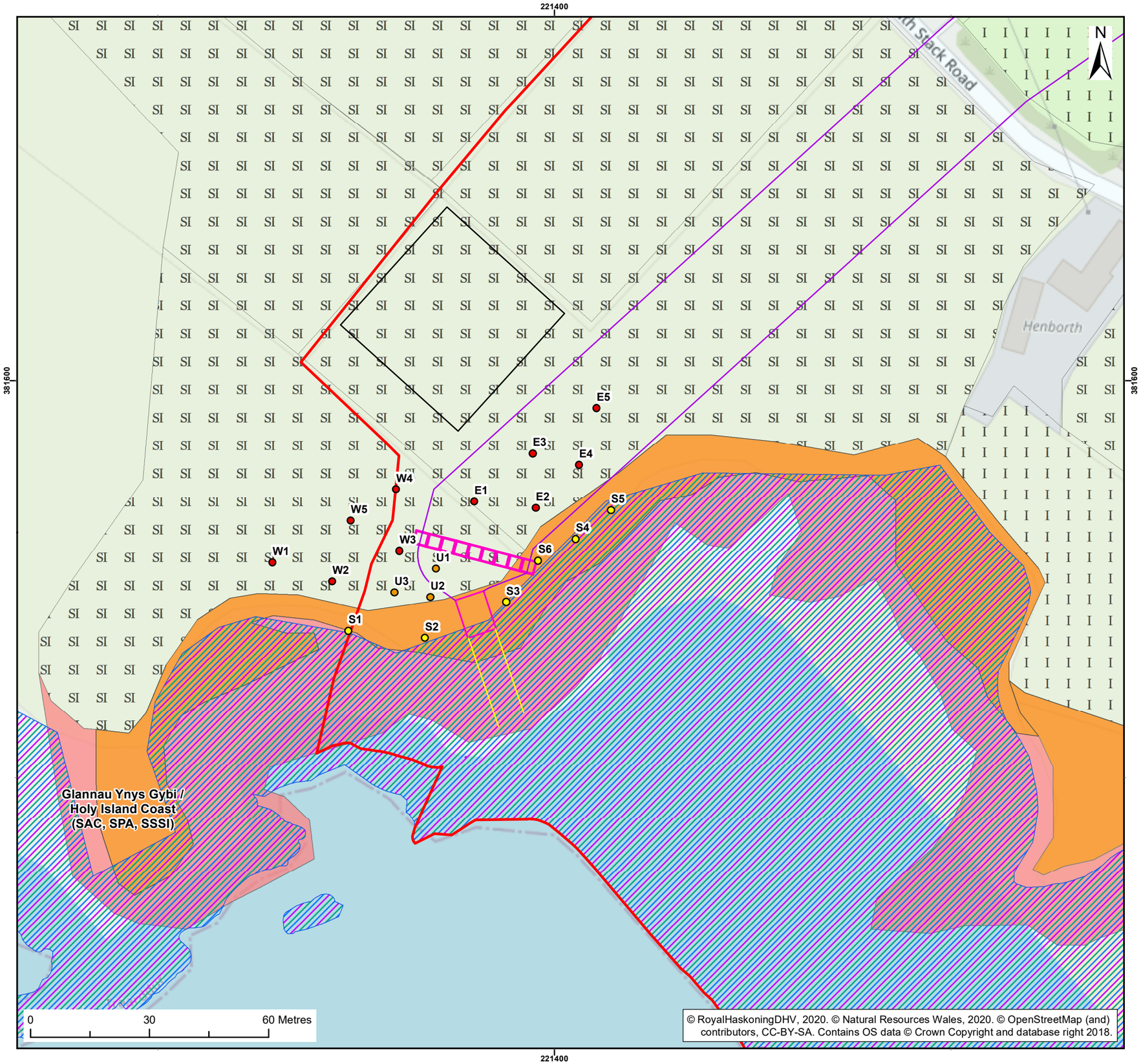
Turf management Plan

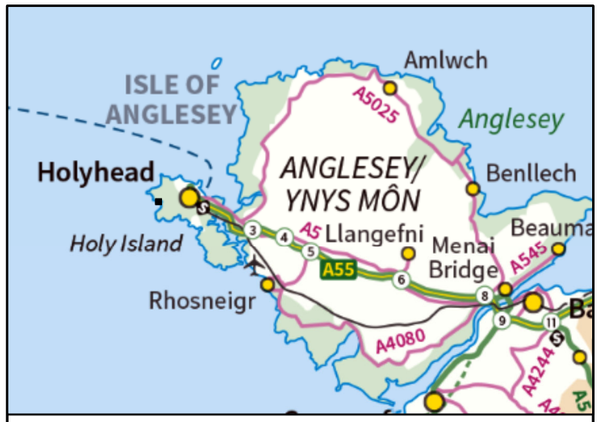
A TMP will be created and included within the CoCP for habitats outwith the SAC/SSSI boundary. Works to install the J-tubes on the cliffs have been designed to be undertaken manually to minimise the disturbance and removal of cliff vegetation, however the worst case assumes the disturbance / loss of all vegetation within the corridor of works on the cliffs. Re-turfing of the works within the SAC is considered to not be possible due to the steepness of the terrain and the fragility/thinness of associated soils. In addition, the stressful environmental conditions would reduce the likelihood of replaced vegetation establishing, and as monitoring is proposed to take place approximately every 5 years, there is potential for more disturbance to occur before the habitat has recovered. Therefore, no habitat replacement is proposed upon the cliffs within the SAC.

Soil depths at the top of the cliff are currently unknown but are considered to be shallow. The success of a turf management regime is therefore currently unknown, however if it is practicable to do so, the following turf management will be implemented.

Turf removed at the top of the cliff will be carefully managed to allow for reinstatement upon completion of the works. This will include the following measures:

- Stripped turfs will be stored (labelled) within the stockpiling areas 'vegetation or turf side up' with adequate growing conditions e.g. water (including during dry or windy conditions), light and temperature;
- Turves will be protected through temporary fencing to prevent vehicles driving on the edge of them;
- Turves will not be stored on good quality habitat;
- Turves will be re-used in areas with similar vegetation and hydrology;
- Turves should be replaced as soon as possible after the initial cut, however can be stored up to two months under the right conditions during March/September (the growing season);
- Turf transfer will not be undertaken in periods of hot and dry conditions or sub-zero conditions to avoid desiccation or frost damage; and
- Turves will be monitored and watered during dry and windy spells to ensure they remain viable and do not desiccate.





Legend:

- Onshore Development Area
- Draw Pit Locations
- Centre of Works
- Compound
- HDD Borehole (option)
- Designated Sites Study Area (2 km buffer)
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)

Phase 1 Habitat

- Improved Grassland
- Poor Semi-Improved Grassland
- Unimproved Neutral Grassland
- Maritime Cliff and Slope

Morlais Botanical Survey Quadrat Locations

- Quadrat locations in scrub (S)
- Quadrat locations in unmanaged grassland (U)
- Quadrat locations in mown grassland (E/W = east/west field)

Client: morlais / MENTER MÔN

Project: morlais — ANGLESEY MARINE ENERGY

Title:

Location of Cable Route and Draw Pits

Figure: 2

Drawing No: PB5034-POE-019-050

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	16/09/20	GC	GC	A3	1:1,000

Co-ordinate system: British National Grid

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Turf management would also be undertaken throughout the onshore works where practicable. For the construction phase of the project, a detailed Materials Management Plan will be developed by the contractor and submitted for acceptance by the client. All construction works will be programmed and undertaken to meet any planning and environmental constraints that are imposed on the works. It is however anticipated that the works will be phased to minimise environmental impact and disruption to local receptors. Construction of the works will be phased to suit available land take (e.g. stockpile and laydown areas) which will accommodate the temporary storage of turf as required.

Soil management

A SMP would be produced as part of the CoCP by a competent soil science contractor and agreed with the IoACC (and NRW applicable). This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP will include, but not be limited to, the following measures:

- The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement;
- Topsoil from unimproved or semi-improved areas will be kept separate from improved topsoil;
- Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location;
- Protocols for works in wet weather to minimise accumulation of mud within the working corridor and runoff into the SAC / unimproved neutral grassland; and
- The setting of vehicular speeds along the construction access routes to minimise soil compaction.
- Any stockpiles of excavated material shall be covered, seeded or fenced to prevent wind whipping or wind/water erosion.
- Where surface vegetation has been removed, this will be reseeded to prevent future runoff.

Ecological Action Plan

The Ecological Action Plan (EAP) will include the relevant habitat management measures and will detail:

- A defined area which will be subject to the plan;
- The scope and methodology for all pre-construction surveys;
- Details of suitable planting and ground preparation and planting methodology;
- Details of any post-creation monitoring surveys, reporting and reviewing required;
- A schedule/programme for delivery of the plan;
- Responsibilities attributed to the relevant parties to deliver the plan; including creation, maintenance and monitoring of the new habitat; and
- Consideration of the future of the new habitat following decommissioning of the landfall Substation site.
- This plan will be developed in consultation with the relevant stakeholders and should be complimentary to other proposed mitigation measures

Residual impacts

Under the secondary option, i.e. open cut trenching, following the implementation of mitigation including undertaking pre-construction surveys to aid micrositing, seed collection soil and turf management vegetation on the neutral grassland is expected to recover over a number of seasons (approximately five to ten years, Natural England, 2007) and will be monitored through post construction surveys with

consultation with NRW of results. The potential impacts associated with construction upon sensitive habitat outwith the designated site is anticipated to be reduced to **minor adverse.**

Indirect impacts

There is potential for indirect impacts to occur should surface water run-off of sediments occur from the construction footprint, including stockpiles of excavated material during the trenching activities, and contaminate or smother highly sensitive maritime grassland at the coast. Impacts associated with run off are considered to be of up to negligible magnitude with effects occurring in the long term due to poor rates of recovery of sensitive habitats in stressful environmental conditions at the coast. This is anticipated to be of up to **minor adverse** significance, depending in the amount of habitat affected. Embedded mitigation measures include adherence to all relevant industry best practice to manage the accidental release and control of material, including run-off. Additional mitigation measures are discussed below.

A water resources assessment has been undertaken and is presented in Chapter 17, Water Resources and Flood Risk of the Morlais ES. The assessment concluded no significant impacts. There is no hydrological connection to the protected sites in terms of surface water, and the excavations are shallow enough to have no significant impact on groundwater flow. As such, there is not anticipated to be any hydrological impacts which may affect the habitats or species at the coast.

Additional Mitigation

Control of sediment supply

Measures contained within the CoCP and the PPMP will be designed to limit the potential for dispersal and accidental releases of potential contaminants, soil derived dusts and uncontrolled run-off to occur during construction. The CoCP and the PPMP would be developed for the construction activities which will adhere to all relevant legislation and industry good practice guidance as detailed in NRW's series of Sector Guidance Notes (SNG) and Technical Guidance Notes (TNG) to advise operators on standards for operational and environmental performance. There are regularly updated, and a list will be compiled prior to commencement of construction to ensure currency of advice. Areas covered by the notes will include:

- Guidance for storage and handling of materials,
- Guidance for site drainage and effluent management; and
- Guidance on environmental best practice.

Best practice measures from Construction Industry Research and Information Association (CIRIA)'s 'Control of water pollution from construction sites: Guidance for consultants and contractors (C532)' (2001) will also be implemented with agreement from NRW.

The PPMP will include the following:

- Subsoil exposure would be minimised, and strips of undisturbed vegetation would be retained on the edge of the working area where possible;
- On-site retention of sediment would be maximised by routing all drainage through the site drainage system;
- The drainage system would include measures to intercept sediment runoff at source. Suitable filters would be used to remove sediment from any water discharged into the surface drainage network;
- Additional measures would be included in parts of the working area that are in proximity to surface drainage channels;
- Soil and sediment accumulation on road surfaces would be minimised as reasonably practicable by cleaning the wheels of vehicles leaving site and, where required, clearance of the road surface. Traffic movement would be restricted to minimise the potential for surface disturbance;

- The works area would aim to avoid water resources and flood risk receptors wherever possible.
- The CMS will set out how material is to be excavated and stockpiled to minimise the potential for run-off, soil degradation or wind dispersal of dusts, including consideration of local natural drainage to enable the precise location of stockpile material to drain into local natural soil drainage system;
- The covering of long-term stockpiles with sheeting or the binding of the surface through temporary grass seeding will be specified together with dampening procedures during dry weather.
- In the event of uncontrolled releases occurring, the CMS and the Contractor's own method statements contained in their Construction Phase Plan (CPP) would also set out the measures required to ensure that the extent and impact of any such releases are contained and ultimately remediated.
- Construction materials and spoil materials will be positioned in a manner that does not constrain potential flood waters unduly or direct flood waters towards habitats of high sensitivity.
- Construction will not be undertaken during very extreme wet weather where erosion of sediments and risk from flooding may increase.
- The avoidance of soil compaction through the use of Low Ground Pressure (LGP) tracked or wheeled tyres to spread the weight of vehicles, limiting the height of soil stockpile mounds, restricting construction traffic to specific areas on the construction working width.

Further details on mitigation for release of contaminants is provided in Chapter 18 Ground Conditions and Contamination of the Morlais ES.

Soil management Plan
A SMP would be produced as part of the CoCP by a competent soil science contractor and agreed with the IoACC (and NRW as applicable). This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP will include, but not be limited to, the following measures:

- The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement;
- Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location;
- Protocols for works in wet weather to minimise accumulation of mud within the working corridor and runoff into the SAC / unimproved neutral grassland; and
- The setting of vehicular speeds along the construction access routes to minimise soil compaction.
- Any stockpiles of excavated material shall be covered, seeded or fenced to prevent wind whipping or wind/water erosion.
- Where surface vegetation has been removed, this will be reseeded to prevent future runoff.
- This plan will be developed with the relevant stakeholders and should be complimentary to other proposed mitigation measures

Residual impact
Following implementation of the mitigation measures to protect stockpiles and other areas of the construction site from run-off impacting upon the sensitive coastal habitats, including the designated site, the potential for a pathway of impact is greatly reduced and therefore potential indirect impacts associated with run-off will be **negligible** in significance.

6.3 Potential operation and maintenance impacts on Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC

6.3.1 Preferred Option: HDD at landfall

Under the preferred option, there will be no pathway for impact and therefore **no direct impact** to the designated site during operation and maintenance.

Mitigation
None required

Residual Impact
There will remain to be **no direct impact**.

6.3.2 Secondary Option: Trenching at landfall

The J-tubes will be designed such that the structures are able to support maintenance activities without touching the cliff and therefore the habitat within the 2m working corridor is expected to recover following construction and not be further impacted by maintenance activities, which are likely to be required every 5-10 years. There may be a shading or a sheltering effect which might lead to the growth of different plants, not normally part of the vegetated sea cliff community but as the cliff faces a sunny south-west aspect effects of shading are likely to be limited in extent.

A reduced influence of salt spray will occur within the footprint of the cable chute, as this will provide protection/ cover across much of its footprint, although gaps will remain of 500mm between cables where some limited salt spray influence may occur. There will be limited shading and no loss of salt spray influence in the working area either side of the chute. There will be, at worst case, loss of epilithic lichens within the whole footprint. Disturbance by seabirds, essential for ephemeral sea cliff plant species could continue to take place within the working footprint (though not during temporary maintenance activities whilst maintenance activities take place on the cliff). This impact would be reversable upon decommissioning and recovery, however as this is likely to be in excess of 40 years (project life of 37 years plus recovery of 5-10 years). Overall, the impact is anticipated to be **minor adverse** in significance, which is not significant in EIA terms.

Mitigation
Under the secondary option, i.e. trenching, beyond the measures already made to avoid and minimise direct impacts upon the SAC/SSSI features through micrositing, reduction of footprint and adaptation of methods to be used during construction and maintenance, no further mitigation is proposed.

Residual Impact
The impact to the designated feature of the SAC/SSSI therefore remains **minor adverse** in significance during construction, operation and decommissioning phases. Works to undertake biodiversity net gain will be reliant upon further survey and consultation with IoACC and NRW.

6.4 Potential operation and maintenance impacts on sensitive grasslands outwith the boundary of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC

6.4.1 Preferred Option: HDD at landfall

Under the preferred option, there will be no pathway and therefore impact to the neutral grassland during operation and maintenance.

Mitigation
None required

Residual Impact
There will remain to be **no direct impact**.

6.4.2 Secondary Option: Trenching at landfall

As the man hole covers for the nine draw pits will be left in place for access, activities associated with operation and maintenance will be considerably less than those associated for construction. Temporary lay down areas may be required for plant and equipment, which would be stored within the footprint identified for construction and not upon sensitive habitat. There is not anticipated to be excavation works associated with operation and maintenance. As such the magnitude of effect is considered to be negligible and the impact is assessed to be of **minor adverse** in significance.

Mitigation
Pre-construction survey
Prior to any works which may disturb habitats, further detailed botanical survey work will be undertaken to record the presence and extent of spatulate (South Stack) fleawort, golden-hair lichen and spotted rock-rose (and other areas of botanically rich vegetation) so that minimal impacts to these species and their associated habitats can be experienced. Such survey work should be carried out in May or June when fleawort is in flower to aid with micrositing activities. The design of the survey will be undertaken in consultation with the IoACC and NRW and will take the form of a Phase II National Vegetation Classification Survey (by NRW approved contractors with relevant qualifications and experience in surveying vertical cliff face vegetation) and will extend at least 20m from the cliff top inland and finish at break of slope on the seaward side. Fixed point photographs will be used as part of the survey procedure. Survey on the cliff may be undertaken by drone, supplemented by a roped-access botanical survey by suitably-qualified botanist to allow for identification of small specimens of rare plants. This will also include photography of the cliff face to provide an understanding of density of the plant growth.

Seed collection and habitat restoration
Seed collection will be undertaken in late summer / autumn prior to construction from the areas of unimproved neutral grassland habitat. In some areas it may be preferable to reseed using material collected using a flail mower collector from local heathland, as clifftop neutral grassland has been previously mapped as heathland by CCW's Phase 1 surveyors (NRW, pers comm) and therefore the clifftop habitat may be a heath/neutral grassland mosaic. NRW have expressed preference to restore to heath in such case. The Botanical Survey (Document MOR-BSG-DOC-0001) recorded a fine mosaic of grassland (MC9 community) and scrub (W22 community) habitat at the top of the cliff within the SAC/SSSI boundary, dominated by western gorse interspersed with blackthorn. Bramble *Rubus fruticosus agg*., bracken *Pteridium aquilinum*, honeysuckle *Lonicera periclymenum*, sorrel *Rumex acetosella*, red campion *Silene dioica* and cock's-foot were also present in amongst the scrub. The western part of the cliff top was

recorded to be more open, and in addition to western gorse supported a greater range of species, similar to those that occur on the front face of the sea cliffs (including thrift, sea plantain *Plantago maritima*, buck's-horn plantain, sea campion, bird's-foot trefoil, kidney vetch, wild carrot, sheep's-bit, cat's-ear, and English stonecrop). Some heather *Calluna vulgaris* and thyme *Thymus polytrichus* was also present. Mentor Mon propose to restore the scrub/grassland mosaic habitat at the top of the cliff within the boundary of the SAC/SSSI (**Figure 2**) and the Onshore Development Area with heath species to support restoration of the heath habitat in this area, subject to agreement with NRW. All collected seeds will be suitably stored and used to aid habitat replacement on completion of the works and within the agreed areas. It is accepted that the seeds may not be successful in establishing. All replanting will comprise species suitable to the area, particularly near the boundary of the SAC. Monitoring of the replanted areas will be undertaken to understand the diversity that returns, and results will be provided to NRW. Grassland outwith the boundary of the SAC/SSSI is currently managed by mowing, and the construction works outwith the SAC/SSSI boundary will be restored in line with the TMP detailed below.

Turf management Plan

A TMP will be created and included within the CEMP for habitats outwith the SAC/SSSI boundary. Works to install the J-tubes on the cliffs have been designed to be undertaken manually to minimise the disturbance and removal of cliff vegetation, however the worst case assumes the disturbance / loss of all vegetation within the corridor of works on the cliffs. Re-turfing of the works within the SAC is considered to not be possible due to the steepness of the terrain and the fragility/thinness of associated soils. In addition, the stressful environmental conditions would reduce the likelihood of replaced vegetation establishing, and as monitoring is proposed to take place approximately every 5 years, there is potential for more disturbance to occur before the habitat has recovered. Therefore, no habitat replacement is proposed upon the cliffs within the SAC.

Soil depths at the top of the cliff are currently unknown but are considered to be shallow. The success of a turf management regime is therefore currently unknown, however if it is practicable to do so, the following turf management will be implemented.

Turf removed at the top of the cliff will be carefully managed to allow for reinstatement upon completion of the works. This will include the following measures:

- Stripped turves will be stored (labelled) within the stockpiling areas 'vegetation or turf side up' with adequate growing conditions e.g. water (including during dry or windy conditions), light and temperature;
- Turves will be protected through temporary fencing to prevent vehicles driving on the edge of them;
- Turves will not be stored on good quality habitat;
- Turves will be re-used in areas with similar vegetation and hydrology;
- Turves should be replaced as soon as possible after the initial cut, however can be stored up to two months under the right conditions during March/September (the growing season);
- Turf transfer will not be undertaken in periods of hot and dry conditions or sub-zero conditions to avoid desiccation or frost damage; and
- Turves will be monitored and watered during dry and windy spells to ensure they remain viable and do not desiccate.

Turf management would also be undertaken throughout the onshore works where practicable.

Turf management would also be undertaken throughout the onshore works where practicable. Stockpile areas have been designed to ensure enough space for turf storage.

Soil management Plan
A SMP would be produced by a competent soil science contractor and agreed with the IoACC (and NRW as applicable). This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. A consideration of soil management required under operational conditions will be included as part of the overall project SMP.

Habitat Management Plan
The habitat management plan will be agreed with NRW and IoACC and will be included within the EAP and will include consideration of the habitat management actions which may be required under operational conditions.

Residual impacts
Under the secondary option, i.e. open cut trenching, following the implementation of mitigation including undertaking pre-construction surveys to aid micrositing, seed collection soil and turf management vegetation on the neutral grassland is expected to recover over a number of seasons (approximately five to ten years, Natural England, 2007) and will be monitored through post construction surveys with consultation with NRW of results. The potential impacts associated with construction upon sensitive habitat outwith the designated site is anticipated to be reduced to **negligible.**

6.5 Potential decommissioning impacts on Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC

All decommissioning mitigation will be reviewed and updated using best practice guidance at the time of decommissioning activities.

6.5.1 Preferred Option: HDD at landfall

Under the preferred option, there will be no pathway and therefore impact to the designated site during decommissioning.

Mitigation
None required

Residual Impact
There will remain to be no direct impact.

6.5.2 Secondary Option: Trenching at landfall

As discussed above, as decommissioning activities are anticipated to be undertaken on the cliffs with the decommissioning work footprint to remove J-tubes. Taking a worst case, it is possible that decommissioning works may affect 0.046% of the vegetated sea cliff designated feature of the SAC (although some of this area will not be vegetated, due to the presence of anchor bolts for the J-Tubes). As outlined above, this footprint is assessed an effect of negligible magnitude on the designated cliff feature. This impact would be reversable upon decommissioning however given the stressful environmental conditions and the marginal nature of the habitat, recovery is likely to be slow and is assumed to take place over 5-10 years. Overall, the impact is anticipated to be **minor adverse**, which is not significant in EIA terms.

Mitigation
Mitigation deployed during construction will also be deployed during decommissioning.

The decommissioning plan will be approved by NRW (or equivalent at time of decommissioning) in advance, taking account of latest information and designations at the site.

The footprint of temporary habitat disturbance on the cliff due to scuffing during decommissioning will be up to 2m either side of the J-tube corridor. The worst-case assessment assumes habitat loss would occur in the entire corridor during decommissioning however, because the J-tubes would be removed carefully by hand, there are likely to be large areas of vegetation, roots and seedbank which will persist and grow, therefore being retained within the working corridor. It is expected that the scuffing does not strip the entire temporary working corridor of vegetation and therefore the realistic scenario is likely to be less than the conservative worst-case scenario presented.

A suitably qualified and NRW approved ECoW will be present on the cliff face using roped access for all cliff works activities. The ECoW will provide a toolbox talk briefing to all relevant decommissioning personnel on the importance of the designated sites and associated features, and will provide guidance and instruction to the decommissioning team working within the SAC/SSSI boundary and the cliff on avoidance of all protected or notable species where possible to minimise the loss of plants from the cliff. Clumps of notable or protected species will be highlighted to construction personnel for avoidance where possible. Works will not be undertaken in strong winds or adverse weather conditions to minimise risk of accident on the cliff.

NRW (or equivalent statutory consultee at the time of decommissioning) will be consulted for approval of the decommissioning plan prior to decommissioning commencing.

Residual Impact
The impact to the designated feature of the SAC/SSSI therefore remains **minor adverse** in significance during construction, operation and decommissioning phases. Works to undertake biodiversity net gain will be reliant upon further survey and consultation with IoACC and NRW.

6.6 Potential decommissioning impacts on sensitive grasslands outwith the boundary of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC

6.6.1 Preferred Option: HDD at landfall

Under the preferred option, there will be no pathway for impact to the neutral grassland during decommissioning.

Mitigation
None required

Residual Impact
There will remain to be no direct impact.

6.6.2 Secondary Option: Trenching at landfall

During decommissioning, chamber covers to the draw pits will be removed and the voids backfilled and covered with topsoil and turf. Buried cables will not be excavated and therefore the footprint of decommissioning activities will be reduced from that which is required for construction. the magnitude of

impact is assessed to be low. As such, the impacts to the neutral unimproved grassland at the coast are assessed to be **moderate adverse**, which is significant in EIA terms.

Mitigation

Pre- decommissioning survey

Prior to construction, further detailed botanical survey work will be undertaken to record the presence and extent of spatulate (South Stack) fleawort, golden-hair lichen and spotted rock-rose (and other areas of botanically rich vegetation) so that minimal impacts to these species and their associated habitats can be experienced. Such survey work should be carried out in May or June when fleawort is in flower to aid with micrositing activities. It may not be possible to undertake this survey safely upon the cliffs themselves, in which case survey may be conducted by alternative methods, such as use of drones. The design of the survey will be undertaken in consultation with the IoACC and NRW.

Seed collection and habitat restoration

Seed collection will be undertaken in late summer / autumn prior to construction from the areas of unimproved neutral grassland habitat. In some areas it may be preferable to reseed using material collected using a flail mower collector from local heathland, as clifftop neutral grassland has been previously mapped as heathland by CCW's Phase 1 surveyors (NRW, pers comm) and therefore the clifftop habitat may be a heath/neutral grassland mosaic. NRW have expressed preference to restore to heath in such case. The Botanical Survey (Document MOR-BSG-DOC-0001) recorded a fine mosaic of grassland (MC9 community) and scrub (W22 community) habitat at the top of the cliff within the SAC/SSSI boundary, dominated by western gorse interspersed with blackthorn. Bramble *Rubus fruticosus agg*., bracken *Pteridium aquilinum*, honeysuckle *Lonicera periclymenum*, sorrel *Rumex acetosella*, red campion *Silene dioica* and cock's-foot were also present in amongst the scrub. The western part of the cliff top was recorded to be more open, and in addition to western gorse supported a greater range of species, similar to those that occur on the front face of the sea cliffs (including thrift, sea plantain *Plantago maritima*, buck's-horn plantain, sea campion, bird's-foot trefoil, kidney vetch, wild carrot, sheep's-bit, cat's-ear, and English stonecrop). Some heather *Calluna vulgaris* and thyme *Thymus polytrichus* was also present. Mentor Mon propose to restore the scrub/grassland mosaic habitat at the top of the cliff within the boundary of the SAC/SSSI (**Figure 2**) and the Onshore Development Area with heath species to support restoration of the heath habitat in this area, subject to agreement with NRW. All collected seeds will be suitably stored and used to aid habitat replacement on completion of the works and within the agreed areas. It is accepted that the seeds may not be successful in establishing. All replanting will comprise species suitable to the area, particularly near the boundary of the SAC. Monitoring of the replanted areas will be undertaken to understand the diversity that returns, and results will be provided to NRW. Grassland outwith the boundary of the SAC/SSSI is currently managed by mowing, and the construction works outwith the SAC/SSSI boundary will be restored in line with the TMP detailed below.

Turf management Plan

A TMP will be created and included within the CEMP for habitats outwith the SAC/SSSI boundary. Turf removed at the top of the cliff will be carefully managed to allow for reinstatement upon completion of the works. This will include the following measures:

- Stripped turfs will be stored (labelled) within the stockpiling areas 'vegetation or turf side up' with adequate growing conditions e.g. water (including during dry or windy conditions), light and temperature;
- Turves will be protected through temporary fencing to prevent vehicles driving on the edge of them;
- Turves will not be stored on good quality habitat;
- Turves will be re-used in areas with similar vegetation and hydrology;

- Turves should be replaced as soon as possible after the initial cut, however can be stored up to two months under the right conditions during March/September (the growing season);
- Turf transfer will not be undertaken in periods of hot and dry conditions or sub-zero conditions to avoid desiccation or frost damage; and
- Turves will be monitored and watered during dry and windy spells to ensure they remain viable and do not desiccate.

Turf management would also be undertaken throughout the onshore works where practicable.

Turf management would also be undertaken throughout the onshore works where practicable. Stockpile areas have been designed to ensure enough space for turf storage.

Soil Management Plan
A SMP would be produced by a competent soil science contractor and agreed with the IoACC (and NRW as applicable). This would be completed pre- decommissioning works once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP will include, but not be limited to, the following measures:

- The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement;
- Topsoil from unimproved or semi-improved areas will be kept separate from improved topsoil;
- Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location;
- Protocols for works in wet weather to minimise accumulation of mud within the working corridor and runoff into the SAC / unimproved neutral grassland; and
- The setting of vehicular speeds along the construction access routes to minimise soil compaction.
- Any stockpiles of excavated material shall be covered, seeded or fenced to prevent wind whipping or wind/water erosion.
- Where surface vegetation has been removed, this will be reseeded to prevent future runoff.

Habitat Management Plan
The habitat management plan will be agreed with NRW and IoACC and will be included within the EAP and will include:

- A defined area which will be subject to the plan (in consultation with NRW and IoACC);
- The scope and methodology for all pre-construction surveys;
- Details of suitable planting and ground preparation and planting methodology;
- Details of any post-creation monitoring surveys, reporting and reviewing required;
- A schedule/programme for delivery of the plan;
- Responsibilities attributed to the relevant parties to deliver the plan; including creation, maintenance and monitoring of the new habitat; and
- Consideration of the future of the new habitat following decommissioning of the landfall Substation site.
- This plan will be developed with the relevant stakeholders and should be complimentary to other proposed mitigation measures

Residual impacts

Under the secondary option, i.e. open cut trenching, following the implementation of mitigation including undertaking pre-construction surveys to aid micrositing, seed collection soil and turf management vegetation on the neutral grassland is expected to recover over a number of seasons (approximately five to ten years, Natural England, 2007) and will be monitored through post construction surveys with consultation with NRW of results. The potential impacts associated with construction upon sensitive habitat outwith the designated site is anticipated to be reduced to **minor adverse**.

7 Mitigation

The following additional mitigation measures are committed to and proposed to reduce potential impacts from construction, operation and maintenance and decommissioning upon onshore ecology receptors, with particular focus on the sensitive habitats at the landfall:

7.1 General terrestrial ecology mitigation as outlined within the ES:

The mitigation stated below is relevant to the whole Onshore Development Area:

- Prior to construction, further detailed botanical survey work will be undertaken to record the presence and extent of spatulate (South Stack) fleawort, golden-hair lichen and spotted rock-rose (and other areas of botanically rich vegetation) so that minimal impacts to these species and their associated habitats can be experienced. Such survey work should be carried out in May or June when fleawort is in flower. This survey work will support the decision of where the Onshore Cable Route is micro-sited to, enabling the footprint of overlap into the RSPB reserve to be minimised;
- An invasive non-native species survey will be undertaken prior to construction, to allow for any existing or stands to be treated prior to construction or fenced to avoid disturbance.
- An ECoW will audit the implementation of the Ecological Action Plan (EAP). Details of the ECoW along with their qualifications, licencing and contact details will be sent to NRW as soon as they are appointed for approval.
- Consultation with NRW and RSPB will be undertaken to agree the final micro-siting of the cable route.
- Toolbox talks will be delivered by the ECoW to all construction personnel starting work at the construction site, detailing the importance of the protection of the designated sites.
- A strict construction working footprint will be maintained
- Temporary fencing will be installed to physically delineate the rest of the designated site from the construction footprint;
- Materials and plant will be stored within the construction footprint on less sensitive habitat where possible;
- Habitats affected within and outwith the designated site will be combined within the habitat reinstatement plan; and
- A habitat re-instatement plan will be implemented upon completion of the works. Any replanting will comprise of species suitable to the area, particularly near the boundary of the SAC.
- Root protection areas in accordance with industry guidance will be fenced off during construction;
- A pre-construction assessment of all trees to be removed will be undertaken by a suitably qualified arboriculturist (and ecologist if required);
- Where hedgerows are disturbed, they will be replaced following completion of construction activities to the same quality or better, with native species of local provenance and suitable for the area. A nursery will be commissioned to grow this material specifically for the project as local provenance stock is unlikely to be widely available. The replanting plan will be detailed in the EAP and agreed with NRW and IoACC;

- To mitigate impacts to the open mosaic habitat at the aluminium works (discussed further within the ES), habitat reinstatement will be undertaken upon completion of the construction phase. This would involve the reinstatement of excavated material in a way that would provide low nutrient substrate suitable for ephemeral vegetation. The replanting plan will be detailed in the EAP. Since this area is subject to scrub encroachment it is possible that some localised disturbance will be beneficial (to reduce scrub and maintain patches of open habitat);
- Night-time lighting of construction sites should be avoided where possible. If night-time working is necessary, then lighting will be designed in accordance with Bats and artificial Lighting in the UK (BCT, ILE, 2018); and Guidance Notes for the Reduction of Obtrusive Light ILE (2011). This is likely to require:
    - No direct lighting of the woodland edges, scrub and hedgerow habitats, or historic roost site and use of dark buffer zones; and
    - Consideration of appropriate luminaire specifications, sensitive light configuration, screening, glazing, dimming and part-night lighting to minimise impacts;
- Scrub, hedgerow, marshy grassland and maritime cliff and slope habitat that cannot be avoided will be subject to pre-construction walkover habitat survey by experienced ecologist in advance of construction commencing to inform the habitat reinstatement plans.
- Habitat reinstatement will be undertaken following completion of construction, using native species of local provenance. A nursery will be commissioned to grow this material specifically for the project as local provenance stock is unlikely to be widely available. Landscaping plans will take into consideration of creation of breeding bird habitat. Under Option 2, any screening of the J-tubes will be undertaken using appropriate species to be in keeping with the existing habitats, for example dwarf shrubs of coastal heathland at the cliff top (it is acknowledged that these may offer limited screening potential);
- The location of the wild leek and small flowered catchfly will be clearly marked and identified with 5 m buffer fencing, and this area will be avoided during any construction work. This may require a bypass section of track to be temporarily constructed. For small flowered catchfly, due to its ephemeral nature, areas where this species was historically recorded shall also be protected in this way;
- Pre-construction checks for barn owl will include mature trees will be undertaken by an experienced ecologist to ensure no impacts occur to this species.

7.1.1 Update to mitigation proposed for Cloddiau / Hedgerows

In response to consultation undertaken with NRW, who raised concerns regarding the impacts associated with the removable and re-construction of cloddiau, trenchless methods will be now employed to cross under cloddiau to avoid direct impact to these features. Consequently, there will be **negligible** impact upon the cloddiau features.

Many of the hedgerows are recorded as species poor / defunct. Pre-construction, an assessment will be made of all hedgerows to be crossed. IoACC will be contacted for their records of important hedgerows during this process. Following this assessment, those hedgerows of ecological, landscape, heritage or other importance will be crossed using trenchless methods. This assessment will be agreed with NRW prior to construction.

7.1.2 Update to mitigation proposed for invasive non-native species

- An Invasive Species Management Plan will be prepared, focusing on the species listed on Schedule 9 of the Wildlife and Countryside Act, 1981, as amended which will include best practice

measures to be implemented to minimise the risk of construction activities spreading non-native invasive species;

- A toolbox talk detailing the importance of these plant species will be delivered by the ECoW to all personnel working on site;
- A pre-construction survey will be undertaken in summer months to ascertain up-to-date locations of any non-native invasive species within the Study Area. To date, Japanese knotweed was recorded during the Phase 1 Habitat Survey, *Oxalis articulata* was recorded within the Botanical Survey of Cliff Vegetation and NRW are aware of *Crocosmia* and *Hebe* plants to be present to the east of the preferred route;
- Known Japanese knotweed stands (and any other invasive non-native species subsequently recorded) in or within 10m of the Onshore Development Area will be treated during the season before construction work commences;
- *Oxalis articulata, Crocosmia* and *Hebe* plants within 10m of the Onshore Development Area will be eradicated following best practice guidelines prior to work commencing to avoid spreading fragments of vegetation within the designated sites;
- Any other invasive non native species identified within 10m of the Onshore Development Area will be eradicated / removed appropriately;
- An Invasive Species Management Plan will be included in the EMP which will detail the policies and good working practices which will be followed to avoid spread of an invasive non-native species; Mitigation measures including biosecurity protocols in the Invasive Species Management Plan will be carried across to the CoCP; and
- A fenced buffer of 10 m will be placed around strands of invasive species that have not been treated and are subsequently found on site after construction has begun.

8 Summary of impacts to Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC and neutral grassland habitat

A summary of impacts is provided in **Table 8.1**.

Table 8.1 Summary of impacts

Impact	Direct / indirect effects	Sensitivity	Magnitude	Significance	Mitigation	Residual impact
Construction						
Construction impacts to Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC	Preferred Option: HDD at landfall: direct impacts	High	No pathway	No impact	None required	No impact
	Preferred Option: HDD at landfall: indirect impacts	High	Negligible	minor adverse	Sediment supply management, soil management	Negligible
	Secondary Option: trenching at landfall: direct impacts	High	Low/ negligible	Minor adverse	Pre construction survey and ECoW on site	Minor adverse
	Secondary Option: trenching at landfall: indirect impacts	High	Negligible	minor adverse	Sediment supply management, soil management, DMP	Negligible
Potential construction impacts on sensitive grasslands outwith the boundary of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC	Preferred option: HDD at landfall: direct impacts	High	No pathway	No impact	None required	No impact
	Preferred Option: HDD at landfall: indirect impacts	High	Negligible	minor adverse	Sediment supply management, soil management, DMP	Negligible
	Secondary Option: trenching at landfall: Direct impacts	High	Low	Moderate adverse	Pre-construction surveys, seed collection and habitat restoration, soil turf and habitat management,	Minor adverse
	Secondary option: trenching at landfall: Indirect impacts	High	Negligible	minor adverse	Sediment supply management, soil management	Negligible
Operation and maintenance						

Impact	Direct / indirect effects	Sensitivity	Magnitude	Significance	Mitigation	Residual impact
Potential operation and maintenance impacts on Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC	Preferred option HDD at landfall:	High	No pathway	No impact	None required	No impact
	Secondary option trenching at landfall:	High	Low/ negligible	Minor adverse	No additional mitigation proposed	Minor adverse
Potential operation and maintenance impacts on sensitive grasslands outwith the boundary of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC	Preferred option HDD at landfall:	High	No pathway	No impact	None required	No impact
	Secondary option trenching at landfall:	High	Negligible	Minor adverse	Pre works surveys, seed collection, habitat management plan, soil turf and habitat management,	Negligible
Decommissioning						
Potential decommissioning impacts on Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC	Preferred option HDD at landfall:	High	No pathway	No impact	None required	No impact
	Secondary option trenching at landfall:	High	Low/ negligible	Minor adverse	Decommissioning plan, ECoW	Minor adverse
Potential decommissioning impacts on sensitive grasslands outwith the boundary of the Glannau Ynys Gybi /Holy Island Coast SSSI, SPA, SAC	Preferred option HDD at landfall:	High	No pathway	No impact	None required	No impact
	Secondary option trenching at landfall:	High	Low	Moderate adverse	Pre works surveys, soil turf and habitat management,	Minor adverse

Under the preferred option, should the landfall be undertaken using HDD technology, there will be no significant impacts to the Glannau Ynys Gybi / Holy Island Coast SAC/SSSI or the sensitive habitats at the coast.

Should HDD not be possible at landfall, the secondary option to trench the cables at the landfall and associated works at the cliffs results in a worst case impact of minor adverse significance upon a maximum 510 m^2 of cliff, equating to a maximum 0.046% of the designated feature within the SAC, which is not considered significant in EIA terms and is not further mitigatable. 330m^2 of this would be impacted in the long term within the footprint of the cables (0.029% of the designated feature within the SAC), with the remained affected during the project's construction and anticipated to subsequently recover. The Botanical Survey of Cliff Vegetation confirmed that approximately half of these footprints contains vegetated sea cliff habitat for which the SAC is designated, which equates to approximately 0.023% of the designated feature within the SAC affected in total, of which 0.015% of the designated feature within the SAC will be affected in the long term.

It is recognised that the cliff habitat is important and habitat enhancement of the cliff habitat is unlikely to be successful to the stressful environmental conditions along the Holy Island Coast. Menter Môn recognises the importance of the distinctive cliff habitat off Holy Island and commits to undertaking Biodiversity Net Gain as part of this project. Menter Môn would seek to undertake any discussions regarding net gain post-consent as part of the development of the Ecological Action Plan. This would include the calculation of biodiversity units using the information gathered in the Botanical Survey of Cliff Vegetation and agreeing the locations for suitable net gain with NRW and IoACC as part of the Ecological Action Plan.

9 HRA

This paper is intended to consider the EIA and to update the impact assessment made within the ES. This section of the paper also briefly considers and updates the HRA to take account of the Secondary option of installing cables down the cliffs as part of the trenching at landfall option.

It must be noted, as stated in document MOR/RHDHV/DOC/0067: Information to Support Habitats Regulations Assessment, should HDD (the preferred choice) be used as the landfall methodology, the Glannau Ynys Gybi / Holy Island Coast SAC and its qualifying features will be avoided entirely and therefore no Likely Significant Effect (LSE) associated with habitat loss screened out of further assessment under this option. Consequently, this section considers only the potential impacts to the Holy Island Coast SAC designated features arising from the implementation of the secondary cable installation option.

9.1 Conservation Management Plan

The overall vision for the SAC (CCW, 2008) are for the vegetated coastal cliffs to remain largely undisturbed and support the endemic South Stack fleawort and other notable plants. Also, that 70% of the SPA should be characterised by good quality lowland and coastal heath and that in some areas where there are rocky outcrops in heathland, the habitat should be favourable for the spotted rock rose which occurs in the thin crusts of soil with lichens and mosses and short grasses. Areas of herb rich neutral grassland may be maintained for their floristic, invertebrate and chough feeding value.

9.2 Conservation objections of the SAC

The Conservation Management Plan (CCW, 2008) breaks the conservation objectives into two elements:

1. Vision for the feature; and
2. Performance indicators (i.e. what is measurable).

The vision for Feature 1 (Vegetated sea cliffs of the Atlantic and Baltic coasts (including cliff & crevice vegetation, maritime grassland and maritime heath), including: Feature 9: Golden hair lichen *Teloschistes flavicans* Feature 10: *South Stack fleawort Tephroseris integrifolia ssp maritima* Feature 11: *Ciliate strap lichen Heterodermia leucolmelos* and Feature 12: *Cladonia peziziformis*) is for it to be in favourable conservation status, where all of the following conditions are satisfied:

- Cliff and crevice vegetation, maritime grassland and maritime heath occurs throughout the site in appropriate areas and their relative extent and zonation are determined by topography, exposure, grazing and natural stochastic events (e.g. storms).
- The cliff vegetation is composed of native plants such as sea spurrey *Spergularia rupicola* Sea lavenders (*Limonium britannicum, L procerum, L. binervosum*) and sea samphire *Crithmum maritimum*.
- Non-native plants, such as Hottentot fig *Carpobrotus edulis* or purple dew-plant *Disphyma crassifolium* are preferably absent or at least not spreading from their 2000 extent.
- Maritime Grassland occupies higher ledges on the coastal cliffs and the cliff-top.
- The following plants are common in the maritime grassland: red fescue *Festuca rubra*, thrift *Armeria maritima*; spring squill *Scilla verna* and sea plantain *Plantago maritima*
- Maritime Heathland occupies areas inland of the maritime grassland.
- The following plants are common in the maritime heathland: heather *Calluna vulgaris*; bell heather *Erica cinerea* Western gorse *Ulex gallii*, thrift Armeria maritima, sea plantain Plantago maritima, buck's horn plantain *Plantago coronopus* or spring squill *Scilla verna*.
- Competitive species indicative of under-grazing, particularly bracken *Pteridium aquilinum* and gorse *Ulex europaeus* and grass species indicative of improvement including creeping bent Agrostis stolonifera, cock's foot *Dactylus glomerata*, perennial rye-grass *Lolium perenne* and Yorkshire fog *Holcus lanatus* are largely absent from the heath.
- Sustainable populations of the plants which make up the Atlantic sea cliff rare plant assemblage will be present, notably, South Stack fleawort *Tephroseris integrifolia*, Sea lavenders (*Limonium britannicum, L. procerum, L. binervosum*) Golden hair lichen *Teloschistes flavicans* and Ciliate strap lichen *Heterodermia leucomelos*.
- All factors affecting the achievement of these conditions, including grazing intensity and burning, will be under control.

A number of performance indicators are outlined for the feature, including that there would be no anthropogenic activity that could alter the extent, that there would be no measurable decline in the mapped extent, there would be an absence of invasive alien species and monitoring of maritime heath and maritime grassland would be undertaken by rapid condition assessment.

9.3 Potential impacts to the conservation objectives

The primary option for construction is to install cables beneath the cliff using HDD techniques, which will result in no direct effects on the features of the SAC. If this is not possible, the secondary option of cable installation across the SAC involves installing cables using trenching techniques at the cliff top, and installing cable within 'J-Tubes' affixed to the cliff face. The construction methodology will use a platform which may result in disturbance and physical damage to the vegetated sea cliff habitat in worst case scenario within the approximately 7m-wide J-Tube installation working corridor and within the 2m wide working buffer either side, however the habitats within the 2m working buffer are expected to recover following construction works. There may be differential shading different to the surrounding unaffected cliff,

but these is not anticipated to extend beyond the 2m working buffer either side of the cables. Measures have already been made to minimise impacts to the SAC feature further, through micrositing, minimising footprint, supervision by ECoW, a revised maintenance regime to remove potential effects during maintenance, keeping the cables off the cliff face where possible, drilling in rock anchors to avoid impact on natural cliff processes, drainage and soil formation behind the cables.

In the ES the area of SAC that was considered likely to be affected under the secondary cable installation option was up to 31,700m^2. Following discussions with stakeholders the design envelope for this option has been refined to enable a much reduced footprint of impact. In the revised secondary option (cable trenching), the area of SAC qualifying habitat within the designation boundary to be affected is, as a worst case, 510 m^2, comprising of vegetated sea cliff, neutral grassland and intertidal habitat. This is a substantial mitigation through design refinement to reduce the area of impact to the features of the Glannau Ynys Gybi / Holy Island Coast SAC. Under the updated design following micrositing, the area of vegetated sea cliff habitat to be lost for the duration of the project lifetime (37 years, plus recovery time post decommissioning) within the footprint of the affected area will be approximately 0.029% of the vegetated sea cliff feature (330m^2) within the SAC along with 0.016% (180m^2) of sea cliff within the footprint of temporary works during construction. Furthermore, micrositing which has been undertaken following the Botanical Survey of Cliff Vegetation in 2020 has reduced these footprints down by approximately 50%, by avoiding areas of vegetated sea cliff habitat as far as possible, by prioritising works on bare rock.

All wet and dry heath designated habitat has already been avoided in the design of the Onshore Development Area.

In summary, under a precautionary worst case, approximately 0.046% of the qualifying vegetated sea cliff habitat of the SAC will be subject to long term temporary effects. Due to the small scale of the footprints affected, the works are not anticipated to give rise to any fragmentation of habitat or to affect the wider SAC habitat beyond the works footprint. Given the marginal nature of the environment (i.e. subject to salt spray and exposed conditions), habitat recovery following works is expected to be slow, approximately 5-10 years, although as the habitat is located within a dynamic geological environment which is subject to natural change through crumbling/rockfall and therefore undergoes regularly recovery, and the surrounding habitat is not affected, recovery is expected to occur successfully over time. As the area of habitat affected is of sufficiently small scale to not affect the overall functioning of the habitat within the SAC, such a small scale loss will not result a significant effect on the extent of the feature and will not give rise to an adverse effect on the integrity (AEOI) of the Glannau Ynys Gybi / Holy Island Coast SAC.

During the Botanical Survey of Cliff Vegetation, the non-native species *Oxalis articulata* was recorded in the grassland above the cliff. A pre-construction survey will be undertaken in the summer months prior to construction commencing and if this plant is recorded within 10m of the footprint of works it will be eradicated prior to works commencing to avoid spreading vegetation fragments within the Holy Island Coast SSSI/SAC/SPA.

10 Conclusions

A number of issues were raised by NRW and RSPB on the assessments for the onshore ecology within the ES and HRA documents. Many related to the lack of information clarity around proposed landfall activities and their potential impacts on designated sites and sensitive habitats. Following this, the methodologies that would be implemented at landfall have been considered further, with the aim to minimise impacts to designated sites through avoidance, reduction and design.

Under the preferred option of HDD at the landfall, there will be no direct impacts to the Glannau Ynys Gybi / Holy Island Coast SAC/SSSI and any potential indirect impacts will be mitigated and managed through agreed management plans. For clarity, the decision as to whether HDD would be possible will be confirmed prior to construction.

Should HDD not be possible, the secondary option of trenching at landfall will be required to bring cables ashore. Following mitigation, impacts to the vegetated sea cliffs designated feature of the Glannau Ynys Gybi / Holy Island Coast SAC/SSSI are considered to be long term minor adverse in significance for the life of the project plus recovery of vegetation, which is not considered significant in EIA terms. A shadow HRA has been undertaken with respect to the SAC. The effects on SAC vegetated sea cliff habitat, which constitutes effects on 0.046% of the habitat within the SAC, would persist from construction for the duration of the project (37 years plus recovery time post decommissioning). This effect on the vegetated coastal cliffs is of sufficient small scale that there will be no significant change in extent of the qualifying features of the SAC in line with the conservation objectives, therefore an adverse effect on integrity of the Glannau Ynys Gybi / Holy Coast SAC site can be ruled out.

Following the IEMA guidance for the EIA Regulations the impact would be considered to be long term, however it must be recognised that, with respect to the Habitat Regulations, whilst the impact would persist through the construction and operation phases, habitat recovery is expected be possible and should commence after decommissioning.

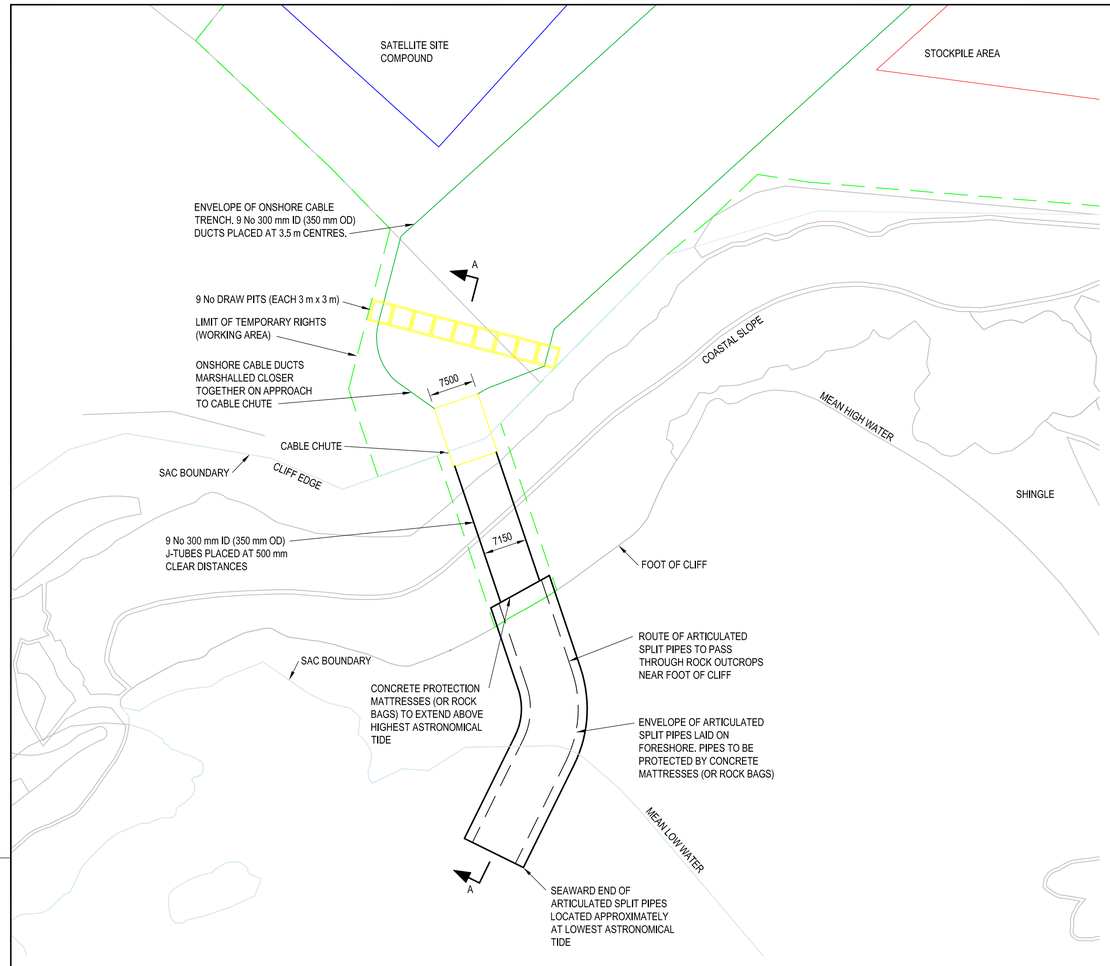
All other potential impacts have been reduced through mitigation or by refinement of the project design to be at worst minor adverse in significance, and not significant under EIA terms. They are also not considered to be likely to have an adverse effect on the SAC or its features.

11 References

Countryside Council for Wales (2008) Core Management Plan including Conservation Objectives for Glannau Ynys Gybi SAC and Glannau Ynys Gybi SPA, incorporating Glannau Ynys Gybi: Holy Island Coast SSSI, Tre Wilmot SSSI and Glannau Rhoscolyn SSSI. Available at: https://naturalresources.wales/media/672152/Glannau%20Ynys%20Gybi%20WES%20Plan%20English.pdf

Institute of Air Quality Management (IAQM) (2014) Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management, London. www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf

Appendix A: Drawings



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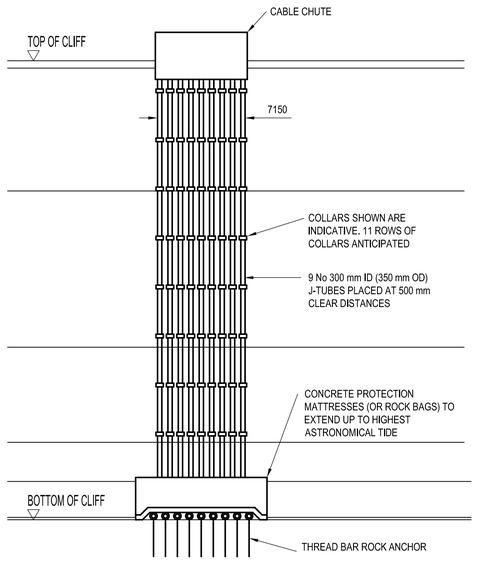

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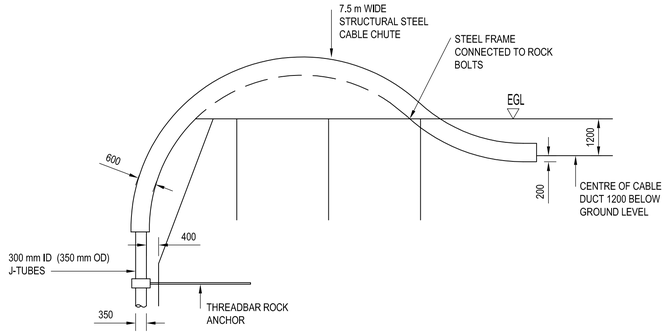

CABLE CHUTE DETAIL
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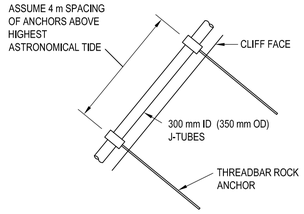

J-TUBE DETAIL
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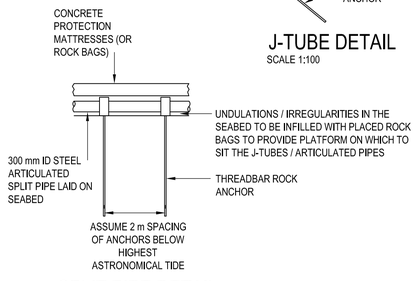
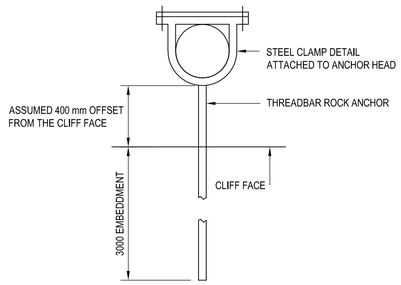
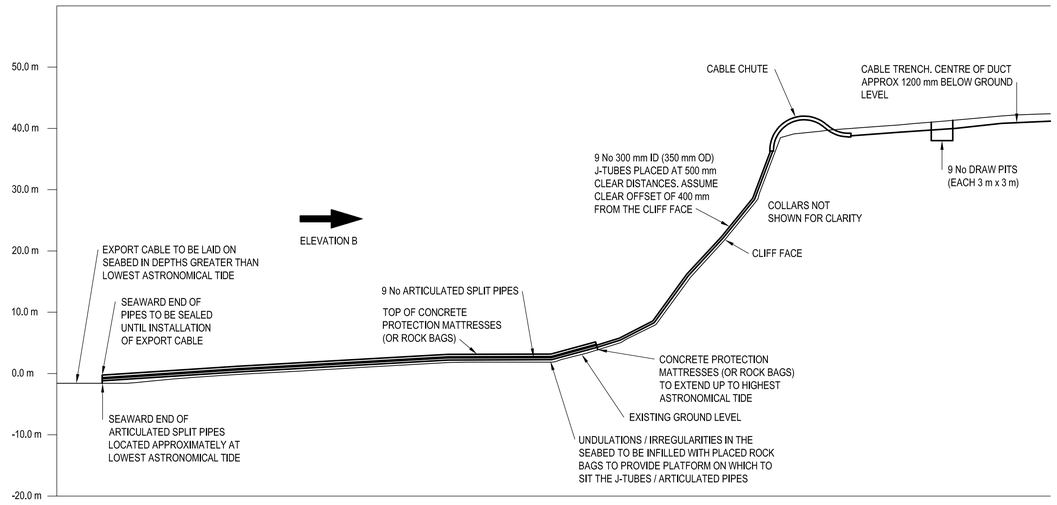


SPLIT PIPE DETAIL
SCALE 1:100



CLAMP DETAIL
SCALE 1:20



SECTION A-A
SCALE 1:500

BV PROJECT NUMBER :

Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

NOTES:

1. SCHEME ARRANGEMENT IS INDICATIVE.
2. SERVICES NOT SHOWN.
3. LOCATION OF BURIED CHAMBERS SUBJECT TO CHANGE.
4. INTERNAL DIMENSIONS OF BURIED CHAMBERS DEFINED.
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6. ID = INTERNAL DIAMETER, OD = OUTER DIAMETER.
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8. SPECIAL AREA OF CONSERVATION BOUNDARY LINES PROVIDED BY ROYAL HASKONING DHV.
9. CONNECTION BETWEEN CABLE CHUTE AND ROCK BOLTS SUBJECT TO FURTHER DESIGN STUDIES.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER
CONSTRUCTION :
MAINTENANCE, CLEANING AND OPERATION :
DECOMMISSIONING OR DEMOLITION :

500mm 0mm 500mm 1000mm
Scale 1:20

4m 3m 2m 1m 0m 2m 4m
Scale 1:100

5m 0m 5m 10m 15m
Scale 1:250

10m 0m 10m 20m 30m
Scale 1:500

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P01	MH	ALJ	TB	TB	22/01/20	
P02	MH	DM	ALJ	TB	13/02/20	ISSUED FOR INFORMATION

Designed by: Date:

Status
S2 Suitable for Information

Client

MENTER MÔN

Client Drawing No. | Revision

BLACK & VEATCH

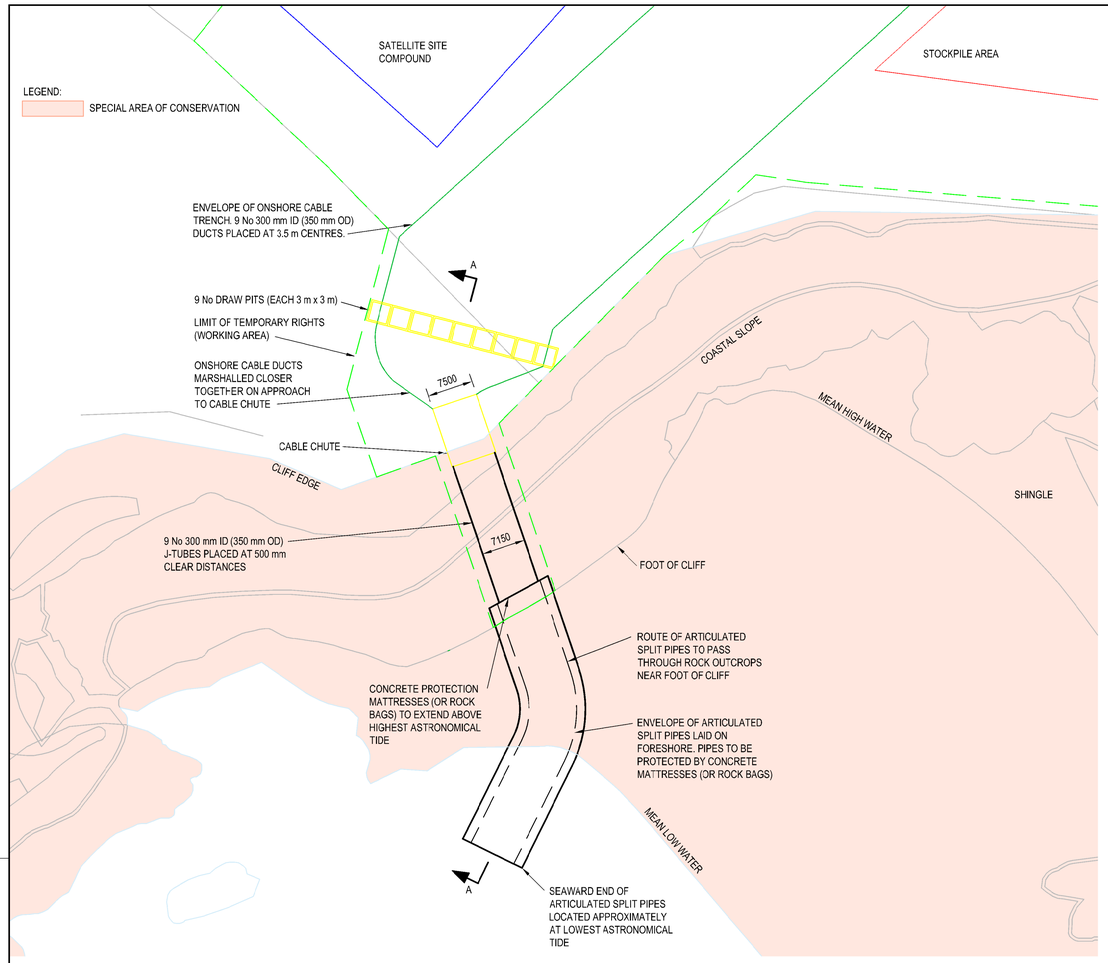
Black & Veatch Limited
60 High Street, Redhill, Surrey, RH1 1SH. United Kingdom
Tel: +44(0)1737 774155

Project
R12 MORLAIS DEVELOPMENT ZONE

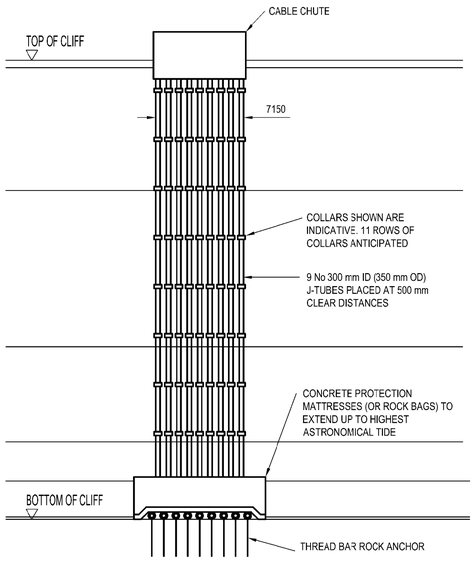
Drawing title
LANDFALL
TRENCH CABLE OPTION
CLIFF FACE ATTACHMENT

Drawing scale: AS SHOWN Sheet size: A1

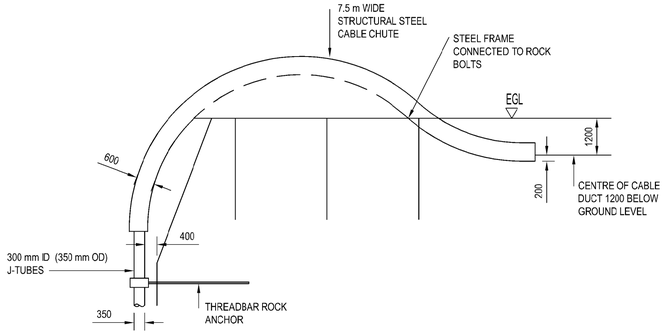
Drawing no. 122938-BVL-Z0-00-DR-C-00600 | Revision P02



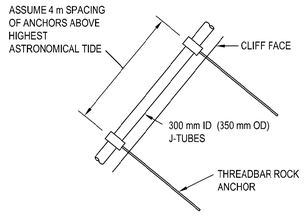
PLAN
SCALE 1:500



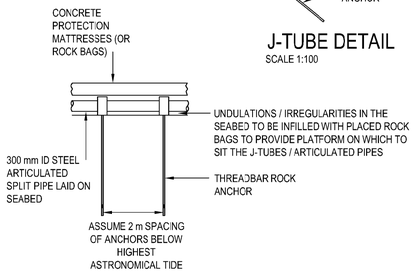
ELEVATION B
SCALE 1:250



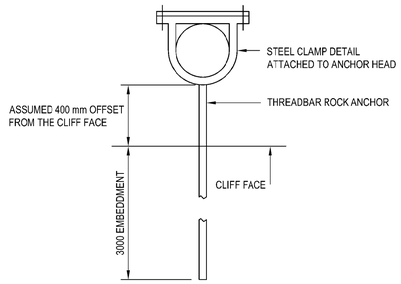
CABLE CHUTE DETAIL
SCALE 1:100



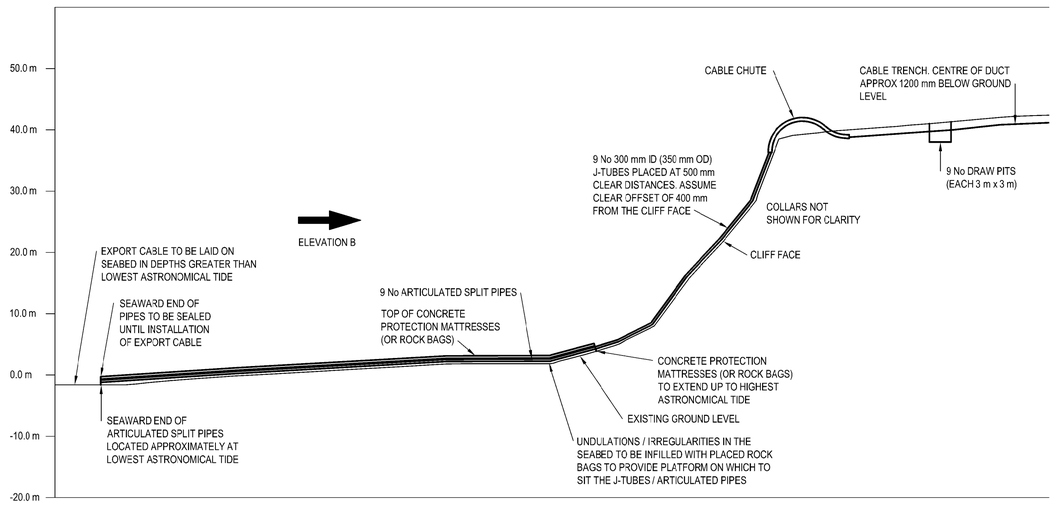
J-TUBE DETAIL
SCALE 1:100



SPLIT PIPE DETAIL
SCALE 1:100



CLAMP DETAIL
SCALE 1:20



SECTION A-A
SCALE 1:500

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Scale 1:500

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P01	MH	ALJ	TB	TB	22/01/20	
P02	MH	DM	ALJ	TB	13/02/20	ISSUED FOR INFORMATION
P03	MH	DM	ALJ	TB	25/03/20	0 0 0

Designed by: Date:

Status
S2 Suitable for Information

Client

MENTER MÔN

Client Drawing No. | Revision

BLACK & VEATCH

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60 High Street, Redhill, Surrey, RH1 1SH. United Kingdom
Tel: +44(0)1737 774155

Project
R12 MORLAIS DEVELOPMENT ZONE

Drawing title
LANDFALL
TRENCH CABLE OPTION
CLIFF FACE ATTACHMENT

Drawing scale: AS SHOWN Sheet size: A1

Drawing no. 122938-BVL-Z0-00-DR-C-00600 | Revision P03

BV PROJECT NUMBER :