The Secretary
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902



30 June 2020

Dear Sir

**Referral of Section 5 Declaration**
**Roscommon County Council Reference: DED 383**

## 1. Introduction

This referral to An Bord Pleanála, pursuant to Section 5 (3)(a) of the Planning and Development Act 2000 (as amended), has been prepared by IMG Planning Limited of 75 Fitzwilliam Lane, Dublin, D02 AK77, on behalf of Power Capital Renewable Energy Limited of 2 Merrion Place, Dublin, D02 XW71, and relates to a Section 5 Declaration issued by Roscommon County Council on 4 June 2020, in respect of the construction of an underground 20kV medium voltage cable within the public road between a permitted solar farm at Creevyquin (PD/17/28) and the 38kV Roscommon substation.

We request that An Bord Pleanála review the Section 5 Declaration issued and make a determination that the construction of the proposed cable does constitute exempted development.

The prescribed fee of €220 is enclosed along with a copy of the Declaration issued by Roscommon County Council. This referral sets out the rationale for the proposal being deemed exempted development. We request that An Bord Pleanála set the County Council's decision and issue a declaration that the proposed development constitutes exempted development.

We submit at the outset that pursuant to Part 1 of Schedule 2 of: Exempted Development – General, of the Planning and Development Regulations 2001 (as amended) the proposed development constitutes exempted development.

## 2. Section 5 Declaration issued by Roscommon County Council

On 4 June 2020 Roscommon County Council issued a Declaration that "the underground 20kV medium voltage cable within public road between permitted solar farm (PD/17/28) and 38kV Roscommon substation constitutes development that is not exempted development as defined in the Planning and Development Act 2000 (as amended) and associated Regulations".

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The reasons for the County Council's decision are:

- The likelihood of significant effects from the proposed development on the conservation objectives of European sites, in particular Lough REE SAC and Lough Ree SPA cannot be excluded and a Stage 2 AA is required, therefore, in accordance with Section 4(4) of the Planning and Development Act, 2000, as amended, the said works cannot avail of any exemptions that might otherwise be available under the Act, or under the Planning and Development Regulations, 2001 as amended.

- The possibility of the proposed development endangering public safety by reason of traffic hazard or obstruction of road users cannot be ruled out and therefore the said works cannot avail of any exemptions that might otherwise be available under Section 9 of the Planning and Development Regulations, 2001, as amended.

## 3. Proposed Development

The proposed development is located 1.3 kilometres north east of Roscommon Town. The proposed grid connection, which is approximately 1.96 kilometres in length, will transmit power from the on-site substation on the Creevy Solar Park that has been granted planning permission (Planning Reference PD/17/28) and will run underground in a cable route duct in a south westerly direction along the N63 from the Roscommon (Cloonybeirne) 38kV substation for ca.495 metres towards the local road L1811, then along the L1811 in a south-easterly direction for ca.1.27 kilometres before traversing 160 metres north into the Creevy Solar Park, where the cable will connect into the on-site substation.

The cable route duct comprises an excavated 325mm wide x 925mm deep trench with the cable pulled through the duct. There are 3 no. joint bays that will be located below ground level.

As part of the proposed grid connection route it will be necessary to cross a bridge structure. This will be achieved by horizontal directional drilling (HDD) under the Creevyquin stream as the stone arch bridge structure only has approximately 400mm of cover between the top of the keystone and the road level which is an insufficient depth for an underground cable according to ESB current standards.

Figure 1: Route of proposed underground cable

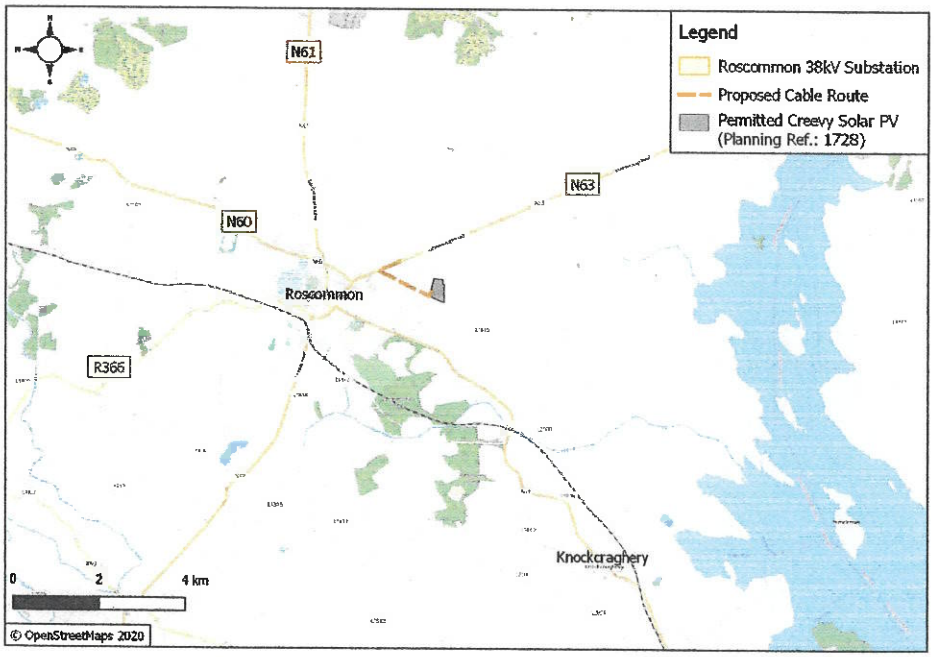



Figure 2: Route of proposed underground cable in context

On the 10 March 2020, Power Capital Renewable Energy Limited applied for a Declaration under Section 5 of the Planning and Development Act 2000. The application for planning exemption is based on Class 26 in Part 1 of Schedule 2 of the Planning and Development Regulations 2001, as amended:

- Class 26 – the carrying out by any undertaker authorised to provide an electricity service development consisting of laying underground of mains, pipes, cables or other apparatus

An Appropriate Assessment Screening Report was part of the application that identified a potential link/pathway between the proposed bridge crossing on Creevyquin Road via Creevquin Steam and Lough Rea SAC which is 1.57 kilometres away and Lough Rea SPA which is 5.64 kilometres away from the site. Taking into account the distance separating the site to these European sites, the size of the development, the Construction Methodology Report submitted and proposed best practice measures, the Screening Report screened out any potential impacts on the receiving environment, to evidence non-requirement for an EIA or AA.

The Construction Methodology Report submitted with the application included underground cable drawings covering public and access road ducting, watermain crossing, joint bay and link box details. The Traffic Management section in the report stated that traffic management and road signage will be in accordance with the Department of Transport: Traffic Signs Manual - Chapter 8: Temporary Traffic Measures and Signs for Road Works. For a future road opening license application, a detailed traffic management plan will be provided with a 'Stop-Go' system and a minimum one live carriageway to being maintained on the N63.

A full road closure for local secondary roadway (L-1811), apart from local access to residents, will be required as the road is narrow with short hard strip sections for a works area and passing vehicles. The necessary route diversion will be agreed in the road opening licence application in advance of the development with a detailed traffic management plan to protect public safety and minimise road user obstruction.

## 4. Planning History

### 4.1 Creevy Solar Park

An Bord Pleanála granted a 10 year planning permission to Gaelectric Renewable Energy Developments Limited on 23 March 2018 for the development of a solar PV development to include: a single storey electrical substation building, electrical inverter and transformer stations, solar PV panels, mounted on metal frames, new access tracks, underground cabling, perimeter fencing with infrared CCTV and access gates, temporary construction compound, spare parts container, weather station, a new access point and all ancillary infrastructure and associated works within a total site area of 13.6 hectares. (Reference PL 20.248780).

### 4.2 Roscommon (Cloonybeirne) 38kV substation

An Bord Pleanála granted a planning permission to ESB Networks on 30 August 2007 for development at existing Roscommon 38kV station consisting of the construction of a new 38kV control and switchgear modules, unit sub plinth, new bunded transformer and new plinths, oil interceptor, circuit breaker plinth, 3 no. cable chairs, replacing existing inner compound chainlink fence with a new palaside fence and part boundary blockwork wall, new entrance gates, re-location of existing ESB Timber SCADA communications pole, 4m wide gravel access road, existing control hut to be converted to WC and associated site works and the demolition of existing MV and transformer plinths. (Reference: PL20.223607).

## 5. Legislative Provisions

### 5.1 Planning and Development Act 2000, as amended

***Section 2(1)***

*""works" includes any act or operation of construction, excavation, demolition, extension, alteration, repair or renewal and....."*

***Section 3(1)***

*"development" means, except where the context otherwise requires, the carrying out of any works on, in, over or under land or the making of any material change in the use of any structures or other land.*

*"statutory undertaker" means a person, for the time being, authorised by or under any enactment or instrument under an enactment to –*

*(a) construct or operate a railway, canal, inland navigation, dock, harbour or airport,*

*(b) provide, or carry out works for the provision of, gas, electricity or telecommunications services, or*

*(c) provide services connected with, or carry out works for the purposes of the carrying on of the activities of, any public undertaking."*

***Section 4(2)(a)(i)***

*"The Minister may by regulations provide for any class of development to be exempted development for the purposes of this Act where he or she is of the opinion that –*

*(i) by reason of the size, nature or limited effect on its surroundings, of development belonging to that class, the carrying out of such development would not offend against principles of proper planning and sustainable development, or...."*

***Section 4(4)***

*"Notwithstanding..... any regulations under subsection (2), development shall not be exempted development if an environmental impact assessment or an appropriate assessment of the development is required".*

***Section 172(1)***

*"An environmental impact assessment shall be carried out by a planning authority or the Board, as the case may be, in respect of an application for consent for –*

*(a) proposed development of a class specified in Schedule 5 to the Planning and Development Regulations 2001 which exceeds a quantity, area or other limited specified in that Schedule, and*

*(b) proposed development of a class specified in Schedule 5 to the Planning and Development Regulations 2001 which does not exceed a quantity, area or other limit specified in that Schedule but which the planning authority or the Board determines would be likely to have significant effects on the environment".*

***Section 177U(9)***

*"In deciding upon a declaration or a referral under section 5 of this Act a Planning Authority or the Board, as the case may be, shall where appropriate, conduct a screening for appropriate assessment in accordance with the provisions of this section".*

**5.2 Planning and Development Regulations 2001, as amended**

***Article 3(3)***

*""electricity undertaking" means an undertaker authorised to provide an electricity service"*

***Article 6(1)***

*"Subject to article 9, development of a class specified in Column 1 of Part 1 of Schedule 2 shall be exempted development for the purposes of the Act, provided that such development complies with the conditions and limitations specified in Column 2 of the said Part 1 opposite the mention of that class in the said Column 1"*

***Schedule 2, Part 1***

**Development by Statutory Undertakers**

***Class 26***

*"the carrying out by any undertaker authorised to provide an electricity service of development consisting of the laying underground of mains, pipes, cables or other apparatus for the purposes of the undertaking".*

***Article 9(1)***

*"Development to which Article 6 relates shall not be exempted development for the purposes of the Act –*

*(a) If the carrying out of such development would –*

*(iii) endanger public safety by reason of traffic hazard or obstruction of road users,*

*(v) consist of or comprise the carrying out under a public road of works other than a connection to a wired broadcast relay service, sewer, water main, gas main or electricity supply line or cable, or any works to which class 25, 26 or 31(a) specified in column 1 of Part 1 of Schedule 2 applies,*

*(vii) consist of or comprise the excavation, alteration or demolition (other than peat extraction) of places, caves, sites, features or other objects of archaeological, geological, historical, scientific or ecological interest, the preservation, conservation or protection of which is an objective of a development plan or local area plan for the area in which the development is proposed or, pending the variation of a development plan or local area plan, or the making of a new development plan or local area plan, in the draft variation of the development plan or the local area plan or the draft development plan or draft local area plan,*

*(viiA) consist of or comprise the excavation, alteration or demolition of any archaeological monument included in the Record of Monuments and Places, pursuant to section 12(1) of the National Monuments (Amendment) Act 1994, save that this provision shall not apply to any excavation or any works, pursuant to and in accordance with a consent granted under section 14 or a licence granted under section 26 of the National Monuments Act 1930 (No. 2 of 1930) as amended,*

*(viiB) comprise development in relation to which a planning authority or An Bord Pleanála is the competent authority in relation to appropriate assessment and the development would require an appropriate assessment because it would be likely to have a significant effect on the integrity of a European site,*

*(c) If it is development to which Part 10 applies, unless the development is required by or under any statutory provision (other than the Act or these Regulations) to comply with procedures for the purpose of giving effect to the Council Directive."*

## 6. Legislative Tests

The question that the Board is requested to review is:

*"Whether an underground 20kV medium voltage cable within (the) public road between (a) permitted solar farm (PD/17/28) and 38kV Roscommon Substation is or is not development and is or is not exempted development".*

### 6.1 'Development'

Having regard to the nature of the proposal, namely the construction of c.5.5 kilometres of underground cable, it is clear, by reference to Section 2(1) and 3(1) of the Act, that it does constitute development for planning purposes.

### 6.2 'Exempted Development'

Following on from Section 4(2)(a)(i) of the Act, and the Planning and Development Regulations 2001, as amended, the relevant class of development is, as indicated above, Class 26 in Part 1 of Schedule 2 of the Regulations. The proposal is clearly *"a development consisting of the laying underground of....cables....for the purposes of the undertaking"*. The other requirement of this class is that the development be carried out by an *"undertaker authorised to provide an electricity service"*.

## 6.3 Undertaker/Statutory Undertaker

In Article 3(3) of the Regulations it states that an electricity undertaking means *"an undertaker authorised to provide an electricity service"*. However, there is no statutory definition to clarify what exactly this means. The Electricity Regulation Act 1999, at Section 2(1), provides the following definition:

*"electricity undertaking" means any person engaged in generation, transmission, distribution or supply of electricity, including any holder of a licence or authorisation under this Act, or any person who has been granted a permit under section 37 of the Principal Act".*

It is noted that while this definition refers to holders of licences/authorisations/permits, the use of the conjunction *"including"* prior to the reference to these instruments indicates that they are not essential and that the term *"electricity undertaking"* can apply to *"any person"* engaged in generation, transmission, distribution or supply of electricity.

Class 26 falls under the heading *"Development by Statutory Undertakers"*. It is one of several classes (Classes 23 – 32) in this part of the Schedule. It is submitted that the references to 'undertakers', 'undertakings' and 'other bodies/authorities' referred to in these classes must be construed as meaning 'statutory undertakers'.

The definition of *"Statutory Undertaker"* as provided in the Act appears to encompass a very broad spectrum of categories of persons or bodies. It includes *"...a person, for the time being, authorised by or under any enactment or instrument under an enactment to ...provide, or carry out works for the provision of ...electricity"*. Power Capital Renewable Energy Limited falls within this category on foot of its authorisation under the Planning Act to construct a solar farm that is a project/works for the provision of electricity. Additionally, they intend to apply to the regulator (CRU) for a licence/authorisation under the Electricity Regulation Act, Section 14 and Section 16.

The proposed development therefore falls within the scope of Class 26.

## 6.4 Requirement for Environmental Impact assessment (EIA) or Appropriate Assessment

### Environmental Impact Assessment (EIA)

Being an underground cable for the transmission of electricity the proposed development does not fall within a class of development for the purposes of EIA. It cannot, therefore, attract a requirement for EIA.

It should be noted that the Planning and Environmental Report submitted with the application for the solar park finds that the project is not of a prescribed class of development for the purposes of EIA.

**Appropriate Assessment (AA)**

In relation to Appropriate Assessment the application documentation submitted to the County Council included an Appropriate Assessment Screening Report.

The Report correctly identifies the nearest European Sites as Lough Ree SAC which is 1.57 kilometres away and Lough Ree SPA which is 5.64 kilometres away from the site.

Notwithstanding the Screening carried out by the County Council. it is that there is sufficient information in the Screening Report to conclude that there is not a likelihood of significant in-combination effects. Firstly, the small scale of the project is such that it is not reasonably conceivable that it would be likely to give rise to significant effects over and above those likely to arise from the solar farm, the substation or any other project or plan that might be considered. Secondly, the nature of the project, which involves the laying of an underground cable within a 325mm wide x 925mm deep trench in public roads through the built-up area is such that significant additional effects are also unlikely.

It is reasonable to conclude therefore, on the basis of the information submitted with the application, which is considered adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on the nearest European Sites and therefore a Stage 2 Appropriate Assessment is not required.

The proposed development therefore does not fall within the scope of Section 4(4) of the Act.

**6.5 Article 9(1) De-exemptions**

In relation to Article 9(1)(a)(iii), which refers to traffic hazard/obstruction of road users, being an underground cable, the project, would have no impact on traffic safety. It should be noted that there is a requirement for a road opening licence and that construction will comply with relevant health and safety and traffic management requirements.

In relation to Article 9(1)(a)(v), the proposed development falls within the scope of Class 26 so that this article does not apply.

Articles 9(1)(a)(vii) and (viiA) refer to archaeological and other sites of interest that are the subject of preservation/conservation objectives. As there are no such sites that could be impacted by the proposed development it does not fall within the scope of these Articles.

Article 9(1)(a)(viiB) refers to the issue of Appropriate Assessment and based on paragraph 6.4 above does not apply.

Similarly Article 9(1)(c) refers to the issue of EIA and based on paragraph 6.4 above does not apply.

## 7. Grounds of Referral

### 7.1 Endangering public safety by reason of traffic hazard or obstruction of road users

Roscommon County Council Assessment

It is the County Council's view that the possibility of the proposed development endangering public safety through the reasons of a traffic hazard or obstruction of road users that cannot be ruled out.

The Construction Methodology Report has a traffic management section for the L-1811 and N63.

Local Secondary Road (L-1811): Due to the fact there is no grass verge on this route the underground cable will be installed in the centre of the carriageway for a distance of 1.27 kilometres. This route will have to be closed during the construction phase in accordance with a traffic management plan which is intended will be agreed with the County Council (road opening licence application) prior to works commencing.

National Secondary Route N63: the works will be for a distance of 495 metres. The underground cable will be installed in grass verges where possible but it will have to cross the N63 carriageway to access the local road. A 'Stop and Go' system for traffic is proposed as set out in the traffic management plan submitted with the application.

Response

The applicants respectfully disagree with the County Council's assessment and conclusion.

It is stated in the application documentation a detailed traffic management plan will be included within the road opening licence application to Roscommon County Council at a future date for consideration and approval prior to the commencement of any works. Traffic management and road signage will be in accordance with the Department of Transport: Traffic Signs Manual - Chapter 8: Temporary Traffic Measures/Signs for Road Works, in agreement with Roscommon County Council.

On the N63, the cable installation works will allow for one side of the road to be open to traffic at all times by means of a 'Stop-Go' type traffic management system, where a minimum 2.5 metre wide roadway will be maintained at all times. Temporary traffic signals will be implemented to allow road users safely pass through the works area by channelling them onto the open side of the road. Typically, the cable will be installed in 100 metre sections, and no more than 100 metres will be excavated without the majority of the previous sections being reinstated. Where the construction requires the crossing of a road, works on one carriageway will be completed before the second carriageway is opened, to maintain traffic flows both safely and unhindered at peak and non-peak hours. All construction vehicles will be parked within the works area so as not to cause

obstruction or inconvenience to road users or residents. The traffic signals will be in place prior to the works commencing and will remain in place until after the works are completed. The public road will be checked regularly and maintained free of mud and debris. Road sweeping will be carried out as appropriate to ensure construction traffic does not adversely affect the local road condition. All these traffic management measures will be incorporated into a detailed Traffic Management Plan to be prepared, in consultation with Roscommon County Council, prior to the commencement of any works.

On the L-1811, a full road closure for this secondary roadway is required (apart from local access to residents) as the local road is narrow with only short hard strip sections for a works area and passing vehicles. The route diversion will be agreed in the road opening licence application in advance of the development with a detailed traffic management plan to protect public safety and minimise road user obstruction. The road opening licence application under Section 254 of the Planning and Development Act will be submitted to Roscommon County Council for approval a minimum of six months prior to the commencement of any works.

We therefore do not accept that the public will be endangered through the reason of traffic hazards or obstruction of road users.

**7.2 Significant impacts on European Sites (Natura 2000: Lough Ree SAC and SPA)**

Roscommon County Council Assessment

The Appropriate Assessment Screening Report submitted with the application highlights a hydrological link between the application site and Lough Ree SAC and SPA and proposes best practice measures that will be implemented during the construction of the underground cable in order to avoid any harmful effects on the European sites.

The Appropriate Assessment Screening carried out by the County Council addressed the following questions to determine if the Natura 2000 sites are impacted:

| | |
|---|---|
| Is the development within a Special Area of Conservation or Special Protection Area of 1km | **No, not within 1km of any qualifying interests.** |
| **Impacts on Freshwater Habitats** | **Likely Effects (direct, indirect or cumulative)** |
| Lough Ree SAC (Site Code: 000400) Distance from site: 2.94km, Designated features: Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation (#3150) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |
| **Impacts on Bog Mires & Fens Habitats** | **Likely Effects (direct, indirect or cumulative)** |
| Lough Ree SAC (Site Code: 000400) Distance from site: 2.94km, Designated features: Degraded raised bogs still capable of natural regeneration (#7120), Alkaline fens (#7230) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |

| **Impacts on Forests Habitats** | **Likely Effects (direct, indirect or cumulative)** |
|---|---|
| Lough Ree SAC (Site Code: 000400) Distance from site: 2.94km, Designated features: Old sessile oak woods with Ilex and Blechnum in the British Isles (#91A0), Bog woodland (#91D0) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |
| **Impacts on Grasslands Habitats** | **Likely Effects (direct, indirect or cumulative)** |
| Lough Ree SAC (Site Code: 000400) Distance from site: 2.94km, Designated features: Semi natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia), (*important orchid sites) (#6210) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |
| **Impacts on Rocky Habitats** | **Likely Effects (direct, indirect or cumulative)** |
| Lough Ree SAC (Site Code: 000400) Distance from site: 2.94km, Designated features: Limestone pavements (#8240) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |
| **Impacts on Mammals** | **Likely Effects (direct, indirect or cumulative)** |
| Lough Ree SAC (Site Code: 000400) Distance from site: 2.94km, Designated features: Lutra lutra (Otter) (#1355) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |
| Lough Ree SPA (Site Code: 004064) Distance from site: 7.48km, Designated features: Little Grebe (#A004), Whopper Swan (#A038), Wigeon (#A050), Teal (#A052), Mallard (#A053), Shoveler (#A056), Tufted Duck (#A061), Common Scoter (#A065), Goldeneye (#A067), Coot (#A125), Golden Plover (#A140), Lapwing (#A142), Common Tern (#A193), Wetland and Waterbirds (#A999) | Significant impacts cannot be ruled out due a possible hydrological link between Creevyquin Stream and Lough Rea SAC |

The County Council noted that along the route the cable will encounter a bridge over the Creevyquin stream. To traverse the stream, it is proposing that horizontal directional drilling (HDD) will be used to cross under the stream. HDD involves excavation using a drill, pulling ducting through, using steal boxes at the banks to collect excavated material and reinstating the holes. The County Council considers there is potential for environmental risks associated with this drilling as there is potential for the release of hazardous substances into the water course, release of sediment into the water course, erosion of stream banks and risk of intersection with the bottom of the stream bank. Overall, it is considered there are potential negative drilling risks with possible release of sediments and substances into the stream.

Also, the conservation objectives for Lough Ree SAC and SPA for no decline in water transparency and maintain water quality to support wetland habitats, as a resource for the migratory water birds.

The opinion of the County Council is that there is not sufficient certainty to conclude that significant impacts on European Sites cannot be ruled out and that a Stage 2 Appropriate Assessment is required.

Response

The applicants respectfully disagree with this assessment, specifically related to the 130 metre HDD length of underground cable crossing at Creevyquin Stream.

The existing stone arch bridge structure over the Creevyquin stream has approximately 400mm of cover between the top of the keystone and the road level, on the bridge deck, which is not sufficient depth for ESB standards (425mm cover is required). Consequently a HDD is required to facilitate the cable duct while maintaining sufficient cover over the ducts. The HDD launch and reception pit locations will be selected by the drilling contractor as part of the detailed design phase with a transition chamber to be installed at either side of the 130 metre length HDD as per ESB requirements.

HDD is a method of drilling under obstacles such as bridges, railways, water courses, etc. in order to install cable ducts under the obstacle, and is a standard technique employed where installing ducts using conventional installation methods is not possible. The drilling method is comprehensively set out in Section 4.5 of the Construction Methodology Report, along with crossing detail drawings 210/211.

The key process includes a steel box in both the launch and reception pits that will contain any drilling fluid returns from the borehole path under the watercourse. This will be at a minimum depth of 1500mm under the Creevyquin Stream, in accordance with recommended guidelines by Inland Fisheries Ireland and Waterways Ireland to avoid impact to the watercourse or water contamination.

The HDD contractor is also required to prepare a detailed Construction Environmental Management Plan (CEMP) prior to the commencement of construction, with best practice drilling techniques and experienced supervision to apply environmental compliance to avoid any drilling risk to the stream. In addition, all non-recyclable waste or drilling rig fluids arising during the construction phase will be managed and disposed of in a way that ensures the provisions of the Waste Management Act 1996 and associated amendments and regulations of the Waste Management Plan are followed.

According to the Appropriate Assessment Screening Report, the Creevyquin Stream flows for 1.2 kilometres before joining the Jiggy River that flows for 2.8 kilometres before discharging into the Hind River that flows a further 10.7 kilometres.

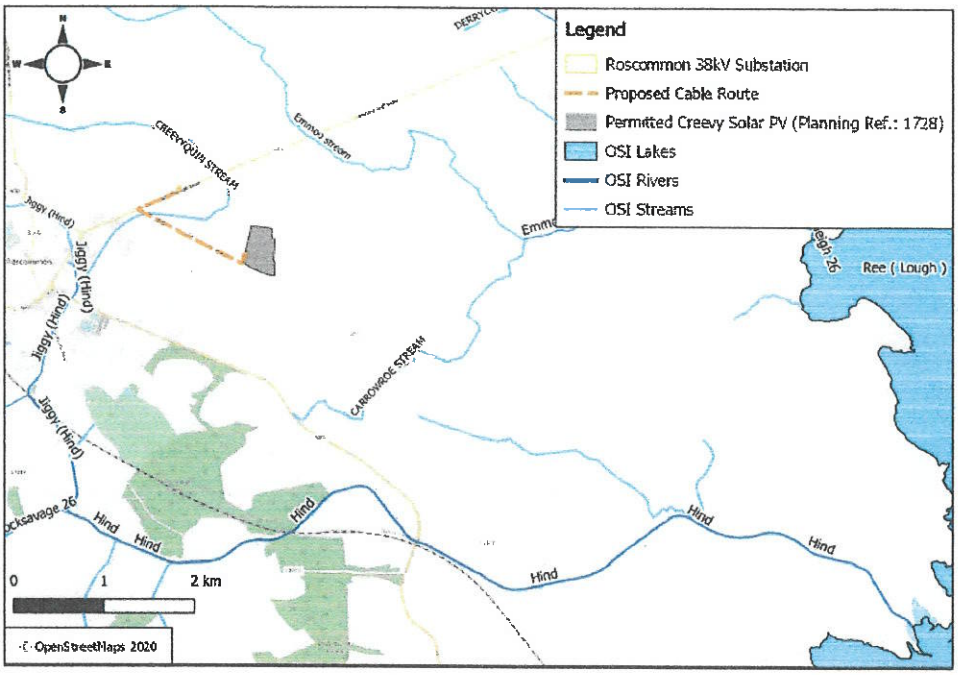



Figure 3: Watercourses and Rivers

The drilling method for the Creevyquin Stream crossing is comprehensively set out in Section 3.3.1 of the Construction Methodology Report, where specialist ecological input was taken into consideration, to ensure that the HDD design and layout will be sensitive to valued ecological features that occur or may occur within the landscape.

The following guidance will be referred to in the Construction Environmental Management Plan (CEMP) and applied during the construction phase, including trenching to prevent water pollution:

- CIRIA (2001) C532 – Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors;
- CIRCA (2006) – Control of Water Pollution from Linear Construction Projects, Site Guide (C649) and Technical Guidance (C648); and
- IFI (2016) Guidelines on Protection of Fisheries during Construction Works in and adjacent to Waters (Inland Fisheries Ireland, 2016).

Potential impacts, if any, on the Lough Ree SAC and SPA were considered further in Section 5 of the Appropriate Assessment Screening Report, where it is considered highly unlikely that the proposed works will have an adverse effect on the impairment of Water Quality or any of the qualifying habitats or species of interest. Taking into account the distance separating the site from the Natura 2000 sites and the best practice measures that will be implemented during the construction of the grid connection, it can be concluded that the proposed development will not have any adverse effects on water quality within the Creevyquin Stream and thus will not have any adverse effects on the water quality of the Lough Ree SAC and SPA downstream. Also, there will not be any significant in-combination contribution.

## 8. Conclusion

The applicants do not accept that County Council's decision in this instance that the proposed development is not exempted development is justified. The subject development is a well designed and appropriate form of development in this location, to connect the permitted solar farm and 38kV substation that accords with Class 26 in Part 1 of Schedule 2 of the Planning and Development Regulations 2001, as amended.

Based on the following, it is submitted that the development is development and exempted development as:

1. The public will not be endangered through the reason of traffic hazards or obstruction of road users. A detailed traffic management plan and route diversion will be submitted as part of the road opening licence application to Roscommon County Council under Section 254 of the Planning and Development Act 2001, as amended, a minimum six months prior to works.

2. The Appropriate Assessment Screening process has fully examined the details of the proposed development and has considered the potential for adverse effects on Natura 2000 sites and their qualifying features of interests within a 15 kilometre radius of the proposed development. Potential significant impacts are considered highly unlikely on the Lough Ree SAC and SPA.

On the basis of the foregoing, it is requested that An Bord Pleanála make a determination that the construction of the proposed cable does constitute exempted development.

Yours faithfully

**Ian McGrandles**
**Director**

Encls.

***ROSCOMMON COUNTY COUNCIL***

**PLANNING AND DEVELOPMENT ACT, 2000 (as amended)**

**SECTION 5 - DECLARATION ON DEVELOPMENT AND EXEMPTED DEVELOPMENT**

**NOTIFICATION OF DECISION**

**Power Capital Renewable Energy Ltd.**
**2 Merrion Place,**
**Dublin 2,**
**D02 XW71**

**Reference Number:** **DED 383**

**Application Received:** **10th March, 2020**

**WHEREAS a question has arisen as to whether an "underground 20kV medium voltage cable within public road between permitted solar farm (PD/17/28) and 38kV Roscommon substation", is or is not development and is or is not exempted development:**

**AND WHEREAS Roscommon County Council, in considering this application had regard particularly to –**

**(a) Sections 2, 3, 4 and 5 of the Planning and Development Act 2000 (as amended)**
**(b) Article 9 of the Planning and Development Regulations 2001 (as amended)**
**(c) Class 26 and 27 of Part 1 of Schedule 2 of the Planning & Development Regulations 2001 (as amended)**
**(d) The record forwarded to Roscommon County Council in accordance with Subsection (6)(c) of Section 5 of the Planning & Development Act 02000 (as amended)**
**(e) The planning history of the site**
**(f) Article 6 Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, as amended.**

**AND WHEREAS Roscommon County Council has concluded that –**

(a) The proposed development constitutes development as defined in the Planning & Development Act 2000, (as amended) and associated Regulations.
(b) The likelihood of significant effects from the proposed development on the conservation objectives of European sites, in particular Lough Ree SAC and Lough Ree SPA cannot be excluded and a Stage 2 AA is required, therefore, in accordance with Section 4(4) of the Planning and Development Act, 2000, as amended, the said works cannot avail of any exemptions that might otherwise be available under the Act, or under the Planning and Development Regulations, 2001 as amended.
(c) The possibility of the proposed development endangering public safety by reason of traffic hazard or obstruction of road users cannot be ruled out and therefore the said works cannot avail of any exemptions that might otherwise be available under Section 9 of the Planning and Development Regulations, 2001, as amended.
(d) The proposed development is not exempted development as defined in the Planning & Development Act 2000 (as amended) and associated Regulations.

**NOW THEREFORE**

By virtue of the powers vested in me by the Local Government Acts, 1925 – 2019, and Section 5(2)(a) of the Planning & Development Act 2000 (as amended) and having considered the various submissions and reports in connection with the application described above it is hereby declared that an **"underground 20kV medium voltage cable within public road between permitted solar farm (PD/17/28) and 38kV Roscommon substation", constitutes development that is not exempted development** as defined within the Planning & Development Act 2000 (as amended) and associated Regulations.

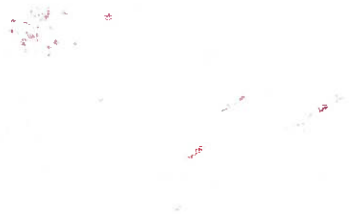
Any persons issued with a declaration under Section 5 of the Planning and Development Act, 2000 Act (as amended) may, on payment to An Bord Pleanála of the prescribed fee, refer a declaration for review within 4 weeks of the date of the issuing of the declaration.

**Signed on behalf of the Council:**

Mary Dolan

**Administrative Officer,**
**Planning.**

**Date:** 4th **June, 2020.**



March 2020



# Appropriate Assessment – Stage 1 Screening Report

## Proposed Creevy Solar Park MV Grid Connection

## On behalf of

powercapital
renewable energy

## Roscommon, Co. Roscommon

MALONE O'REGAN
ENVIRONMENTAL

QUALITY
ISO 9001:2008
NSAI Certified

MALONE O'REGAN

**Form ES - 04**

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**Title: Appropriate Assessment – Stage 1 Screening Report, Proposed Creevy Solar Park MV Grid Connection, Power Capital Renewable Energy Limited, Roscommon, Co. Roscommon**

**Job Number: E1644**

**Prepared By: Amelia Keane** **Signed:** Amelia Keane

**Checked By: Dyfrig Hubble** **Signed:**

**Approved By: Kevin O'Regan** **Signed:** K O'R

## Revision Record

| Issue No. | Date | Description | Remark | Prepared | Checked | Approved |
|---|---|---|---|---|---|---|
| 00 | 06/03/20 | AA Report | FINAL | AK | DH | KOR |
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# Appropriate Assessment – Stage 1 Screening Report
# Proposed Creevy Solar Park MV Grid Connection
# Power Capital Renewable Energy Limited
# Roscommon, Co. Roscommon

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## APPENDICES

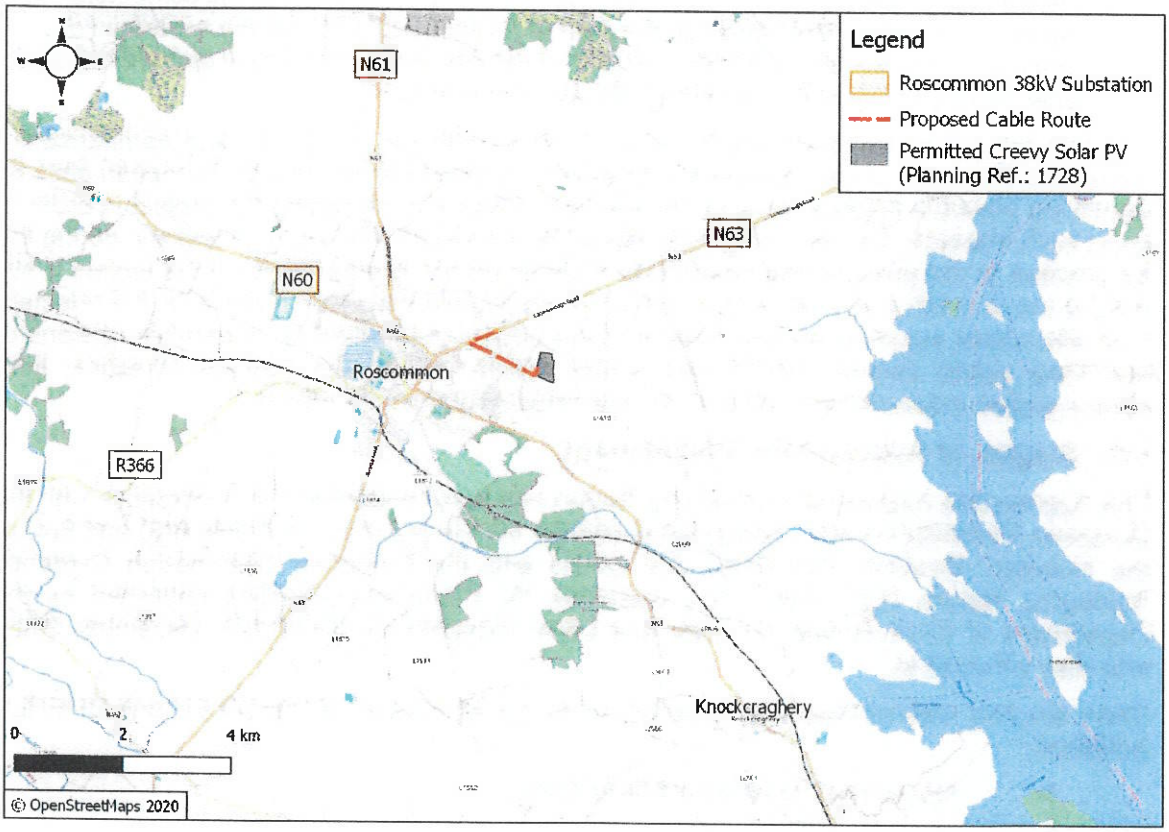
# 1 INTRODUCTION

## 1.1 Background

Malone O'Regan Environmental (MOR) were commissioned by Power Capital Renewable Energy Limited to undertake an Appropriate Assessment Screening Report (AA) in support of a proposed grid connection and associated infrastructure works from a recently granted Solar Photovoltaic (PV) farm (Planning Ref: 1728) to the existing 38kV Roscommon substation.

The location of the proposed grid connection ('the Site') is in Roscommon, Co. Roscommon (OS Reference: M 89815 64684) and is shown in Figure 1-1.

**Figure 1-1: Site Location**




The purpose of this assessment was to determine the appropriateness, or otherwise, of the proposed works in the context of the conservation objectives of Natura 2000 sites.

This report will be submitted as part of an exempted development application to Roscommon County Council under Section 5 of the Planning and Development Act 2000, as amended.

## 1.2 Regulatory Context

This Appropriate Assessment Screening Report was prepared in compliance with the following legislation:

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna better known as "The Habitats Directive" which provides the framework for legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and

Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC as amended 2009/149/EC)) (better known as "The Birds Directive").

Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment (now termed Natura Impact Statement):

> *"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the project should aim to avoid any negative impacts on European sites by identifying possible impacts early in the planning stage and designing the project in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the AA process to the point, where no adverse impacts on the site(s) remain. If the project is still likely to result in adverse effects, and no further practicable mitigation is possible, it is rejected. If no alternative solutions are identified and the project is required for imperative reasons of overriding public interest (IROPI test) under Article 6(4) of the Habitats Directive, then compensation measures are required for any remaining adverse effects.

## 1.3 Stages of Appropriate Assessment

This Appropriate Assessment Screening Report has been undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC 2001) and the European Commission Guidance 'Managing Natura 2000 Sites'. The Guidance for Planning Authorities published by the Department of Environment, Heritage and Local Government (DOEHLG, December 2009) was also adhered to.

There are four distinct stages to undertaking an AA as outlined in current EU and DOEHLG guidance:

1. Appropriate Assessment Screening;
2. Appropriate Assessment;
3. Assessment of Alternatives in cases where significant impact cannot be prevented; and,
4. Where no alternatives exist, an Assessment of Compensatory Issues in the case of projects or plans which can be considered to be necessary for Imperative Reasons of Overriding Public Interest (IROPI).

This Report comprises a Stage 1 Screening Report, which seeks to determine whether the subject site will, on its own or in combination with other plans / projects, have a significant effect on Natura 2000 sites within a defined radius of the subject site.

# 2 SCREENING FOR APPROPRIATE ASSESSMENT

Screening determines whether Appropriate Assessment is necessary by examining:

1. Whether a plan or project can be excluded from AA requirements because it is directly connected with, or necessary to, the management of a Natura 2000 site; and,
2. Whether the project will have a potentially significant effect on a Natura 2000 site, either alone or in combination with other projects or plans, in view of the site's conservation objectives.

Screening involves the following:

i) Description of a plan or project;

ii) Identification of relevant Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives;

iii) Assessment of likely effects – direct, indirect and cumulative – undertaken on the basis of available information as a desk study or field survey or primary research as necessary; and,

iv) Screening Statement with conclusions.

## 2.1 Desk Based Studies

A desk-based review of information sources was completed, which included the following sources of information:

- The National Parks and Wildlife Service (NPWS) website was consulted with regard to the most up to date detail on conservation objectives for the Natura 2000 sites relevant to this assessment (National Parks and Wildlife Service, 2020);
- The National Biodiversity Data Centre website was consulted with regard to species distributions (National Biodiveristy Data Centre, 2020);
- The EPA Envision website was consulted to obtain details about watercourses in the vicinity of the Site (https://gis.epa.ie/EPAMaps/) (EPA, 2020); and,
- The EPA Catchments website was consulted to obtain details about watercourses in the vicinity of the Site (https://www.catchments.ie/maps/) (EPA Catchments, 2020).

## 2.2 Field Based Studies

A Site walkover was undertaken on the 22nd January 2020 by a MOR Principal Ecologist, to assess the on-site conditions and to identify any potential ecological receptors associated with Natura 2000 sites.

## 2.3 Survey Limitations

The survey was undertaken at a time of the year that was suboptimal for botanical assessments. However, given the proposed grid connection will run along the road, it is not considered that this would materially alter the findings of the assessment.

# 3 DESCRIPTION OF THE PROJECT

## 3.1 Site Context and Description

The proposed cable route is located within the Creevyquin, Acres and Cloonybeirne townlands, Co. Roscommon, approximately 1.3km northeast of Roscommon Town Centre.

The proposed grid connection will transmit power from the on-site substation within the permitted Creevy Solar Park (Planning Ref. No.: 1728) to the existing Roscommon 38kV ESB substation. The proposed route, approximately 1.96km in length, will be underground cabled from the Roscommon 38kV ESB substation in a south-westerly direction along the N63 for ca.495m towards the local road L1811. The proposed route will be underground cabled along the L1811 in a south-easterly direction for ca.1.27km before traversing north into the Creevy Solar Park, where the cable will connect into the on-site substation.

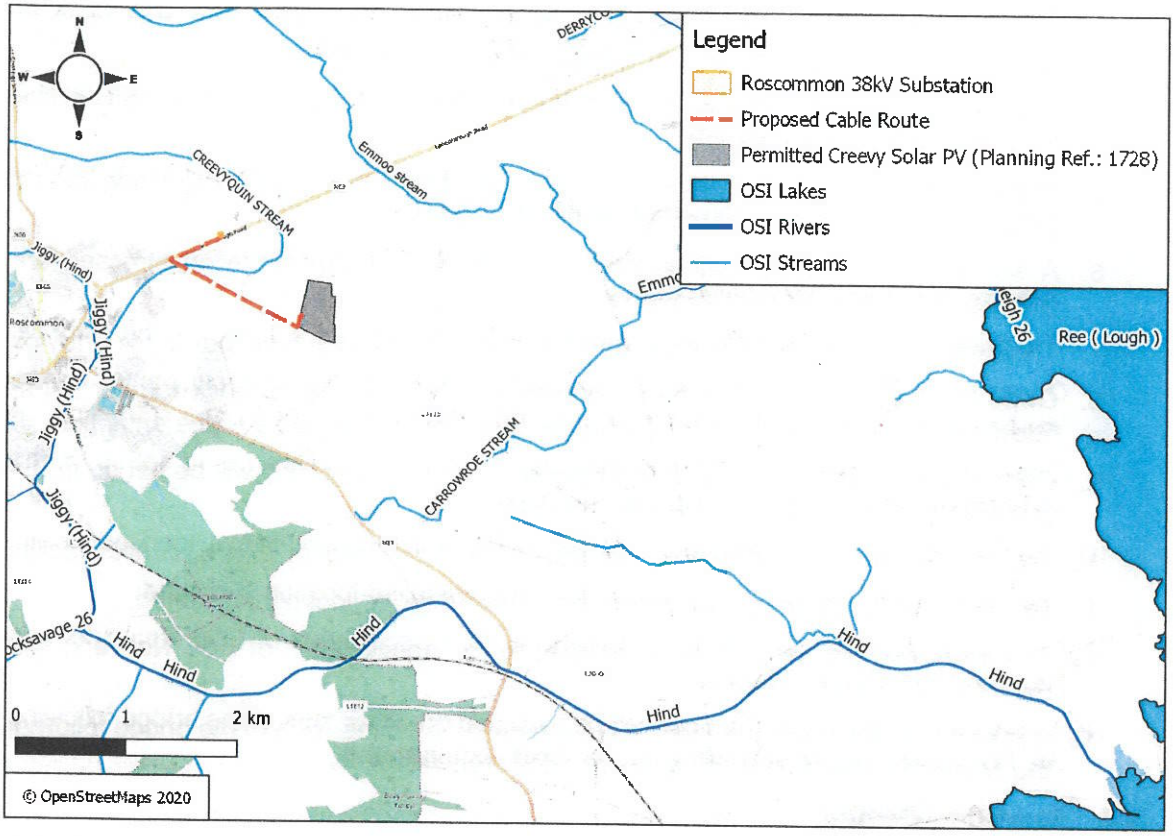
## 3.2 Watercourses within the Vicinity of the Site

The nearest hydrological feature to the proposed cable route is the Creevyquin Steam, which the cable route will cross. According to the EPA, the Creevyquin Stream has '*poor*' water quality status and is considered '*at risk*' (EPA, 2020). The Creevyquin Stream flows in a south-easterly direction for ca.1.2km before joining the Jiggy (Hind) River. The Jiggy (Hind) River also has '*poor*' water quality status and is considered '*at risk.*'

The Jiggy (Hind) River flows in a southernly direction for ca.2.8km before discharging into the Hind River. The Hind River flows for ca.10.7km eastwards before discharging into the Lough Ree. The Hind River is considered to have '*poor*' to '*moderate*' water quality status and is considered '*at risk.*' Whereas Lough Ree is considered to have '*good*' water quality status but is also considered '*at risk.*'

Both the Hind River and the Lough Ree are part of the Lough Ree SAC and Lough Ree SPA. Therefore, it can be considered that there is a potential hydrological connection between the proposed cable route and the Lough Ree SAC and SPA.

**Figure 3-1: Watercourses in the Vicinity of the Site**




## 3.3 Proposed Development

The proposed development will involve the construction of an underground cable route, ca.1.96km in length, to connect the permitted Creevy Solar PV farm with the existing ESB-owned Roscommon Substation. The proposed Site Layout is illustrated in Appendix A.

The works will consist of the installation of one (1No.) 125mm diameter HDPE power cable duct in an excavation trench, typically 325mm wide by 925mm deep. All works will be completed to ESB specification.

Full details of the proposed cable route development are provided within the TLI Group Construction Methodology Report which will also be submitted in support of this application.

### 3.3.1 Bridge Crossing

It is proposed that horizontal direction drilling (HDD) will be used to drill under the Creevyquin Stream and one (1No.) bridge. The HDD method is required due to there being insufficient cover and depth in the bridge to cross within the bridge deck. The drilling contractor will select the HDD launch and reception pit during the design phase.

According to the TLI Group Construction Methodology Report, the methodology for HDD under the stream and bridge will be as follows:

1. A works area of circa .40m$^2$ will be fenced on both sides of the stream crossing.
2. The drilling rig and fluid handling units will be located on one side of the bridge and will be stored on double bunded 0.5mm PVC bunds which will contain any fluid spills and storm water run-off.

3. Entry and exit pits (1m x 1m x 2m) will be excavated using an excavator, the excavated material will be temporarily stored within the works area and used for reinstatement or disposed of to a suitably licensed or permitted facility.
4. A 1m x 1m x 2m steel box will be placed in each pit. This box will contain any drilling fluid returns from the borehole.
5. The drill bit will be set up by a surveyor, and the driller will push the drill string into the ground and will steer the bore path under the watercourse.
6. A surveyor will monitor drilling works to ensure that the modelled stresses and collapse pressures are not exceeded.
7. The drilled cuttings will be flushed back by drilling fluid to the steel box in the entry pit.
8. Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit pit and will pull a drill pipe back through the bore to the entry side.
9. Once the bore holes have been completed, a towing assembly will be set up on the drill and this will pull the ducting into the bore.
10. The steel boxes will be removed, with the drilling fluid disposed of to a licensed facility.
11. The duct will be cleaned and proven, and their installed location surveyed.
12. The entry and exit pits will be reinstated to the specification of ESB Networks and Roscommon County Council.
13. A joint bay or transition chamber will be installed on either side of the bridge following the horizontal directional drilling as per ESB requirements.

## 3.4 Sensitive Design

As part of the design phase of the works, specialist ecological input was taken into consideration, to ensure that the design and layout of the proposal grid connection will be sensitive to valued ecological features that occur or may occur within the landscape.

## 3.5 Construction Procedures

During the construction phase potential environmental impacts will be short-term and localised. Nonetheless, all works will comply with the relevant legislation, construction industry guidelines and best practice in order to reduce potential environmental impacts.

All potential construction phase environmental impacts will also be addressed through the implementation of a comprehensive Construction Environmental Management Plan (CEMP) in accordance with current best practice guidelines. This plan will be prepared by the Contractor in advance of the commencement of construction works and implemented throughout the works. It will include procedures for monitoring the effectiveness of the environmental protection measures.

The following guidance has been referred to and will be followed during the construction phase of the project, including trenching works to prevent water pollution:

- CIRIA (2001) C532 – Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors;
- CIRCA (2006) – Control of Water Pollution from Linear Construction Projects, Site Guide (C649) and Technical Guidance (C648); and,
- IFI (2016) Guidelines on Protection of Fisheries during Construction Works in and adjacent to Waters (Inland Fisheries Ireland, 2016).

The Contractor shall ensure that all personnel working onsite are trained and aware of the measures detailed within the CEMP.

Working hours will generally be restricted to between 08:00 and 20:00 Monday to Friday and between 08:00 and 16:00 on Saturdays. There will be no works on Sundays or Bank Holidays except in exceptional circumstances or in the event of an emergency.

# 4 IDENTIFICATION OF NATURA 2000 SITES

In accordance with the European Commission Methodological Guidance (European Commission, 2002) a list of European sites that can be potentially affected by the proposed development has been compiled. Guidance for Planning Authorities prepared by the Department of Environment Heritage and Local Government (DoEHLG, 2009) states that defining the likely zone of impact for the screening and the approach used will depend on the nature, size, location and the likely effects of the project. The key variables determining whether or not a particular Natura 2000 site is likely to be negatively affected by a project are: the physical distance from the project to the site; the sensitivities of the ecological receptors; and, the potential for in-combination effects.

Adopting the precautionary principle, all SAC and SPA sites within a 15km radius of the proposed development Site have been considered. There are twelve (12No.) European sites located within 15km of the Site - these are identified in Figure 4-1 and Table 4-1.

**Figure 4-1: Site Location and Natura 2000 Designated Sites within 15km**

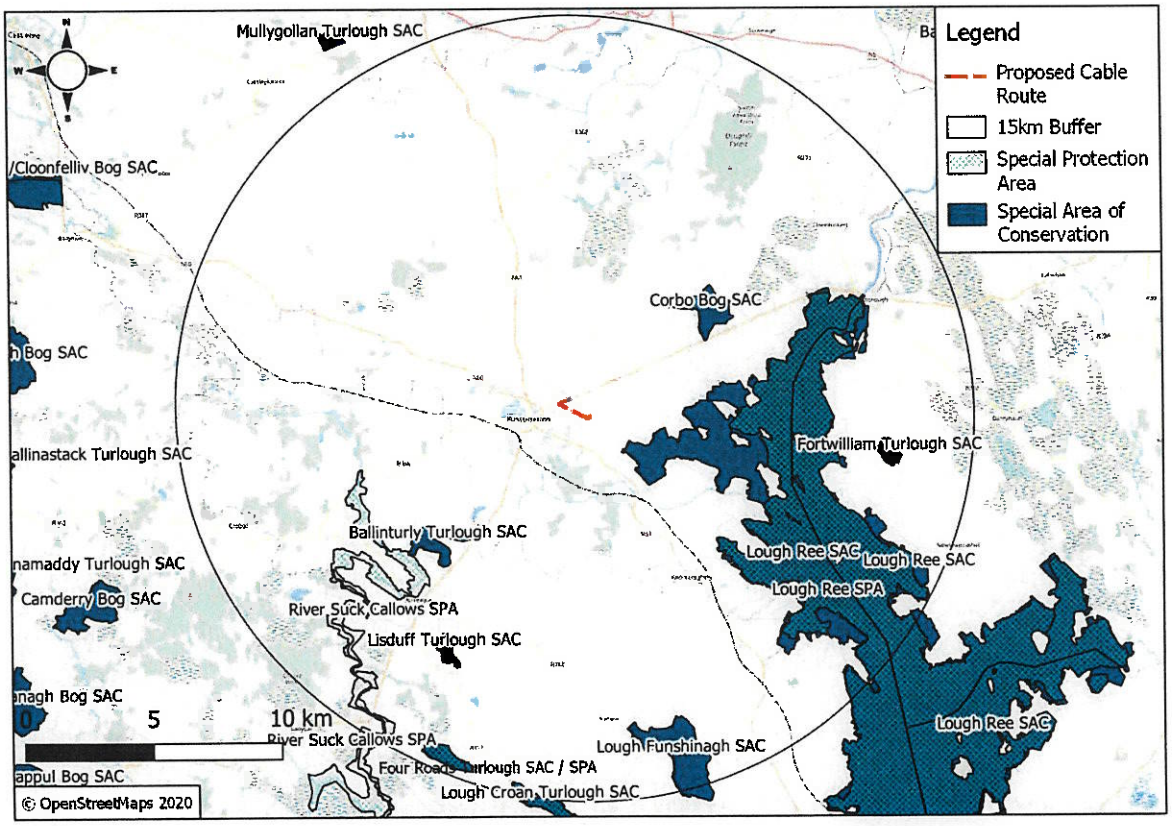



**Table 4-1: European Designated Sites within 15km of the Site**

| Site Name | Code | Distance (km) | Direction from the Site |
|---|---|---|---|
| **Special Areas of Conservation (SAC)** | | | |
| Lough Ree | 000440 | 1.8km | E |
| Corbo Bog | 002349 | 5.5km | NE |
| Ballinturly Turlough | 000588 | 6.9km | SW |

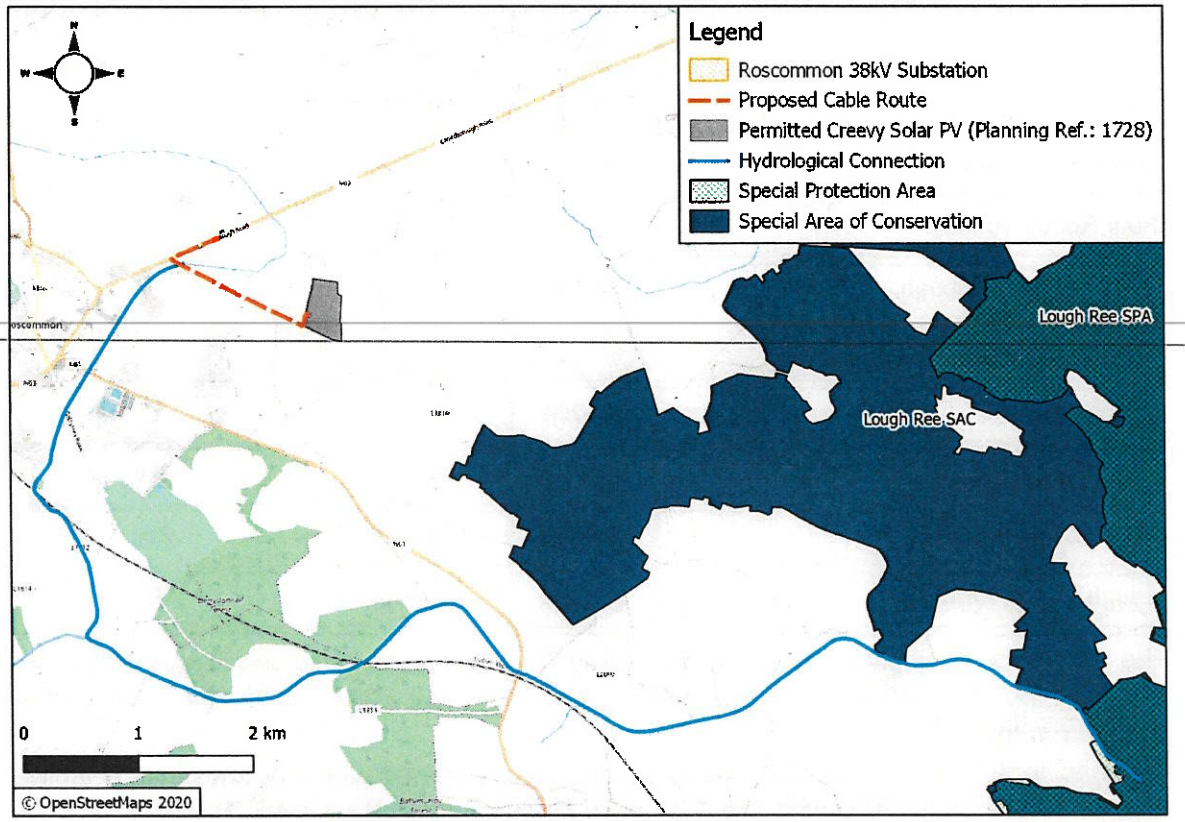
| Site Name | Code | Distance (km) | Direction from the Site |
|---|---|---|---|
| Lisduff Turlough | 000609 | 10.2km | SW |
| Fortwilliam Turlough | 000448 | 11.3km | SE |
| Lough Funshinagh | 000611 | 12.2km | SE |
| Four Roads Turlough | 001637 | 14.1km | SW |
| Lough Croan Turlough | 000610 | 14.6km | S |
| **Special Protection Area (SPA)** | | | |
| Lough Ree | 004064 | 5.5km | E |
| River Suck Callows | 004097 | 8.3km | SW |
| Four Roads Turlough | 004140 | 14.0km | SW |
| Lough Croan Turlough | 004139 | 14.6km | S |

The proposed development is not located within or directly adjacent to any Natura 2000 sites, however, the boundaries of the eight (8No.) SACs and four (4No.) SPAs are located within 15km from the Site.

It is considered highly unlikely that the proposed development would have any direct or indirect effects on the Corbo Bog SAC, the Ballinturly Turlough SAC, the Lisduff Turlough SAC, the Fortwilliam Turlough SAC, the Lough Funshinagh SAC, the Four Roads Turlough SAC, Lough Croan Turlough SAC, River Suck Callows SPA, Four Roads Turlough SPA and Lough Croan Turlough SPA or their designated features of interest, given the localised nature of the proposed development, the distance separating the sites, along with the absence of impact pathways between the Site and the Natura 2000 sites. As a result, these Natura sites have been screened out and will not be considered further as part of this assessment.

However, a hydrological connection was identified via the Creevyquin Stream between the proposed grid connection and the Lough Ree SAC / SPA, which is located ca.14.4km downstream (see Figure 4-2). Given this potential impact pathway, further consideration will be given to this Natura 2000 site, to assess potential adverse effects resulting from the proposed grid connection. Further details are provided in Sections 4.1, 4.2 and 5.

**Figure 4-2: Hydrological Connection between the Site and the Lough Ree SAC / SPA**




## 4.1 Lough Ree SAC (Site Code: 000440)

Spanning across counties Longford, Roscommon and Westmeath, Lough Ree, which is the third largest lake in Ireland, is situated in a depression in Carboniferous limestone within the River Shannon system. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. The Lough has a long, indented shoreline and sheltered bays and a scattering of islands within the Lough. The average depth of the Lough is 10m for most of the lough but there are six troughs running north to south and reach a maximum depth of 36m.

This SAC is designated for eight (8No.) designated habitats and one (1No.) designated species. Also, the lake itself supports one of only two populations in Ireland of the endangered fish species, Pollan (*Coregonus autumnalis*). Lough Ree is also designated as a Special Protection Area for the Lough's ornithological importance.

The main threat to this SAC comes from artificial enrichment of the waters by agricultural and domestic waste. Also, by peat silt in suspension, which limits the light penetration and thus restricting aquatic flora to shallower waters.

**Table 4-2: Qualifying Annex I Habitats for the Lough Ree SAC**

| *Qualifying Habitats* (* denotes Priority Habitat) | Code | Site Specific Conservation Objective |
|---|---|---|
| Natural eutrophic lakes | 3150 | Restore favourable conservation condition |
| Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) | 6210 | Restore favourable conservation condition |

| *Qualifying Habitats* (* denotes Priority Habitat) | Code | Site Specific Conservation Objective |
|---|---|---|
| Active raised bogs | 7110 | Maintain or restore favourable conservation condition |
| Degraded raised bogs still capable of natural regeneration | 7120 | Restore favourable conservation condition |
| Alkaline fens | 7230 | Maintain favourable conservation condition |
| Limestone pavements | 8240 | Maintain favourable conservation condition |
| Old sessile oak woods with Ilex and Blechnum in the British Isles | 91A0 | Maintain or restore favourable conservation condition |
| Bog Woodland | 91D0 | Restore favourable conservation condition |

**Table 4-3: Qualifying Annex II Species for the Lough Ree SAC**

| Species | Species Name | Code |
|---|---|---|
| Mammals listed on Annex II of the Habitats Directive | Otter (*Lutra lutra*) | 1355 |

## 4.2 Lough Ree SPA (Site Code: 004064)

This SPA is designated for thirteen (13No.) Annex I bird species and for special conservation interests for wetland and waterbirds.

This SPA is also of high ornithological importance for both winter and breeding birds. This Lough supports nationally important wintering populations of little grebe, whooper swan, wigeon, teal, mallard, Shoveler, tufted duck, goldeneye, coot, golden plover, lapwing. Other wintering species within this SPA include great crested grebe, cormorant, curlew, black-headed gull and mute swan. The site has a range of breeding waterfowl species, notably nationally important populations of Common Scoter and Common Tern. The Lough acts as a breeding site for black-headed gull, common full, tufted duck, great crested grebe, common scoter and cormorants. Of particular note is the regular presence of three species, Whooper Swan, Golden Plover and Common Tern, which are listed on Annex I of the E.U. Birds Directive. Parts of Lough Ree SPA are Wildfowl Sanctuaries.

**Table 4-4: Qualifying Annex I Species of Birds for Lough Ree SPA**

| Species Name | Scientific Name | Code |
|---|---|---|
| Little Grebe | *Tachybaptus ruficollis* | A004 |
| Whooper Swan | *Cygnus cygnus* | A038 |
| Wigeon | *Anas penelope* | A050 |
| Teal | *Anas crecca* | A052 |
| Mallard | *Anas platyrhynchos* | A053 |
| Shoveler | *Anas clypeata* | A056 |
| Tufted Duck | *Aythya fuligula* | A061 |

| Species Name | Scientific Name | Code |
|---|---|---|
| Common Scoter | *Melanitta nigra* | A065 |
| Goldeneye | *Bucephala clangula* | A067 |
| Coot | *Fulica atra* | A125 |
| Golden Plover | *Pluvialis apricaria* | A140 |
| Lapwing | *Vanellus vanellus* | A142 |
| Common Tern | *Sterna hirundo* | A193 |
| Wetland and Waterbirds | | A999 |

## 4.3 Conservation Objectives

European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status areas designated as Special Areas of Conservation and Special Protection Areas. The Irish Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

According to the EU Habitats Directive, favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, is stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and,
- The conservation status of its typical species is favourable as defined below.

The favourable conservation status of a species is achieved when:

- Population data on the species concerned indicate that it is maintaining itself;
- The natural range of the species is neither being reduced or likely to be reduced for the foreseeable future; and,
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The full report for the conservation objectives for the Lough Ree SAC[1] and Lough Ree SPA[2] can be found on the NPWS website.

[1] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000440.pdf
[2] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004064.pdf

# 5 IDENTIFICATION AND ASSESSMENT OF POTENTIAL IMPACTS

Potential impacts, if any, on the Lough Ree SAC and Lough Ree SPA were considered further in this section. Only those features of the project that have the potential to impact on the conservation objectives of the identified Natura 2000 sites were considered. A number of factors were examined at this stage and dismissed due to the very low risk associated with them. The following areas were examined in relation to potential impacts from the proposed development:

- Loss of, or disturbance to, habitats or species; and,
- Potential impairment of water quality during construction.

## 5.1 Loss of, or Disturbance to, Habitats or Species

It is considered that the proposed development will not result in any direct or indirect loss or disturbance to any of the Annex I habitats (refer to Table 4-2) and Annex II species (refer to Table 4-3) for which the Lough Ree SAC is designated or the Annex I bird species (refer to Table 4-4) which the Lough Ree SPA is designated. This assumption is based on the small scale and localised nature of the proposed development and the distance separating the Site from the Natura 2000 sites (ca.14.4km). Furthermore, the on-site habitats which comprise mostly sections of road are not suitable for any of the species for which the SAC and the SPA are designated.

Taking the above into consideration it is considered highly unlikely that the proposed works will have an adverse effect on the Lough Ree SAC and Lough Ree SPA or any of the qualifying habitats or species of interest.

## 5.2 Potential Impairment of Water Quality during Construction

The nearest hydrological feature in close vicinity to the proposed cable route is the Creevyquin Stream. As outlined in Section 3.2, the Creevyquin Stream is hydrologically connected to the Lough Ree SAC and Lough Ree SPA, which are both located ca.14.4km downstream of the cable crossing point. There are eight (8No.) tributaries entering the watercourse prior to discharging into the Natura 2000 sites.

There will be no direct discharges to the watercourse during the construction works for the installation of the cable. The proposed cable route will pass under the Creevyquin Stream using the HDD method, which is used to avoid obstacles such as bridges, waterways, railways, etc., and there by there will be no requirement for works within the stream. Therefore, it is considered highly unlikely that any potential contaminants will reach the stream. Additionally, all construction works will be undertaken in accordance with recognised best practice guidance as outlined in Section 3.4 of this report.

Taking into account the distance separating the Site from the Natura 2000 sites and the best practice measures that will be implemented during the construction of the grid connection, it can be concluded that the proposed development will not have any adverse effects on water quality within the Creevyquin Stream and thus will not have any adverse effects on the water quality of the Lough Ree SAC / SPA downstream.

## 5.3 Analysis of 'In-Combination' Effects

The Habitats Directive requires competent authorities to make an appropriate assessment of any plan or project which is likely to have a significant effect alone or in-combination with other plans and projects. As described above, the project alone is highly unlikely to have any direct or indirect significant effects on the identified Natura 2000 sites.

Taking the above into account, and considering the nature of the small-scale of the project and the best practice measures that will be implemented during the construction of the

proposed underground grid connection, it can be concluded that there will not be any significant in-combination contribution from the project to possible adverse effects on the Lough Ree SAC or Lough Ree SPA.

# 6 SCREENING CONCLUSIONS AND STATEMENT

The screening process has examined the details of the proposed development and has considered the potential for causing adverse effects on Natura 2000 European sites and their qualifying features of interests within a 15km radius of the proposed development.

The designated sites, Lough Ree SAC, the Corbo Bog SAC, the Ballinturly Turlough SAC, the Lisduff Turlough SAC, the Fortwilliam Turlough SAC, the Lough Funshinagh SAC, the Four Roads Turlough SAC, Lough Croan Turlough SAC, Lough Ree SPA, River Suck Callows SPA, Four Roads Turlough SPA and Lough Croan Turlough SPA, are located within a 15km radius of the proposed development.

However, given the nature and scale of the project, the distances separating the Natura 2000 sites from the Site, the fact that there will be no direct discharges to the watercourses and that the proposed cable route will cross underneath the watercourse and existing bridge using HDD, it can be concluded that the proposed development will not result in any adverse effects either directly or indirectly on Natura 2000 sites

In conclusion, activities associated with the proposed development either alone, or in-combination with other projects or land uses, will not have any direct or indirect adverse effects on the conservation objectives of any Natura 2000 European Designated sites. Accordingly, progression to Stage 2 of the Appropriate Assessment process (i.e. preparation of a Natura Impact Statement) is not considered necessary.

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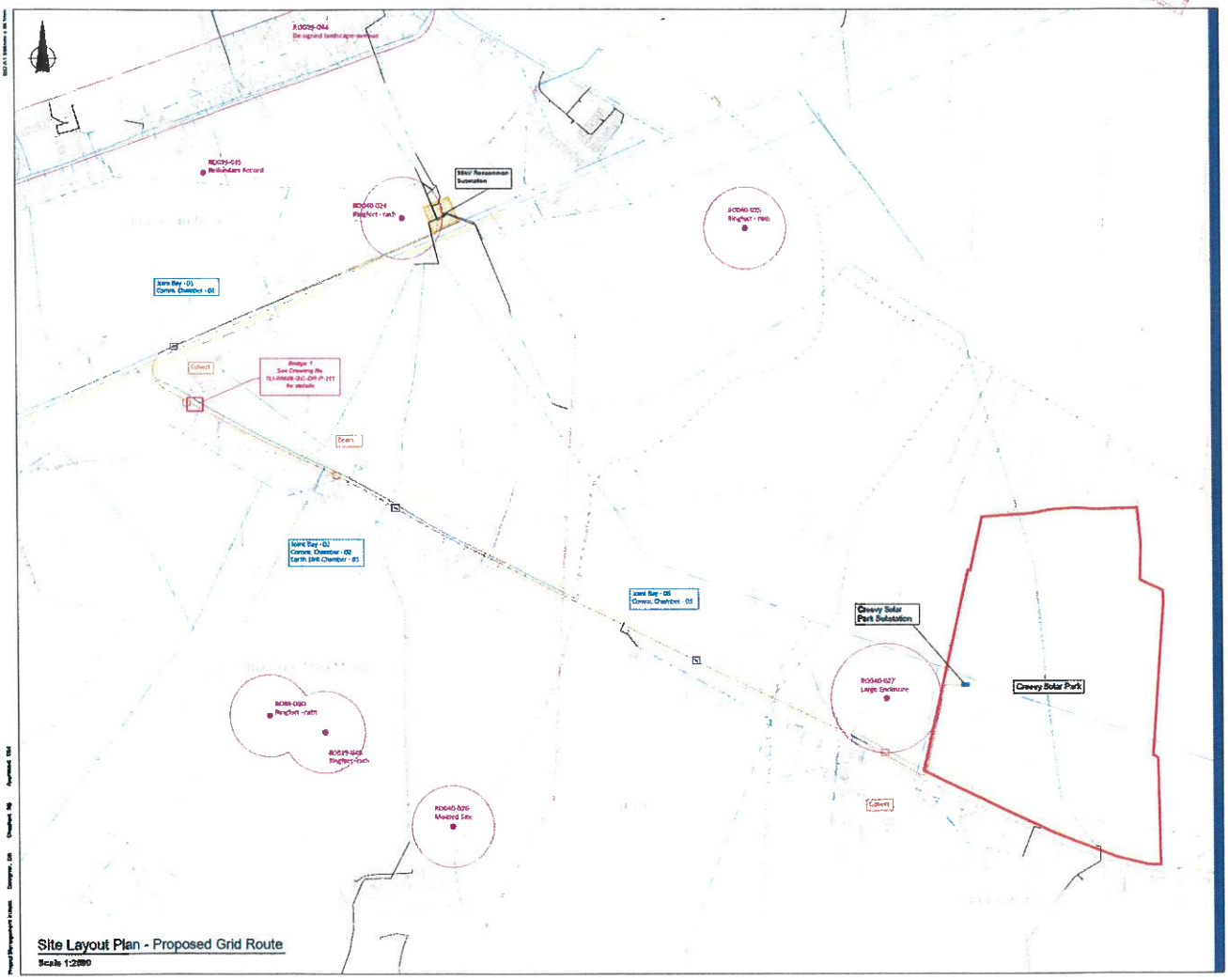
# APPENDICES

# APPENDIX A




tli GROUP

PROJECT
Creevy Solar Park
MV Grid Connection

CLIENT
powercapital
renewable energy

CONSULTANTS

NOTES

LEGEND

ISSUE/REVISION

| No | DATE | DESCRIPTION |
|---|---|---|
| P01 | 31.01.20 | Issued for Section 5 Application |

PROJECT NUMBER
05-689

SHEET TITLE
Site Layout Plan showing Proposed Grid Route

SHEET NUMBER
TLI-05689-GC-DR-P-201

# Outline Construction Methodology

## Creevy Solar Park
## MV Grid Connection



**Report Ref:** 05689-R01-01

**Client:** Power Capital Renewable Energy

| Revision: | Author: | Checked: | Date: | Notes: |
|---|---|---|---|---|
| 00 | DB | RG | 31.01.20 | Issued for Section 5 Application |
| 01 | DB | DM | 05.03.20 | Revised Issue to Client |
| | | | | |

## Table of Contents

# Table of Figures

## 1.0 Introduction

The purpose of this document is to outline and explain the construction techniques and methodologies which will be implemented during the construction of the proposed Creevy Solar Park MV grid connection to the existing ESB owned Roscommon 38kV Substation, Co. Roscommon. The grid connection will consist entirely of underground cable (UGC). The UGC works will consist of the installation of 1 No. power duct in an excavated trench to accommodate 3 No. power cables.

It is intended that this document will be used as an aid to understand the implications of the project on the local environment and landowners. It should be employed during construction and should be read in conjunction with any other specialist reports. In addition, this document is in outline form only and will be revised and updated prior to the commencement of any construction activities, and detailed Method Statements will be prepared in respect of each aspect of the proposed development.

## 2.0 Proposed Grid Connection Route

The proposed grid connection is approximately 1.96km in length and runs in a south westerly direction from the Roscommon 38kV Substation to the permitted Creevy Solar Park Substation. The UGC route largely utilises the public road network with the UGC to be installed in part of the National carriageway (N63) and within the local secondary road route (L-1811). The UGC will be installed in the verges where possible where a clear boundary line exists, however it is expected that the UGC will be installed within the carriageway of the local secondary road for the majority of this route.

As part of the proposed grid connection route it will be necessary to cross one Bridge structure, this will be achieved by horizontal directional drilling (HDD) under the Creevyquin stream.

The exact location of the UGC may be subject to minor modification following a further detailed assessment to be undertaken prior to construction and following consultation with Roscommon County Council and all other relevant stakeholders, having regard for all environmental protection measures required.

Figure 1 outlines the proposed grid connection route, with each section of the route being discussed in detail in Table 2.

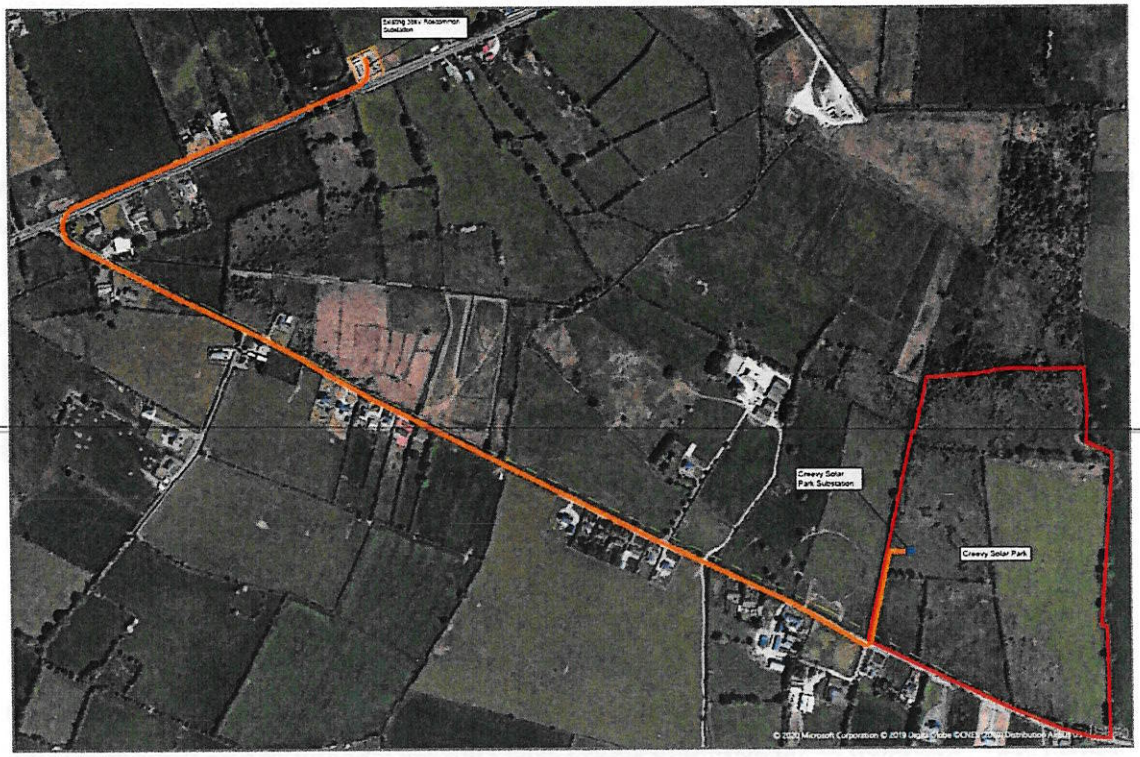



**Figure 1 - Grid Connection Route Location**

**Table 1** of this report summaries the route location features of the grid connection for the proposed route.

| **Table 1 – Approximate Route Location of Preliminary Design** | | |
|---|---|---|
| **ESB Site** | **Public Road** | **Off Road/Private Land** |
| 35m | 1,761m *(Incl. 130m HDD)* | 160m |

**Table 1: Roscommon 38kV Substation to Creevy Solar Park - Route Location Summary**

Table 2 separates the UGC route into a sectional area and describes the specific construction requirements within this section with access routes to the work areas. All plant and equipment employed on the proposed works will be subject to good site organisation and hygiene, particularly during construction activities.

| Table 2 - Summary of Grid Connection Design Route | |
|---|---|
| **Section** | **Description** |
| UGC<br>1.96 km | **Roscommon 38kV SS, N63 National Road and Local Road Network (L-1811)**<br>This grid connection route begins within the Roscommon Substation compound and exits onto the N63 carriageway. It is proposed to trench along the carriageway verge, heading in a south westerly direction initially on exiting the substation. There are existing services within the verge which will need to be identified and avoided as part of the detailed design process for the final UGC route. The UGC route will follow the N63 for circa. 495m where it will be required to cross this National carriageway to access the local secondary road (L-1811).<br>The UGC route merges and carries onto the L-1811 and will continue in a south easterly direction crossing beneath the Creevyquin stream and encountering additional services again within this local road. It is proposed to install the UGC within the carriageway of this local secondary route due to the road being very narrow without any major verges. The UGC traverses within this route for approx. 1.27km until it reaches a disused passageway entrance on the left-hand side of the local road network which accesses the private land (Folio No. RN7473) where the proposed solar park will be situated. The grid connection route will access into the solar boundary with the length circa. 160m of UGC to be installed prior to reaching the location of the Solar Park substation.<br><u>Features</u><br>This section contains 3 No. joint bays. The Joint Bays will be located below ground and finished/reinstated to the required roads specification. Every second joint bay will have an associated link box chamber which will have a surface access hatch which will match existing ground levels.<br>▪ Joint Bay 01 (JB-01) will be located approx. 446m south west of Roscommon 38kV Substation. It is proposed to install the joint bay within the verge of the N63 within the 60km/h speed limit zone.<br>▪ Joint Bay 02 (JB-02) will be located approx. 470m subsequent to the location of JB-01. It is proposed that this Joint Bay will be installed within the carriageway of the local secondary road (L-1811).<br>▪ Joint Bay 03 (JB-03) will be located approx. 473m subsequent to the location of JB-02. It is proposed that this Joint Bay will be installed within the carriageway of the local secondary road (L-1811).<br>Creevy Solar Park substation is proposed to be located 549m east of JB03. This will be the point of termination for the proposed cable route. |

| | |
|---|---|
| | Section contains 1 No. Bridge Structure.<br>▪ Bridge 1 is a stone arch bridge structure with approx. 400mm of cover between the top of the keystone and the road level. It will be necessary to cross this bridge using HDD as there is insufficient cover within the bridge deck to facilitate the power duct while maintaining sufficient cover over the ducts (425mm cover required). The HDD launch and reception pit locations will be selected by the drilling contractor as part of the detailed design phase. A transition chamber will be installed at either side of the HDD as per ESB requirements. |
| | |

**Table 2: Summary of Grid Connection Design Route**

## 3.0 Preliminary Site Investigations

It would be proposed to carry out Preliminary site investigations along the cable route prior to construction to confirm design assumptions.

The following items may be carried out:

### 3.1 UGC Route:

Slit trenches at locations of major service crossings (Full road width).

3 No. trial holes along the route to ascertain ground conditions and thermal resistivity of the soil.

**Traffic Management** – Single lane Closure with Stop/Go system in place for National carriageway (N63) and full road closure for local secondary roadway (L-1811)

**Equipment:**

- 4x4 vehicle
- Concrete vibrator
- Wheeled dumper
- Soil compactor
- 360° tracked excavator (only rubber tracked machines will be allowed on public roads)

## 4.0 UGC Construction Methodology

The proposed UGC will consist of 1 no. 125mm diameter HDPE power cable duct to be installed in an excavated trench, typically 325mm wide x 925mm deep, with variations on this design to adapt to service crossings and watercourse crossings. The ducts will be installed, the trench reinstated in accordance with the local road's authority within Roscommon County Council. The installation of the electrical cabling is pulled through the installed ducts in approximately 450/550m sections. Construction methodologies to be implemented and materials to be used will ensure that the UGC is installed in accordance with the requirements and specifications of ESB.

Where the cable is installed in private lands the location where the cable is laid will depend on several factors, ground conditions, access and the bend radius along route. Excavated material will be stored adjacent to the trench and incorporated into the backfilling where possible. Excess material will be removed off site to a licensed facility.

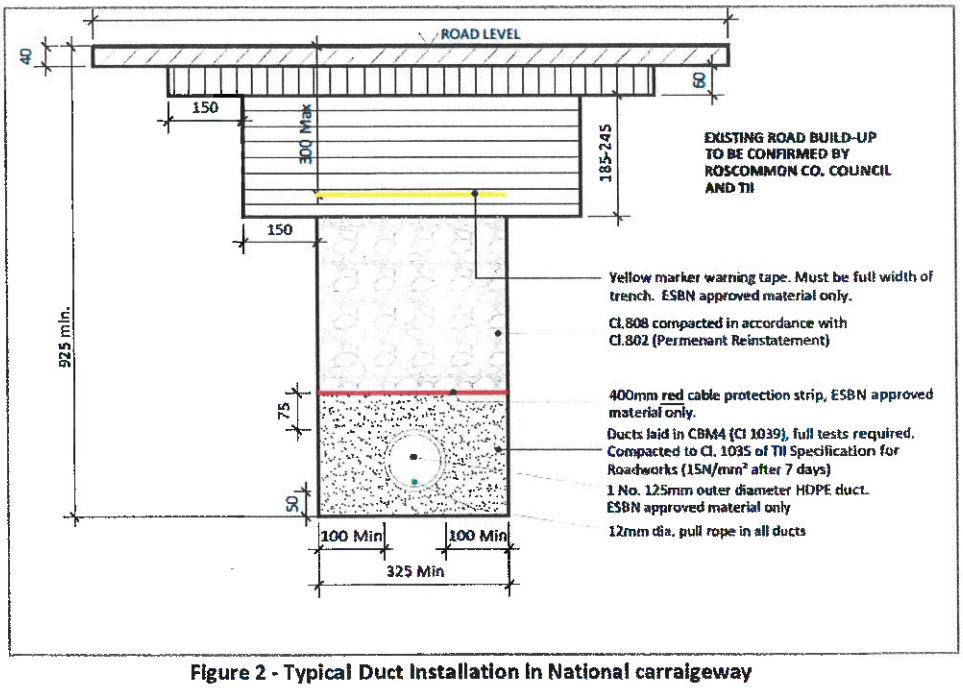



**Figure 2 - Typical Duct Installation in National carraigeway**

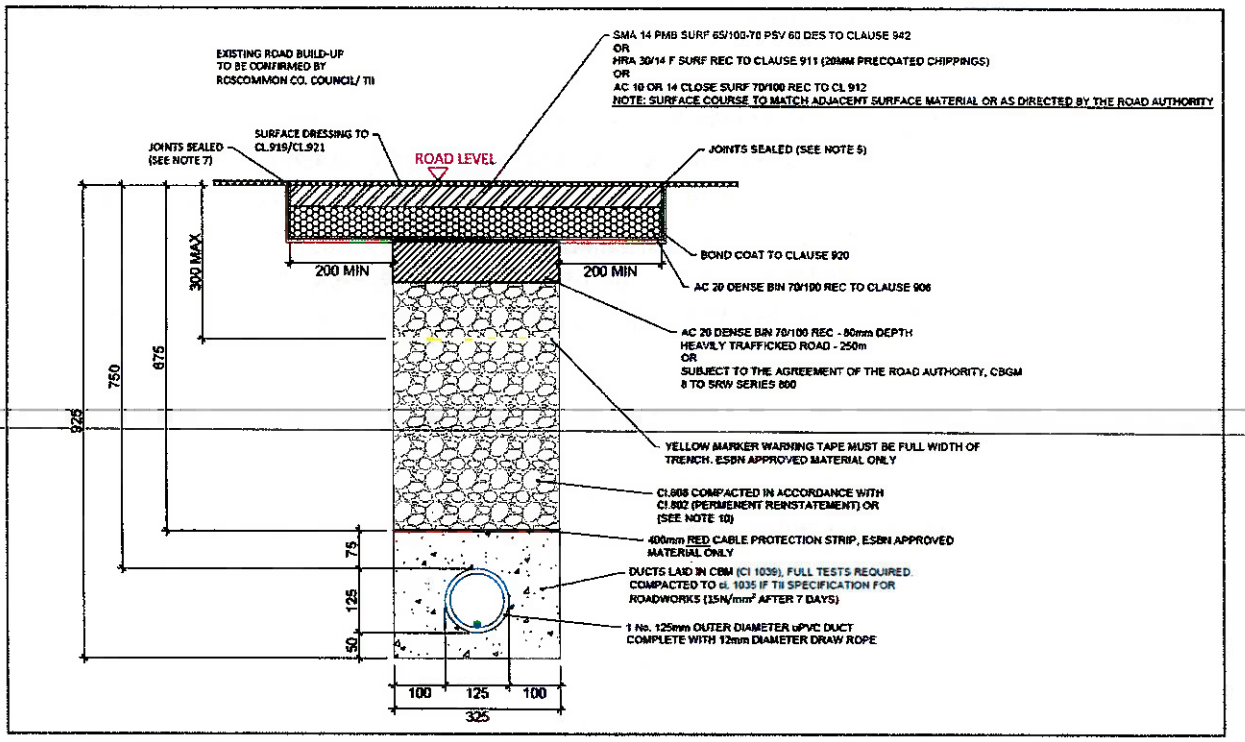



**Figure 3 - Typical Duct Installation in Local Roadway**

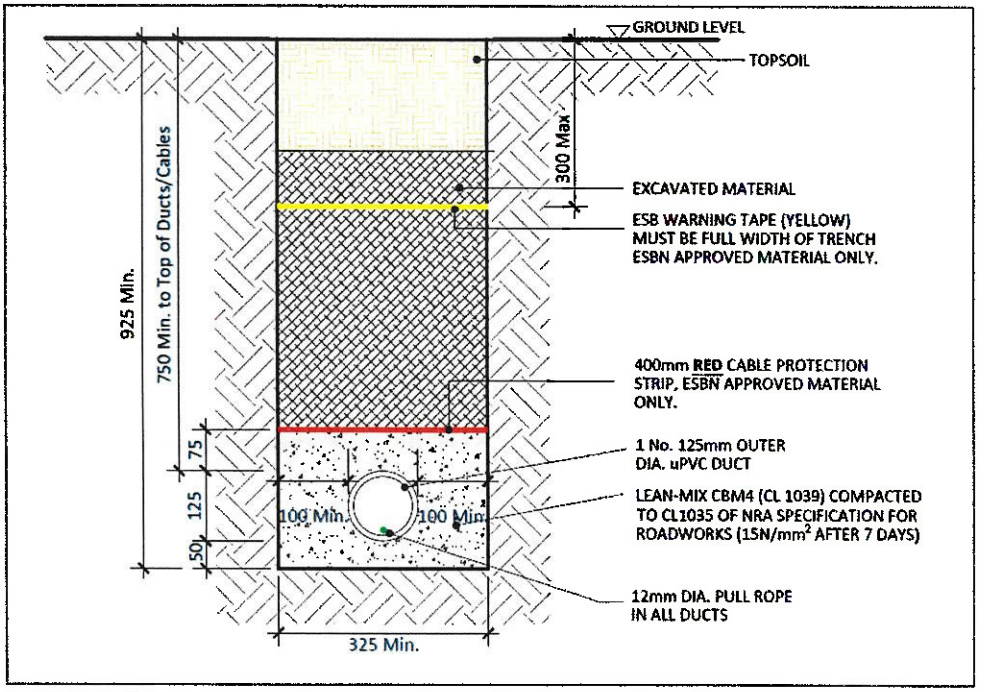



**Figure 4 - Typical Duct Installation through Off Road Section**

Surface cable markers will be placed along the route where cable depth is unavoidably shallow, due to constraints such as existing services, to indicate the precise location of the UGC. These markers will be metallic plates in accordance with ESB standards.

Marker posts will be used on non-roadway routes to delineate the duct route and joint bay positions. Corrosion proof aluminium triangular danger signs, with a 700mm base, and with centred lightning symbol, on fluorescent yellow background shall be installed in adequately sized concrete foundations. Marker posts shall also be placed in the event that burial depth is not to standard. The precise siting of marker posts will be dictated by ESBN as part of the detailed design process.

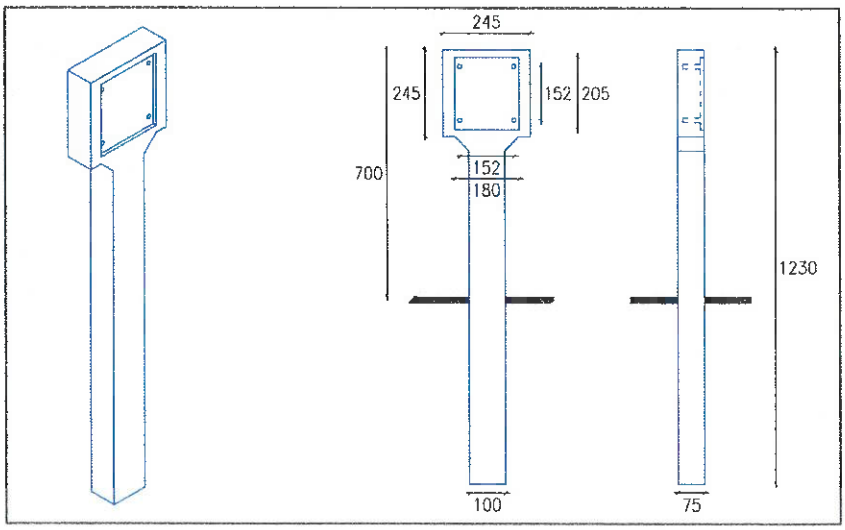



**Figure 5 - ESB Marker Posts**

## 4.1 Trenching Methodology

The following section outlines the methodology to be followed during trenching works:-

- The Contractor, and their appointed Site Manager, will prepare a targeted Method Statement concisely outlining the construction methodology and incorporating all mitigation and control measures included within the section 5 application and accompanying reports and as required by conditions where relevant;
- All existing underground services shall be identified on site prior to the commencement of construction works;
- At watercourse crossings, the contractor will be required to adhere to any environmental control measures required, the detailed Construction Environmental Management Plan (CEMP) to be prepared prior to the commencement of construction, and best practice construction methodologies;
- Where the cable route intersects with culverts, the culvert will remain in place (where possible) and the ducting will be installed either above or below the culvert to provide minimum separation distances in accordance with ESB and Irish Water specifications;
- Traffic management measures will be implemented in accordance with those included in the Traffic Management Report, and a detailed Traffic Management Plan will be prepared and agreed with Roscommon County Council;

- The excavated trench will be approximately 325mm in width and approximately 925mm deep both within the national and local road network and within private lands;
- The base of the excavated trench will be lined with sand bedding to be imported to site from a local licensed supplier. The 125mm diameter HDPE cable duct will be placed into the prepared trench, inspected and backfilled as per Figures 2 & 3;
- Excavated material shall be employed to backfill the trench where appropriate and any surplus material will be transported off site and disposed of at a fully authorised soil recovery site;
- Any earthen (sod) banks to be excavated will be carefully opened with the surface sods being stored separately and maintained for use during reinstatement;
- The excavated trench will be dewatered if required, from a sump installed within the low section of the opened trench. Where dewatering is required, dirty water will be fully and appropriately attenuated, through silt bags, before being appropriately discharged to vegetation or surface water drainage feature;
- Where required, grass will be reinstated by either seeding or by replacing with grass turves;
- No more than a 100-metre section of trench will be opened at any one time. The second 100 metres will only be excavated once the majority of reinstatement has been completed on the first;
- The excavation, installation and reinstatement process will take on average of 1 No. day to complete a 100m section;
- Where the cable is being installed in a roadway, temporary reinstatement may be provided to allow larger sections of road to be permanently reinstated together;
- Works will only be conducted in normal working hours of Monday to Friday 08:00 to 20:00 and Saturday 08:00 to 18:00, with no works on Sundays or Bank Holidays except in exceptional circumstances o in the event of an emergency;
- Following the installation of ducting, pulling the cable will take approximately 1 No. day between each joint bay, with the jointing of cables taking approximately 1 No. day.

**Equipment:**

- 2-3 General Operatives;
- 1 Excavator Operator;
- 1 no. tracked excavator (only rubber tracked machines will be allowed on public roads);
- 1 no. dumper or tractor and trailer.

**Materials:**

- Sand for pipe bedding;
- Ready-mix Concrete where necessary (delivered to site);
- Trench backfilling material (excavated material and aggregates) to relevant specifications;
- 125mm diameter HDPE ducting;
- Temporary Surface Reinstatement Materials.

## 4.2 Managing Excess Material from Trench

All excavated material will be temporarily stored adjacent to the trench prior to re-use in the trench reinstatement (where applicable). Stockpiles will be restricted to less than 2m in height. Where excess material exists, it will be disposed of to a licensed facility.

## 4.3 Storage of Plant and Machinery

All plant, machinery and equipment will be stored on site within the works area or within the temporary construction compound to be located within the permitted Creevy Solar park. Oils and fuels will not be stored on site and will be stored in an appropriately bunded area within the temporary storage compound.

## 4.4 Joint Bays and Associated Chambers

Joints Bays are to be provided approximately every 450m - 550m along the UGC route to facilitate the jointing of 2 No. lengths of UGC. Joint Bays are typically 1.6m x 2.9m x 1.2m pre-cast concrete structures installed below finished ground level. Joint Bays will be located in the non-wheel bearing strip of roadways, given the profile of the national road, this option will be possible.

In association with Joint Bays, Earth Sheath Link Chambers are also required approximately every second joint bay along the cable route. Earth Sheath Links are used for earthing and bonding cable sheaths of underground power cables, so that the circulating currents and induced voltages are eliminated or reduced. Earth Sheath Link Chambers are located in close proximity to Joint Bays. Earth Sheath Link Chambers will typically be pre-cast concrete structures with an access cover at finished surface level.

The precise siting of all Joint Bays and Earth Sheath Link Chambers is subject to approval by ESBN. Marker posts will be used on non-roadway routes to delineate the duct route and joint bay positions. The marker posts will consist of a corrosion proof aluminium triangular danger sign, with 750mm base, and with centred lightning symbol, on engineering grade fluorescent yellow background. They will be installed in adequately sized concrete foundations and will also be placed where the cable has not been buried to the standard depth, due to existing road conditions.

**Equipment:**

- 2-3 General Operatives
- 1 Excavator Operator
- 360˚ tracked excavator (only rubber tracked machines will be allowed on public roads)
- 1 no. tracked dumper or tractor and trailer

**Materials:**

- Sand for pipe bedding
- Ready-mix Concrete where necessary (delivered to site);
- Trench backfilling material (excavated material and aggregates) to relevant specifications;
- 125mm diameter HDPE ducting
- Precast Chamber Units / Construction materials for chambers

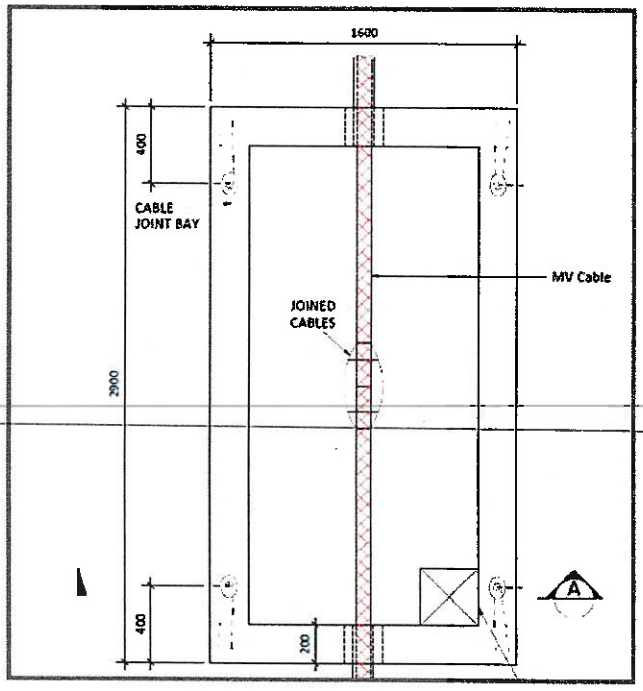



**Figure 6 - Typical MV Joint Bay Plan Details**

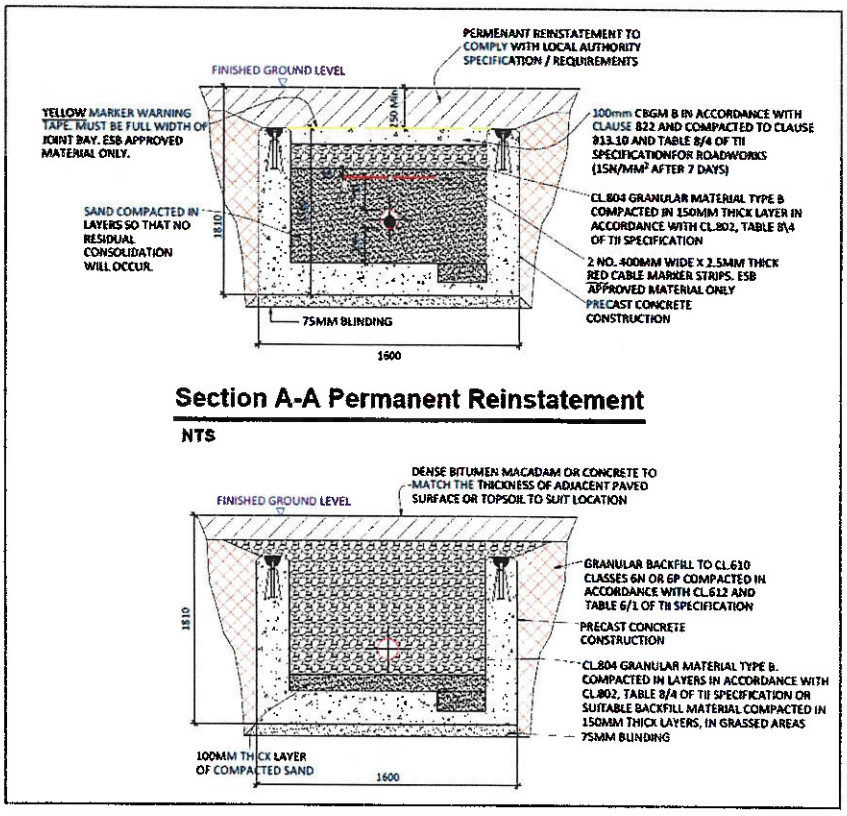



**Figure 7 - Typical MV Joint Bay Detail**

### 4.5 Horizontal Direction Drilling (HDD)

Horizontal Direction Drilling (HDD) is a method of drilling under obstacles such as bridges, railways, water courses, etc. in order to install cable ducts under the obstacle. This method is employed where installing the ducts using standard installation methods is not possible. There is one bridge on this UGC route which will require HDD due to there being insufficient cover and depth in the bridge to cross within the bridge deck. The proposed drilling methodology is as follows: -

1. A works area of circa .40m$^2$ will be fenced on both sides of the stream crossing,
2. The drilling rig and fluid handling units will be located on one side of the bridge and will be stored on double bunded 0.5mm PVC bunds which will contain any fluid spills and storm water run-off.
3. Entry and exit pits (1m x 1m x 2m) will be excavated using an excavator, the excavated material will be temporarily stored within the works area and used for reinstatement or disposed of to a licensed facility.
4. A 1m x 1m x 2m steel box will be placed in each pit. This box will contain any drilling fluid returns from the borehole.
5. The drill bit will be set up by a surveyor, and the driller will push the drill string into the ground and will steer the bore path under the watercourse.
6. A surveyor will monitor drilling works to ensure that the modelled stresses and collapse pressures are not exceeded.
7. The drilled cuttings will be flushed back by drilling fluid to the steel box in the entry pit.
8. Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit pit and will pull a drill pipe back through the bore to the entry side.
9. Once all bore holes have been completed, a towing assembly will be set up on the drill and this will pull the ducting into the bore.
10. The steel boxes will be removed, with the drilling fluid disposed of to a licensed facility.
11. The duct will be cleaned and proven and their installed location surveyed.
12. The entry and exit pits will be reinstated to the specification of ESB Networks and Roscommon County Council.
13. A joint bay or transition chamber will be installed on either side of the bridge following the horizontal directional drilling as per ESB requirements.

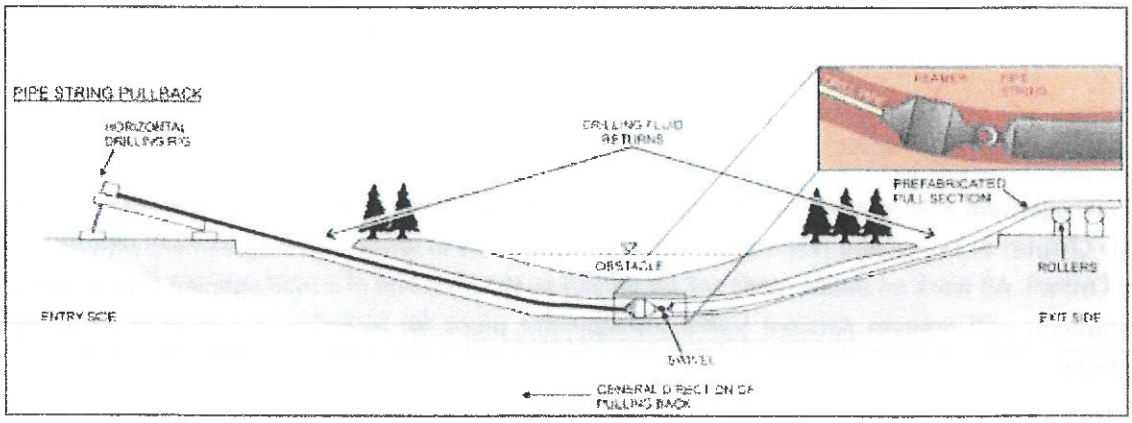



**Figure 8 - Typical HDD Installation**

## 5.0 Access Routes to Work Area

The section of the proposed underground cable which will be installed within the public road network will be accessed via the existing road network. Where the cable route is located on private lands, contractor(s) will be required to utilise the local public road network in the vicinity of the work area and from there utilise private access gates and tracks, where appropriate. Prior to the commencement of development, precise access arrangements will be agreed with the respective landowners.

Temporary access roads on private land (if required due to ground conditions and/or landowner requirements) will consist of timber or aluminium bog mats (Figure 9) to spread the weight of machinery over a greater area to prevent damage to the ground. If necessary, a low ground pressure excavator may also be utilised. This machine is designed to spread its weight across a wider area thereby reducing the pressure exerted on the ground. No invasive works will be undertaken when placing the matting. Upon completion of the works, all mats will be removed immediately. Access routes will be carefully selected to avoid any damage to land. Local consultation will be carried out with all relevant landowners to ensure that any potential disturbance will be minimised. Prior to the commencement of construction, the contractor will assess all access routes and determine the requirement for bog mats. Any such requirements will be incorporated into the relevant method statement.

**Figure 9 - Temporary Aluminium Panel Tracks**

## 6.0 Traffic Management

Traffic management and road signage will be in accordance with the Department of Transport: Traffic Signs Manual - Chapter 8: Temporary Traffic Measures and Signs for Road Works and in agreement with Roscommon County Council. All work on public roads will be subject to the approval of a road opening license application. The contractor will prepare detailed traffic management plans for inclusion as part of the road opening applications.

Where road widths allow, the UGC installation works will allow for one side of the road to be open to traffic at all times by means of a 'Stop/Go' type traffic management system, where a minimum 2.5m roadway will be maintained at all times. Temporary traffic signals will be implemented to allow road users safely pass through

the works area by channelling them onto the open side of the road. Typically, the UGC will be installed in 100m sections, and no more than 100m will be excavated without the majority of the previous section being reinstated. Where the construction requires the crossing of a road, works on one carriageway will be completed before the second carriageway is opened, to maintain traffic flows.

All construction vehicles will be parked within the works area so as not to cause additional obstruction or inconvenience to road users or residents. The traffic signals will be in place prior to the works commencing and will remain in place until after the works are completed. The public road will be checked regularly and maintained free of mud and debris. Road sweeping will be carried out as appropriate to ensure construction traffic does not adversely affect the local road condition.

In the event of emergency; steel plates, which will be available on site, can be put in place across the excavation to allow traffic to flow on both sides of the road.

All traffic management measures will be incorporated into a detailed Traffic Management Plan to be prepared, in consultation with Roscommon County Council, prior to the commencement of development.

## 7.0 Road Opening Licence

The proposed UGC works will require a road opening licence under Section 254 of the Planning and Development Act 2000-2015 from Roscommon County Council. A Traffic Management Plan (TMP) will be agreed with Roscommon County Council prior to the commencement of the development. This TMP will outline the location of traffic management signage, together with the location of any necessary road closures and the routing of appropriate diversions. Where diversions are required, these will be agreed with Roscommon County Council in advance of the preparation of the TMP.

## 8.0 Relocation of Existing Services

In order to facilitate the installation of the proposed UGC, it may be necessary to relocate existing underground services such as water mains, telecom or existing cables. In advance of any construction activity, the contractor will undertake additional surveys of the proposed route to confirm the presence or otherwise of any services. If found to be present, the relevant service provider will be consulted with in order to determine the requirement for specific excavation or relocation methods and to schedule a suitable time to carry out works.

### 8.1 Underground Cables

If existing underground cables are found be present, a trench will be excavated, and new ducting and cabling will be installed along the new alignment and connected to the network on either end. The trench will be backfilled with suitable material to the required specification. Warning strip and marking tape will be laid at various depths over the cables as required. Marker posts and plates will be installed at surface level to identify the new alignment of the underground cable, with the underground cables will then be re-energised.

### 8.2 Gas Networks

Consultation with Gas Networks Ireland must take place before starting works where gas pipes are present. Gas Networks Ireland will advise on the safety measures required and will arrange for the exact location of the pipe to be marked out on site.

### 8.3 Water Mains

The water supply will be turned off by the utility so work can commence on diverting the service. The section of existing pipe will be removed and will be replaced with a new pipe along the new alignment of the service. The works will be carried out in accordance with the utility standards.

## 9.0 Cable pulling

Once the ducting is installed the electrical cables (situated on a drum) are pulled through the ducting by a specialised mechanical winch. The winch will also monitor the tension on the cables being pulled so as not to damage the cables. A guide rope is installed with the ducting to assist in the cable pulling process. The guide rope also is used for proving the ducts by attaching a mandrel, a sponge or brush, for cleaning the duct installed. Cable lubricant is applied to the outside of the cables being pulled through the duct. The lubricant assists in the pulling process by removing friction between the cable and the rollers. This not only speeds up the process but also prevents snagging and therefore damage to the cable.

## 10.0 Reinstating the Land

Once all works are complete, the access route and the construction areas around the structures are restored to their original condition. Generally, this work is carried out by a specialised agricultural contractor and is carried in accordance with the relevant IFA agreements and in consultation with the individual landowner. In the case of a roadway reinstatement, the reinstatement width, materials and finish will be provided in accordance with Local Authority and Department of Transport requirements.

## 11.0 Emergency Response Plan

All site personnel will be inducted in the provisions of the Emergency Response Plan. The following outlines some of the information, on the types of emergency, which must be communicated to site staff (list not exhaustive);

- Release of hazardous substance - Fuel or oil spill
- Concrete spill or release of concrete
- Flood event – extreme rainfall event
- Environmental buffers and exclusion zones breach
- Housekeeping of materials and waste storage areas breach
- Stop Works order due to environmental issue or concern

The Emergency Response Plan must be completed by the appointed Contractor before the project begins.

## 12.0 Best Practice Design and Construction Methodology

Prior to commencement of construction works the contractor will draw up a detailed Method Statement/Environmental Operating Plan which will be based on best practice measures. This method statement will be adhered to by the contractors and will be overseen by the project representative/foreman. The proposed works will be carried out in accordance with the following best practice construction measures:

- If required, an ecological clerk of works shall be engaged to periodically inspect all elements of the works for their entire duration;
- All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction;
- During the construction period appropriate containment measures, sandbag or similar, shall be installed on site where material is required to be stored temporarily, thus ensuring adequate protection in silt-laden runoff draining off site;
- Weather conditions will be considered when planning construction activities to minimise risk of run off from site;
- If very wet ground must be accessed during the construction process bog mats will be used to enable access to these areas by machinery. Temporary roads/access tracks will not be constructed;
- The Contractor shall ensure that all personnel working on site are trained in pollution incident control response. A regular review of weather forecasts of heavy rainfall is required and the
    - Contractor is required to prepare a contingency plan for before and after such events;
- The Contractor will carry out visual examinations of watercourses receiving flows from the proposed works during the construction phase to ensure that sediment is not above baseline conditions;
- Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows.
- Storage of hydrocarbons or any polluting chemicals will only occur within the designated construction compound. Any diesel or fuel oils stored within the construction compound will be bunded to 110% of the capacity of the storage tank. Re-fuelling of plant will only occur within designated bunded refuelling areas. Design and installation of fuel tanks to be in accordance with best practice guidelines BPGCS005, oil storage guidelines. Drip trays and spill kits will be kept available on site.
- Only emergency breakdown maintenance will be carried out on site. Emergency procedures and spillage kits will be available and construction staff will be familiar with emergency procedures.
- Appropriate containment facilities will be provided to ensure that any spills from the vehicle are contained and removed off site. Adequate stocks of absorbent materials, such as sand or commercially available spill kits shall be available;
- Where dust suppression is considered to be required by the Contractor, such requirements and methodology shall be subject to the agreement with the Ecological Clerk of Works;
- Entry by plant equipment, machinery, vehicles and construction personnel into watercourses or wet drainage ditches shall not be permitted. All routes used for construction traffic shall be protected against migrant of soil or waste water into watercourses;
- Cabins, containers, workshops, plant, materials storage and storage tanks shall not be located near the surface water channels;

## 13.0 Invasive Species Best Practice Measures

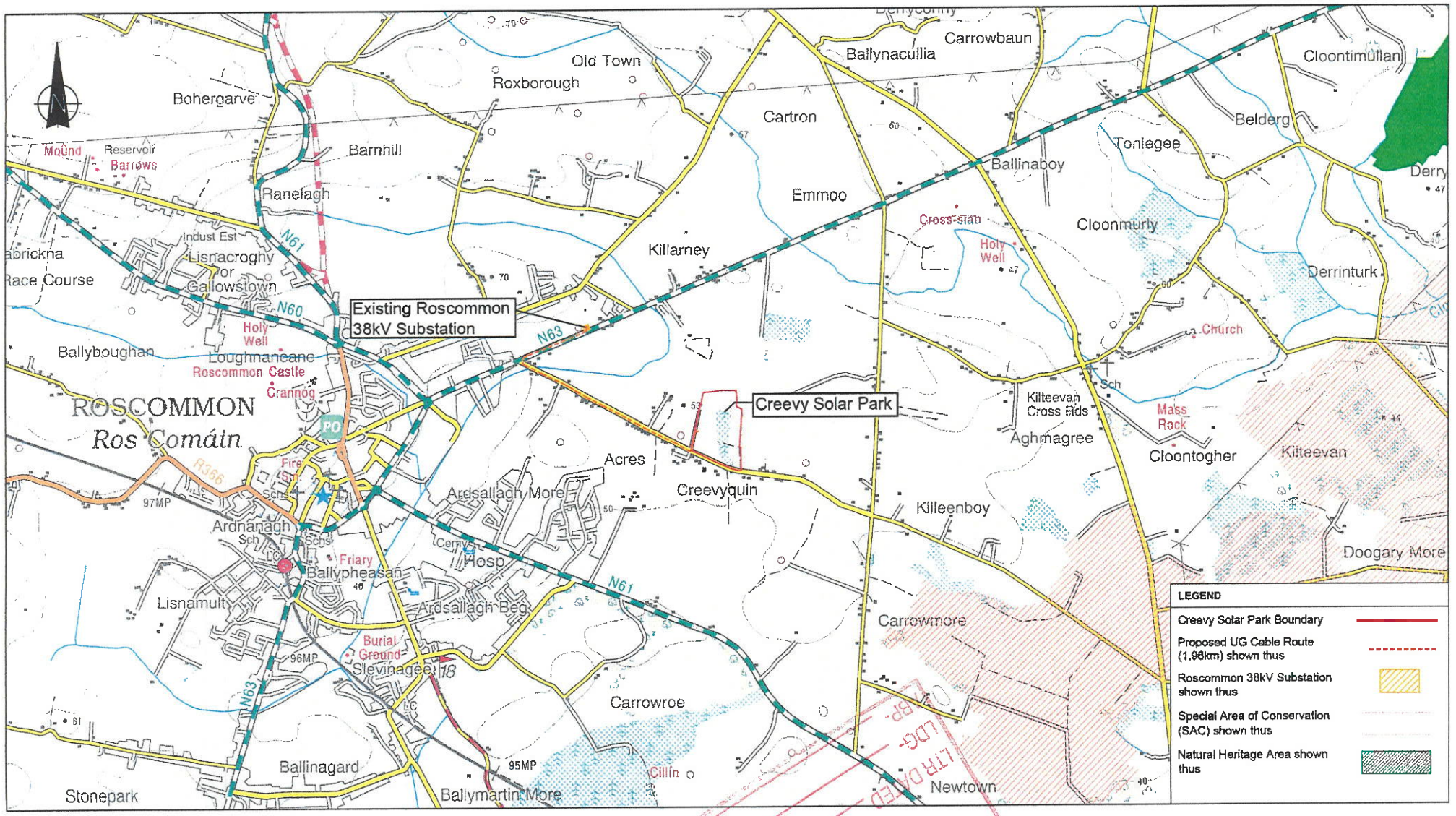
Invasive species can be introduced into a location by contaminated vehicles and equipment, in particular tracked vehicles, which were previously used in locations that contained invasive species. Good site organisation and hygiene shall be maintained at all times on a site, particularly during construction activities. The following best practice measures form part of the construction methodology and will help to contain and/or prevent the introduction of invasive species on the site as follows:

- When deemed necessary, all plant and equipment employed on the proposed works (e.g. diggers, tracked machines, footwear etc.) will be thoroughly cleaned down using a power washer unit, and washed into a dedicated and contained area prior to arrival on site and on leaving site to prevent the spread of invasive aquatic / riparian species such as Japanese knotweed *Fallopia japonica* and Himalayan Balsam *Impatiens glandulifera*. A sign off sheet will be maintained by the contractor to confirm cleaning.
- Material gathered in the dedicated and contained clean down area will need to be appropriately treated as contaminated material on site.
- For any material entering the site, the supplier must provide an assurance that it is free of invasive species.
- Ensure all site users are aware of invasive species management plan and treatment methodologies. This can be achieved through "toolbox talks" before works begin on the site.
- Adequate site hygiene signage should be erected in relation to the management of non-native invasive material.

## 14.0 Waste Management

All waste arising during the construction phase will be managed and disposed of in a way that ensures the provisions of the Waste Management Act 1996 and associated amendments and regulations of the Waste Management Plan are followed.

Project Management Initials: Designer: DB Checked: RG Approved: SK ISO A3 297mm x 420mm




## Overall Site Location Map

**Scale 1:25,000**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CLIENT
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PROJECT
Creevy Solar Park
MV Grid Connection

SHEET TITLE
Overall Site Location Map

PROJECT NUMBER
05-689

SHEET NUMBER
TLI-05689-GC-DR-P-200

DRAWING STATUS
Section 5 Application

| ISSUE/REVISION | | |
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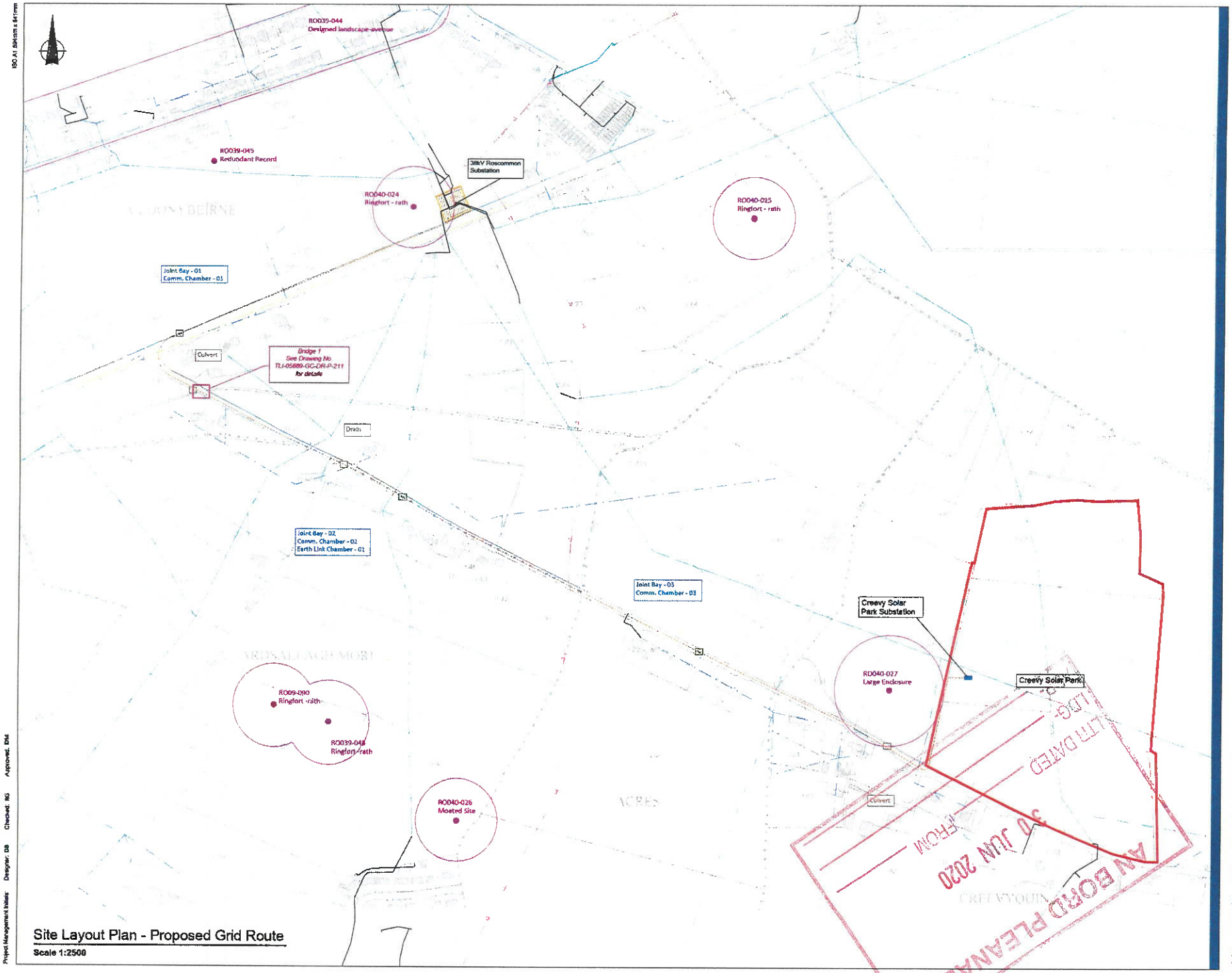
| P01 | 31.01.20 | Issued for Section 5 Application |
| I/R | DATE | DESCRIPTION |




## Site Layout Plan - Proposed Grid Route

Scale 1:2500

ISO A1 594mm x 841mm

Project Management Initials: Designed: DB Checked: RG Approved: DM

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PROJECT

**Creevy Solar Park**
**MV Grid Connection**

CLIENT

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CONSULTANTS

NOTES

LEGEND -

Roscommon 38kV Substation shown thus

Creevy Solar Farm Boundary

Proposed UG Cable Route (1.96 km) shown thus

Existing ESB ohL 110kV & 38kV Network shown thus

Existing ESB Underground HV cable shown thus

Existing ESB LV/MV Networks shown thus

Existing ESB Underground LV/MV cable shown thus

Existing Eircom Underground/ Overhead line shown thus

Existing Irish Water Network shown thus

Existing Lake, River / Stream Network shown thus

Recorded Monuments & associated Zone of Notification denoted thus

ISSUE/REVISION

| BY | DATE | DESCRIPTION |
|---|---|---|
| PW | 31.01.20 | Issued for Section 5 Application |

PROJECT NUMBER

05-689

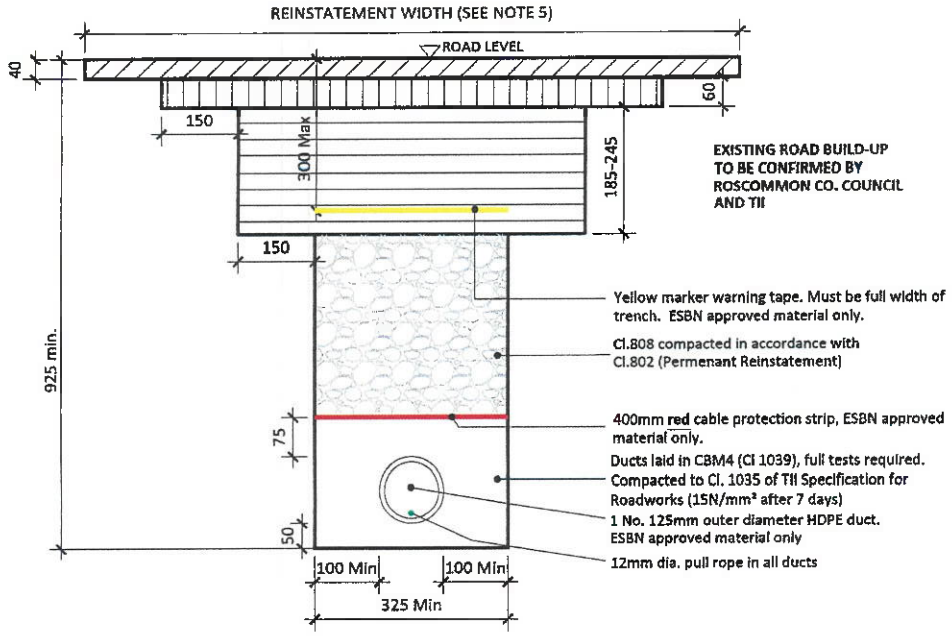
SHEET TITLE

Site Layout Plan showing
Proposed Grid Route

SHEET NUMBER

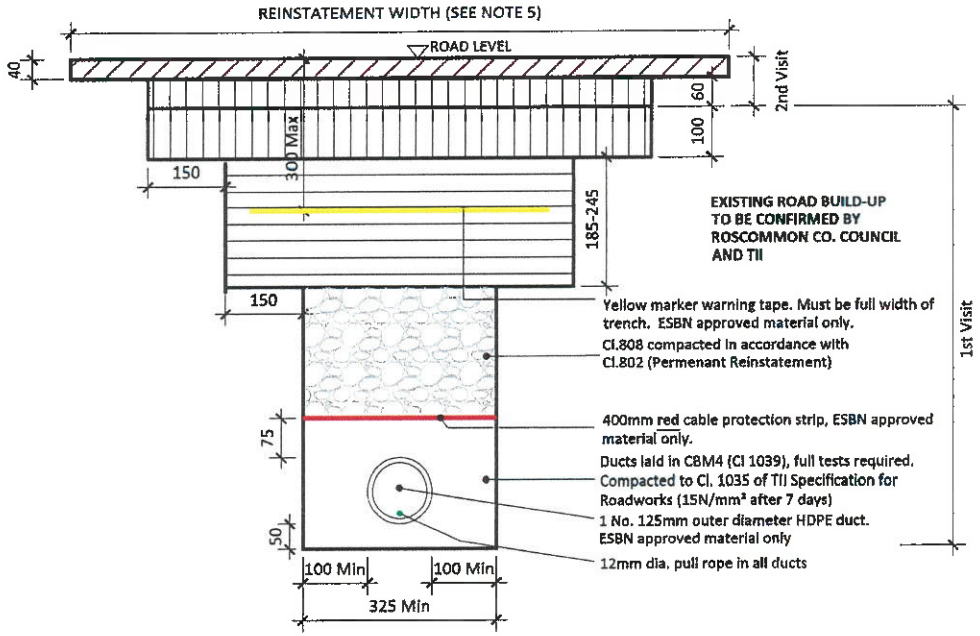
TLI-05689-GC-DR-P-201

SCALE 1:10




## All Permanent Reinstatement (Flexible Road)

SCALE 1:10

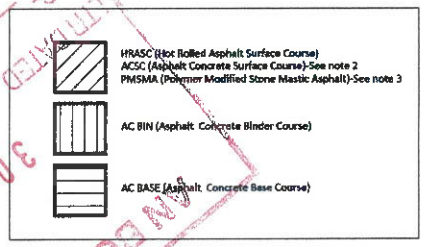



## Permanent Binder Course Reinstatement (Flexible Road)

NOTES:

Ref. Specification for the reinstatement of openings in National Roads CC-SPW04007

1. Sub-base in accordance with appendix A3.3
2. AC surface course not permitted on high speed roads (refer to A2.3).
3. Where 10mm PMSMA is used on the surface course the thickness is reduced to 30mm and the binder course increased accordingly.
4. Refer to figure S6.4 for further details on surface course reinstatement and stepped joints at binder course level
5. Refer to figure A3.4 of this appendix for details on reinstatement requirements at locations where existing surface course material is greater than 5 years old.
6. For alternative reinstatement materials refer to appendix A9
7. This drawing is to be read in conjunction with relevant drawings, specifications and reports.
8. This design is subject to ESB approval and should be used for information purposes only.
9. Dimensions are in millimeters, unless noted otherwise. Drawings are not to be scaled use figured dimensions only.
10. Existing road build up and reinstatement requirements to be confirmed with Roscommon Co.Co. / TII



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PROJECT: Creevy Solar Park
MV Grid Connection

PROJECT NUMBER: 05-689

SHEET NUMBER: TLI-05689-DR-GC-P-202

DRAWING STATUS: Section 5 Application

SHEET TITLE: Ducting Through National Flexible Road

| ISSUE/REVISION | | |
|---|---|---|
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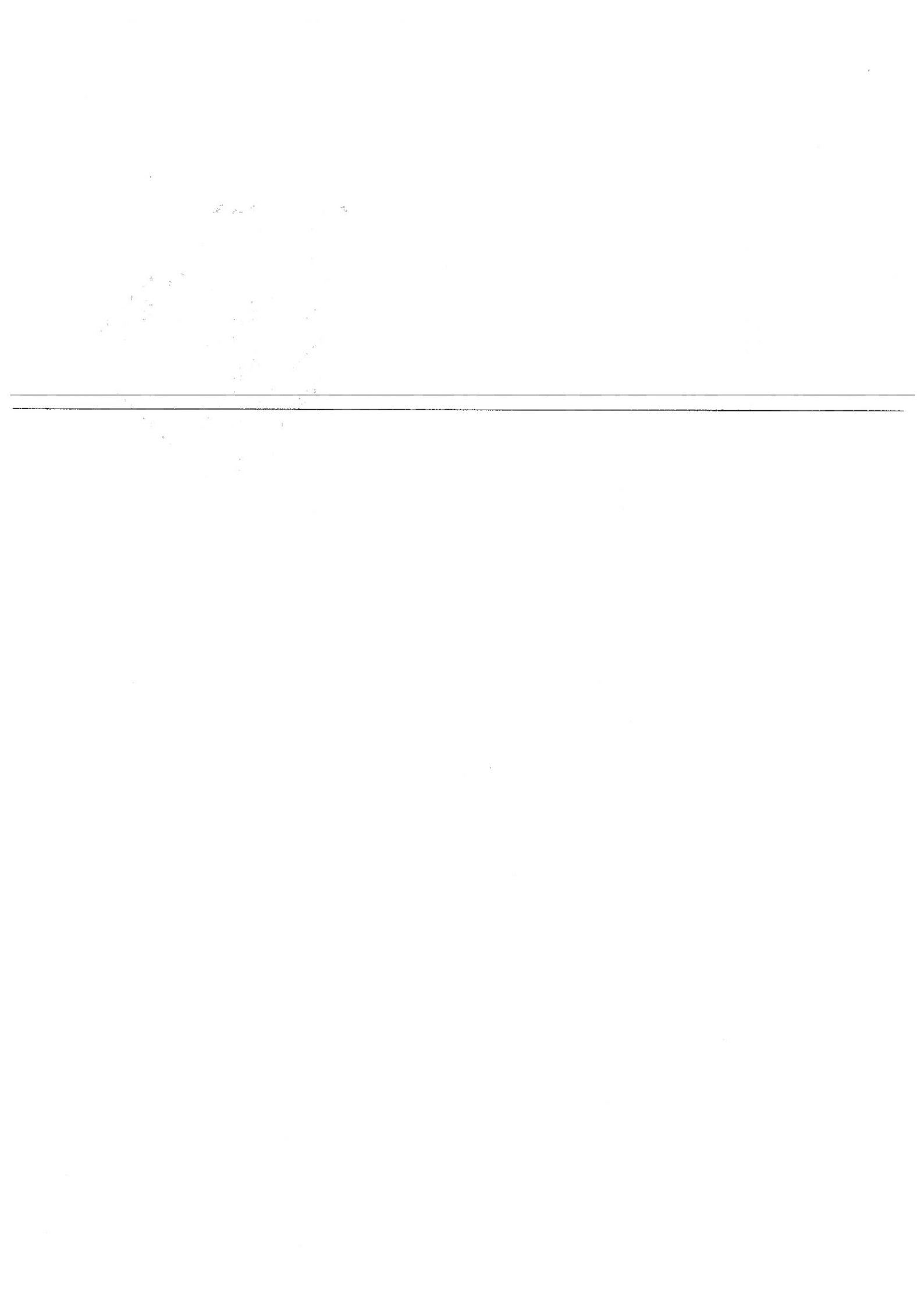
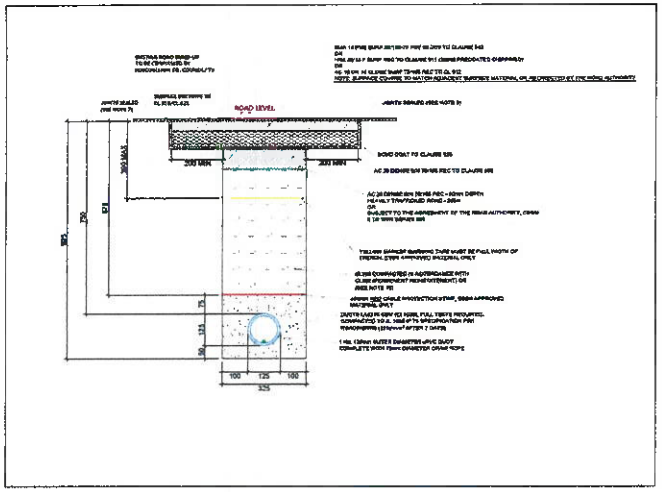
| P01 | 31.01.20 | Issued for Section 5 Application |
| I/R | DATE | DESCRIPTION |



ISO A1 594mm x 841mm

## Permanent Reinstatement

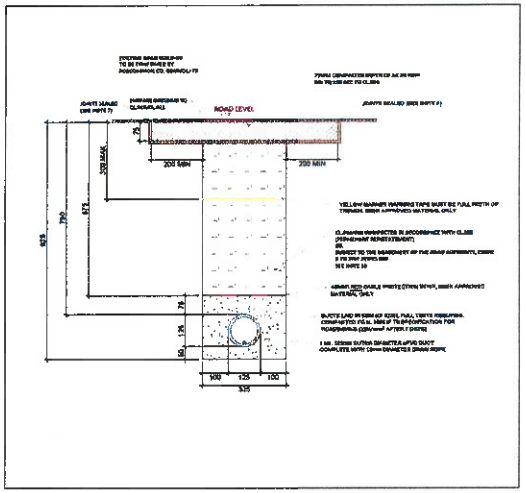
Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD4




**Typical Section Through Permanent Reinstatement of Longitudinal Opening in Roadway**

SCALE 1:10

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD5




**Typical Section Through Permanent Reinstatement of Longitudinal Opening in Dressed Rural Unbound Roadway**

SCALE 1:10

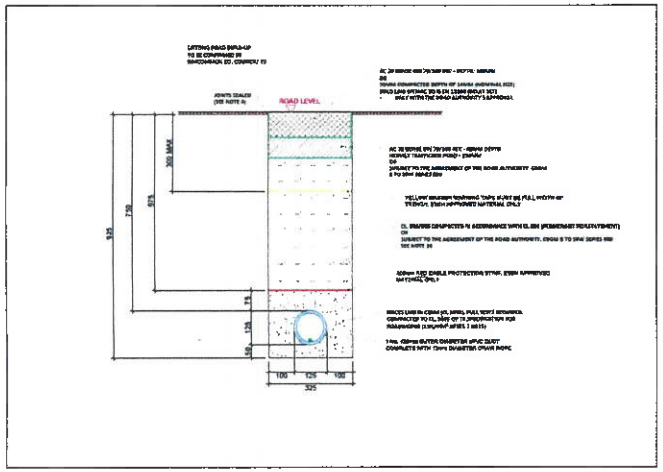
**ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AREA ENGINEERS REQUIREMENTS AND GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS**

Note:

1. Refer to Guidelines for managing Openings in Public Roads (Purple Book - April 2017), Chapter 6 'Specifications' for guidance on Duct type / colour and Marker Tape type / colour.
2. All bound edges shall be saw cut to expose the full vertical thickness of each layer prior to excavation. All edges shall be essentially straight, smooth and vertical.
3. Where a temporary surface has been used, material shall be planed out to the depth specified in this drawing. The new permanent surface shall be machined laid and mechanically compacted with a vibrating roller.
4. Where the trimmed edge of excavation is within 400mm* of a joint / edge, ironwork or other reinstatement, this trimmed edge shall be extended to include same and the area of reinstatement shall be extended accordingly (* increase to 800mm where this is pre-existing practice).
5. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
6. Clause 808 or Cement Bound Granular Material surface to be sprayed per clause 920 prior to application of Asphalt Concrete Layer.
7. Joint sealer shall be a hot 50 pen bitumen binder or cold thixotropic bitumen 50-70 pen to be applied to all vertical cuts in accordance with B.S.594987 prior to application of bituminous materials.
8. For roads without asphalt concrete surface (e.g. may be Cl.804 with double surface dressing), the road authority may as its discretion permit the temporary reinstatement surface of asphalt concrete to be regulated in lieu of excavation and reinstatement; and subsequently surface dressed.
9. On highly trafficked roads services must have a minimum cover of 750mm.
10. Where required by the Road authority the trench may be reinstated with a Cement Bound Granular Material.

## Temporary Reinstatement

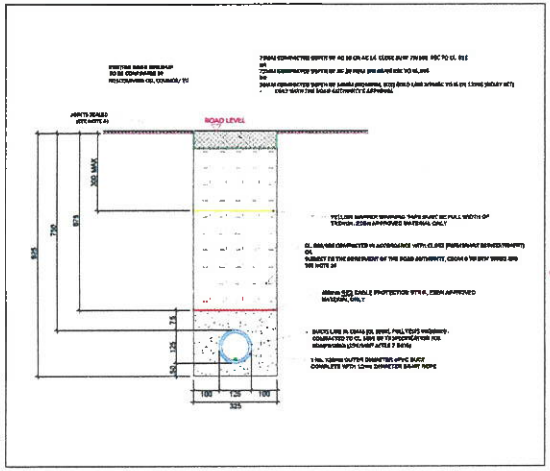
Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD1




**Typical Section Through Temporary Reinstatement of Longitudinal Opening in Roadway**

SCALE 1:10

Reinstatement details based on Guidelines for Managing Openings in Public Roads - SD2




**Typical Section Through Temporary Reinstatement of Longitudinal Opening in Dressed Rural Unbound Roadway**

SCALE 1:10

**ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AREA ENGINEERS REQUIREMENTS AND GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS**

Note:

1. Refer to 'Guidelines for managing Openings in Public Roads (Purple Book - April 2017)', Chapter 6 'Specifications' for guidance on Duct type / colour and Marker Tape type / colour.
2. All bound edges shall be saw cut to expose the full vertical thickness of each layer prior to excavation. All edges shall be essentially straight, smooth and vertical.
3. Clause 808 surface to be sprayed per clause 920 prior to application of Asphalt Concrete Layer.
4. Joint sealer shall be a hot 50 pen bitumen binder or cold thixotropic bitumen 50-70 pen to be applied to all vertical cuts in accordance with B.S. 594987 prior to application of bituminous materials.
5. Licence holder must maintain temporary reinstatement to a safe and acceptable standard.
6. Any damaged area adjacent to the opening and resulting from the excavation operation shall be included within the area to be reinstated.
7. Temporary Road Surface warning signs must be used in accordance with the Traffic Signs Manual (Chaper 8 - Temporary Traffic Measures and Signs for Roadworks).
8. Refer to detail Permanent Reinstatement of Road for advice on permanent reinstatement - all permanent reinstatement shall be carried out when adequate settlement has occurred as determined by the Road Authority.



Project Management Initials: DB Designed: DB Checked: RG Approved: DM

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PROJECT

Creevy Solar Park
MV Grid Connection

CLIENT

powercapital
renewable energy

CONSULTANTS

NOTES: -

- This drawing is to be read in conjunction with relevant drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise. Drawings are not to be scaled use figured dimensions only
- Existing road build up and reinstatement requirements to be confirmed with Roscommon Co.Co

LEGEND: -

ISSUE/REVISION

| BY | DATE | DESCRIPTION |
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| POT | 31.01.20 | Issued for Section 5 Application |

PROJECT NUMBER

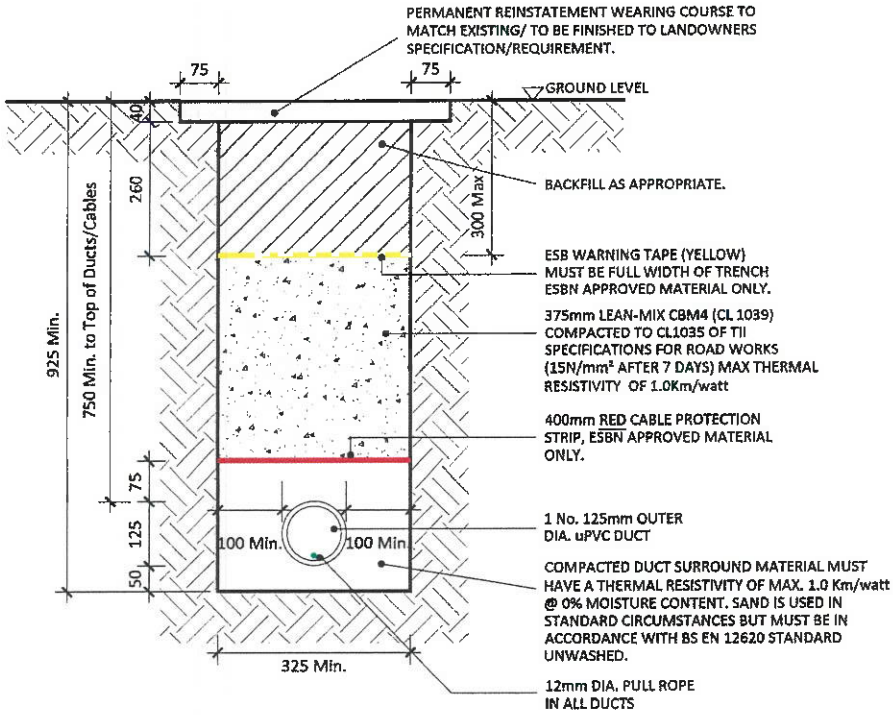
05-689

SHEET TITLE

Ducting Through
Regional / Local Roadways

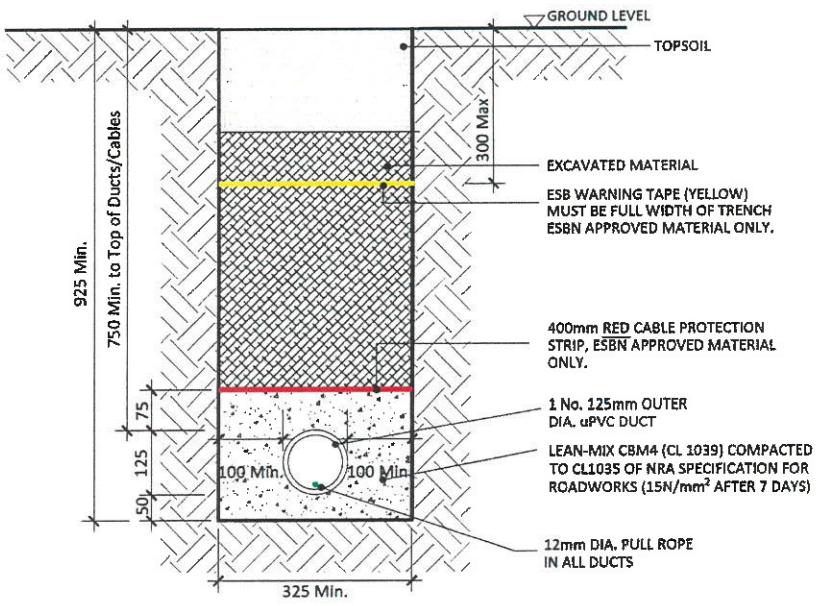
SHEET NUMBER

TLI-05689-GC-DR-P-203




## End View Through Access Road

**SCALE 1:10**




## End View Through Off Road Section

**SCALE 1:10**

NOTES:

- This design is subject to ESB design approval and should be used for information purposes only.
- This drawing is to be read in conjunction with relevant drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only

**ALL REINSTATEMENT WORKS ARE TO BE IN ACCORDANCE WITH LANDOWNER REQUIREMENTS**

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CLIENT: powercapital renewable energy

PROJECT: Creevy Solar Park
MV Grid Connection

PROJECT NUMBER: 05-689

SHEET NUMBER: TLI-05689-GC-DR-P-204

SHEET TITLE: Typical MV Ducting Access Road and Off Road Sections

DRAWING STATUS: Section 5 Application

ISSUE/REVISION

| I/R | DATE | DESCRIPTION |
|---|---|---|
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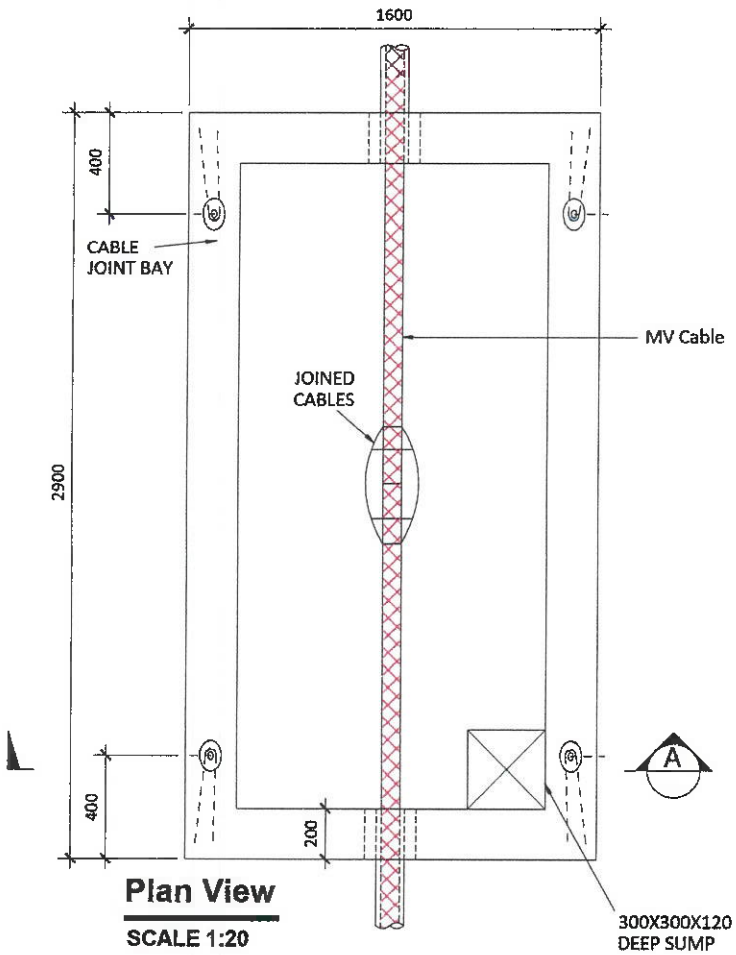
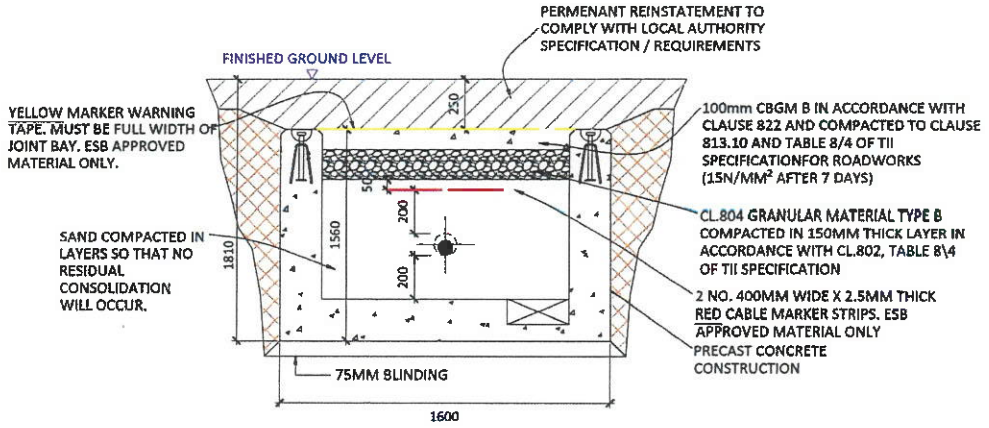
| P01 | 31.01.20 | Issued for Section 5 Application |

# Typical Precast Concrete Joint Bay Details



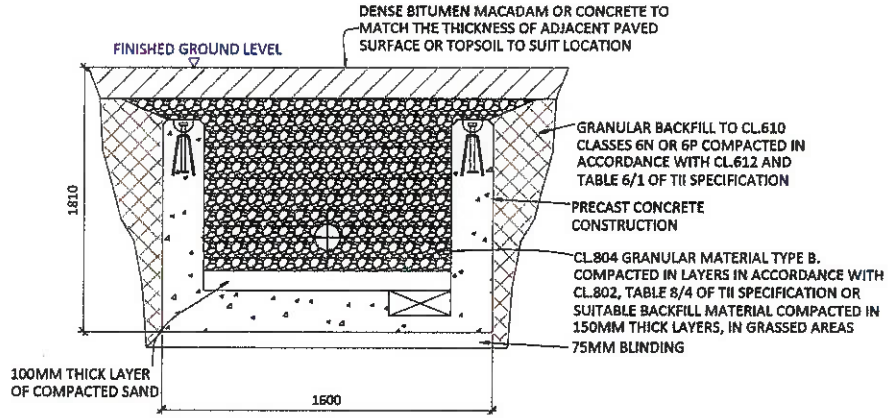

## Plan View

SCALE 1:20




## Section A-A Permanent Reinstatement

NTS




## Section A-A Temporary Reinstatement

NTS

**NOTES:**

- This design is subject to ESB design approval and is to be used for information only.
- This drawing is to be read in conjuction with relevant drawings, specifications and reports
- Dimensions are in millimetres, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only
- Precast Joint Bay Supplier to be approved by ESBN

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PROJECT: Creevy Solar Park
MV Grid Connection

SHEET TITLE: Typical Precast MV Joint Bay
Plan & Section

PROJECT NUMBER: 05-689

SHEET NUMBER: TLI-05689-DR-GC-P-205

DRAWING STATUS: Section 5 Application

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|---|---|---|
| P01 | 31.01.20 | Issued for Section 5 Application |

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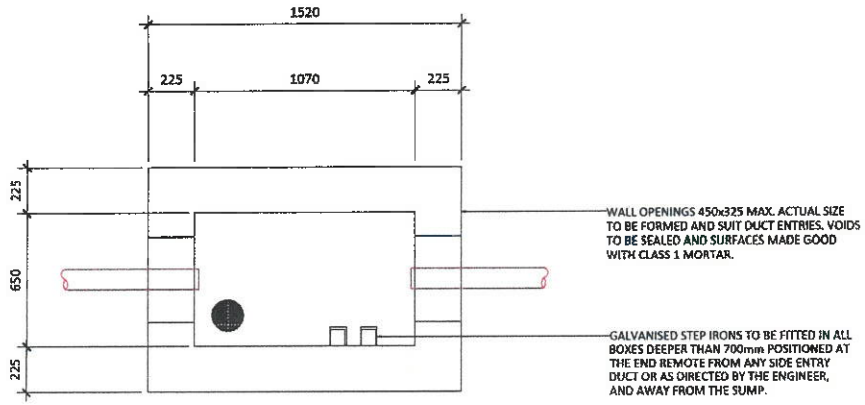
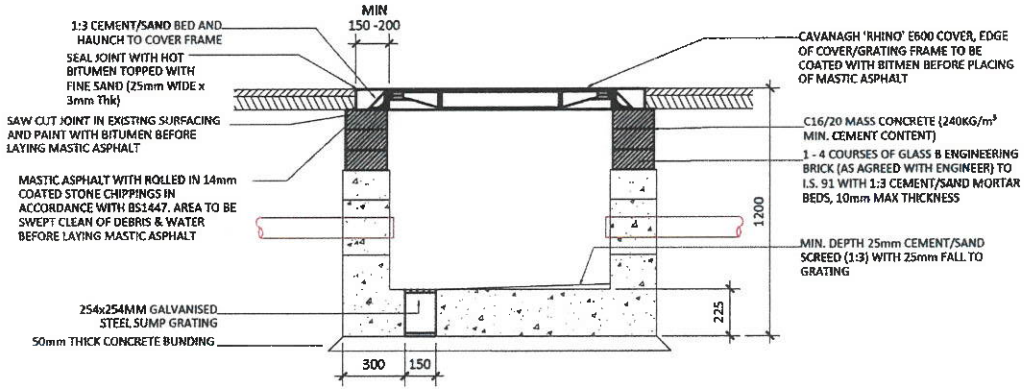
- The following design is subject to ESB approval and should be used for information purposes only.
- This drawing is to be read in conjunction with relevant drawings, specifications and reports.
- Dimensions are in millimetres, unless noted otherwise.
- Drawings are not to be scaled use figured dimensions only.




## Plan View - Typical Communications Chamber

**SCALE 1:20**




## Section Through Typical Communications Chamber

**SCALE 1:20**

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APPLICANT
powercapital
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PROJECT
Creevy Solar Park
MV Grid Connection

PROJECT NUMBER
05-689

SHEET NUMBER
TLI-05689-GC-DR-P-206

SHEET TITLE
Typical Communications Chamber Details

DRAWING STATUS
For Section 5 Application

ISSUE/REVISION

| I/R | DATE | DESCRIPTION |
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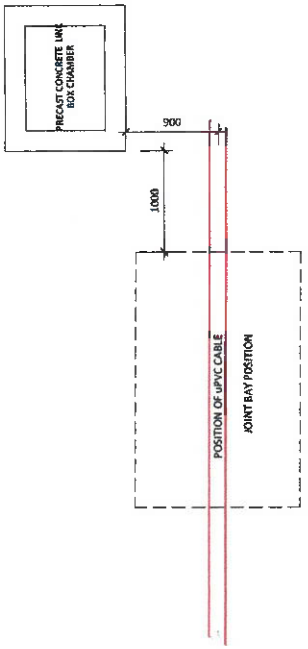
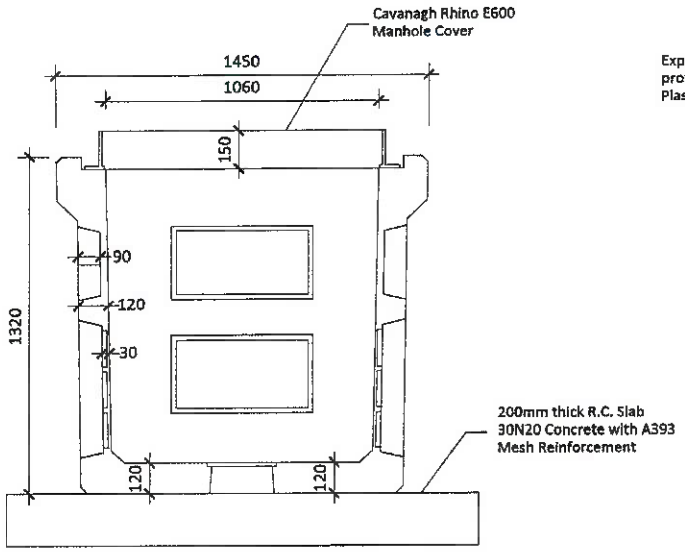
| P01 | 31.01.20 | Issued for Section 5 Application |

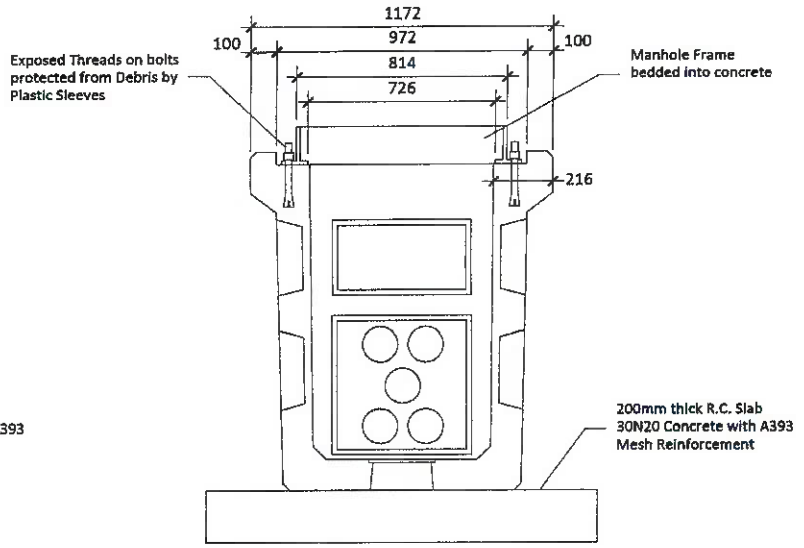



## Indicative Plan of Link Box Location

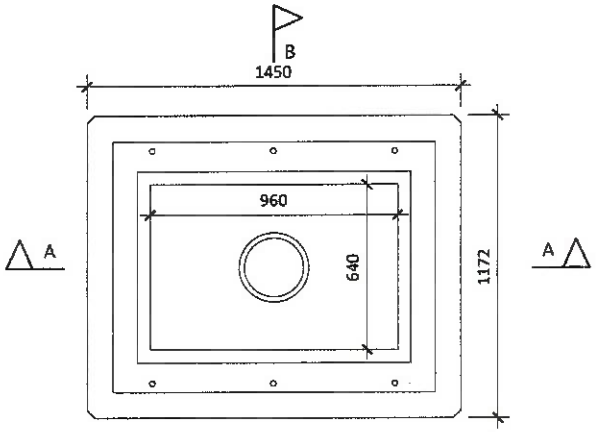
**SCALE 1:50**




Section A-A Scale 1:20




Section B-B Scale 1:20




Plan Layout (E600 Chamber) Scale 1:20

The precast boxes are to sit on a 200mm thick RC pad foundation with 1 layer A393 mesh (50mm cover). The pad will extend 300mm outside the walls of the precast unit. These pads will sit on a bed of 500mm Imported 6N material on competent clay or rock to be approved by the engineer

NOTE:

- This drawing is to be read in conjuction with relevant drawings, specifications and reports
- Dimensions are in millimetres, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only
- Precast Link Box supplier to be approved by ESBN

## Plan & Details of Typical Precast Link Box

**SCALE 1:20**

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PROJECT: Creevy Solar Park
MV Grid Connection

PROJECT NUMBER: 05-689

SHEET NUMBER: TLI-05689-DR-GC-P-207

SHEET TITLE: Typical Precast MV Link Box
Plan & Section

DRAWING STATUS: Section 5 Application

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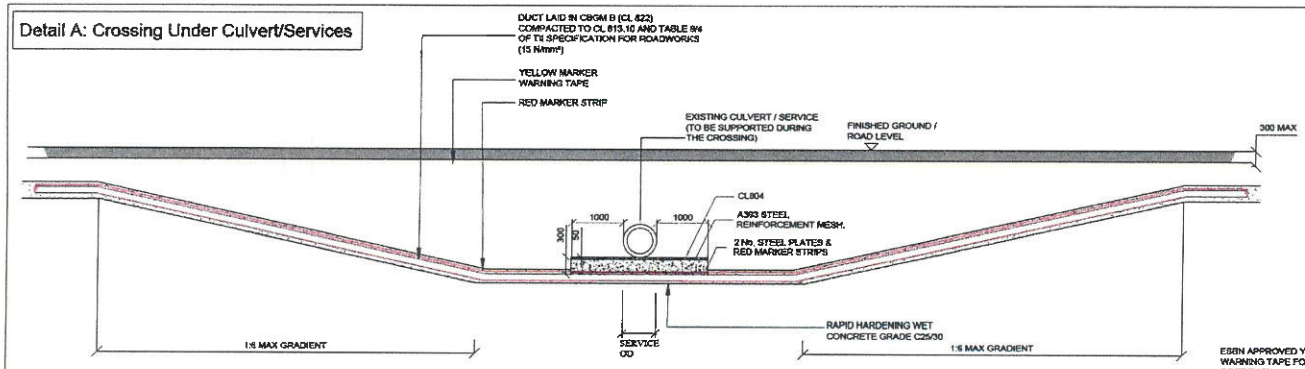
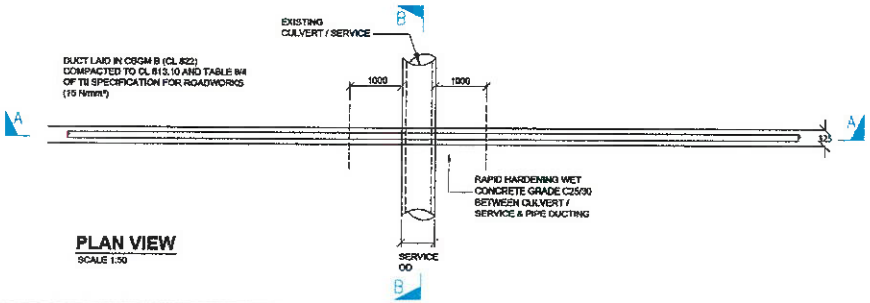
| P01 | 31.01.20 | Issued for Section 5 Application |
| I/R | DATE | DESCRIPTION |

ISO A1 594mm x 841mm

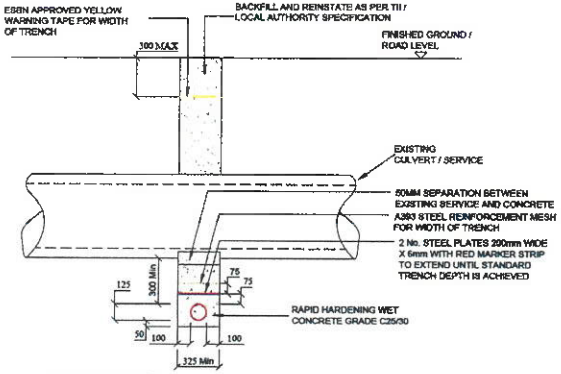
## Detail A: Crossing Under Culvert/Services




### SECTION A-A
SCALE 1:50



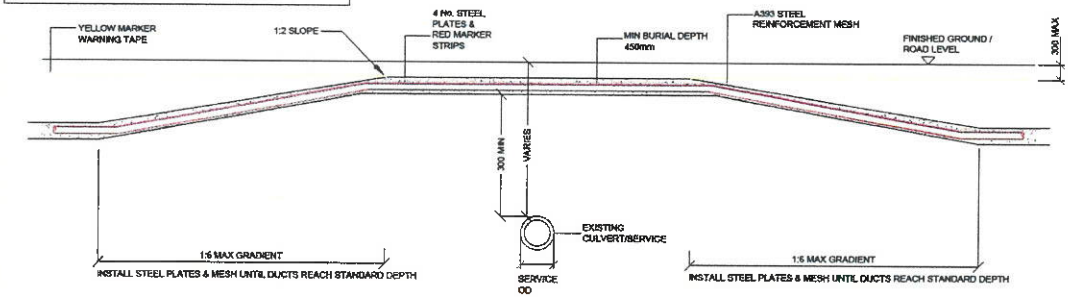

### PLAN VIEW
SCALE 1:50



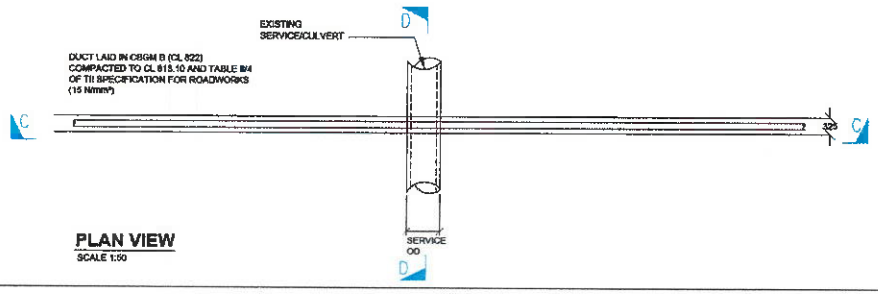

### SECTION B-B
SCALE 1:20

NOTES:
1. THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE AND IS SUBJECT TO AMENDMENT.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT INFORMATION AND DOCUMENTATION.
3. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
4. ALL DIMENSIONS ARE IN MILLIMETRES. ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
5. NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
6. HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
7. IF COMPACTING CBGM B COULD CAUSE DAMAGE TO THE CULVERT / SERVICE BELOW, USE RAPID HARDENING CEMENT GRADE C25 / 30 FOLLOWING ENGINEERS PRIOR APPROVAL.
8. FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE TLI-05689-GC-DR-P-203
9. WHERE DEPTHS EXCEED 3000mm TO THE TOP OF THE DUCT THE CONTRACTOR SHALL CONSULT THE CABLE SYSTEM DESIGN ENGINEER FOR PHASE SPACING REQUIREMENTS.
10. BACKFILL AS PER GUIDELINES FOR THE OPENING, BACKFILLING AND REINSTATEMENT OF OPENINGS IN THE PUBLIC ROADS.
11. FOR WATERMAIN CROSSINGS SEE TLI-05689-GC-DR-P-209.

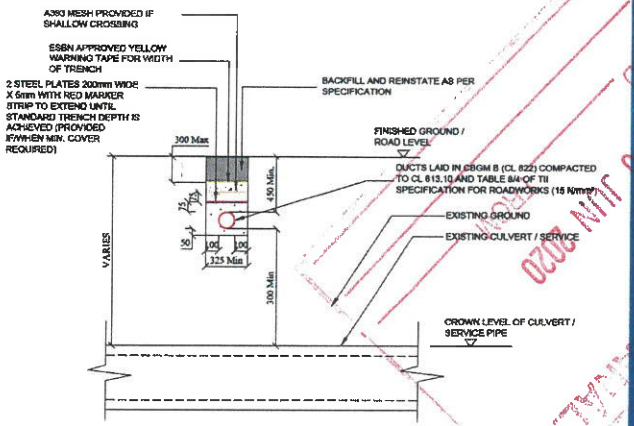
## Detail B: Crossing Over Services/Culvert




### SECTION C-C
SCALE 1:50




### PLAN VIEW
SCALE 1:50




### SECTION D-D
SCALE 1:20



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PROJECT
**Creevy Solar Park**
**MV Grid Connection**

CLIENT
powercapital renewable energy

CONSULTANTS

NOTES

LEGEND :
- 125mm Ø HDPE DUCT WITH 12mm DIAMTER PULL ROPE
- RED MARKER STRIP WITH STEEL PLATES
- YELLOW MARKER WARNING TAPE
- A393 MESH REINFORCEMENT

ISSUE/REVISION

| VR | DATE | DESCRIPTION |
|---|---|---|
| P01 | 31.01.20 | Issued for Section 5 Application |

PROJECT NUMBER
05-689

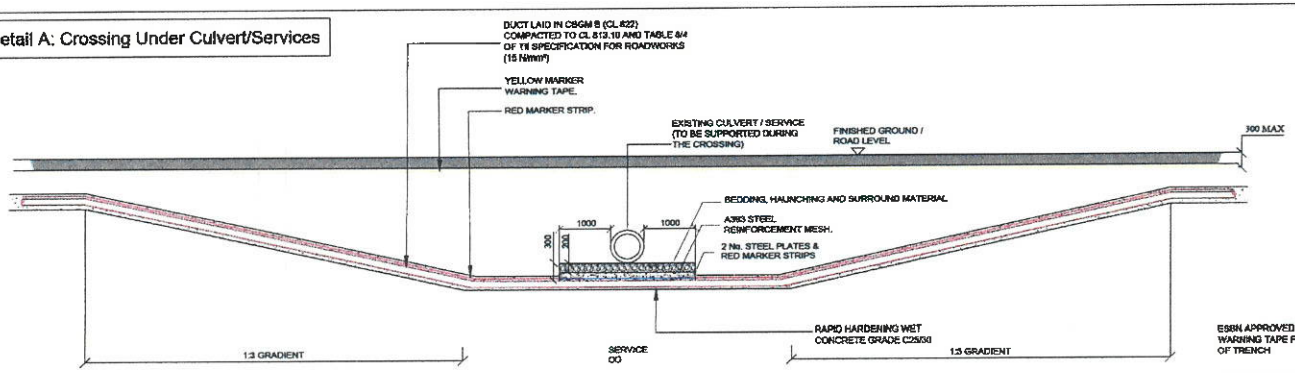
SHEET TITLE
Typical Service/Culvert Crossing Details

SHEET NUMBER
TLI-05689-GC-DR-P-208

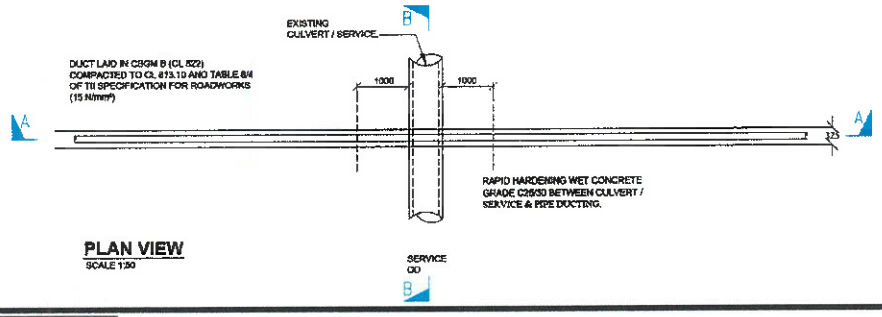
Project Management Initials: Designed: DS Checked: BG Approved: EM

ISO A1 594mm x 841mm

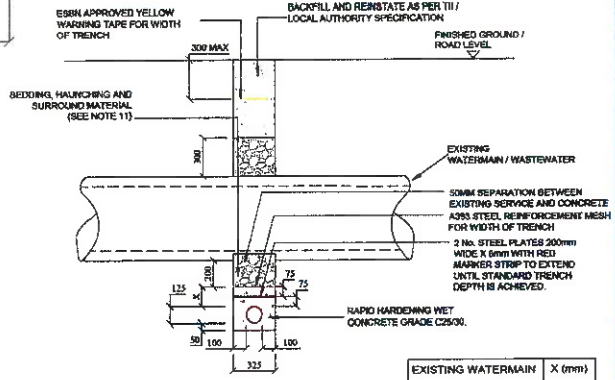
## Detail A: Crossing Under Culvert/Services




### SECTION A-A
SCALE 1:50



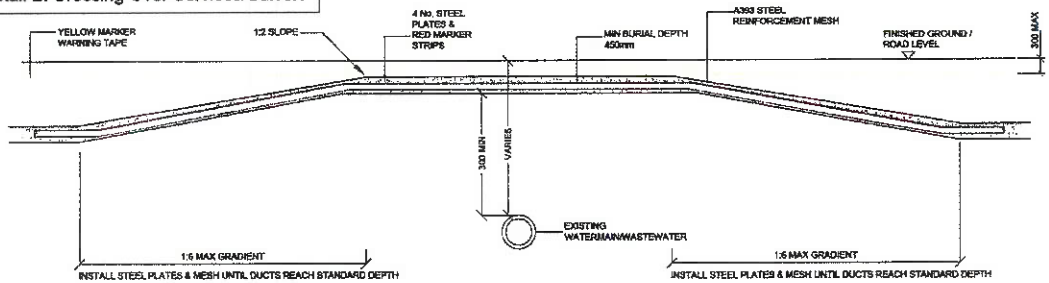

### PLAN VIEW
SCALE 1:50



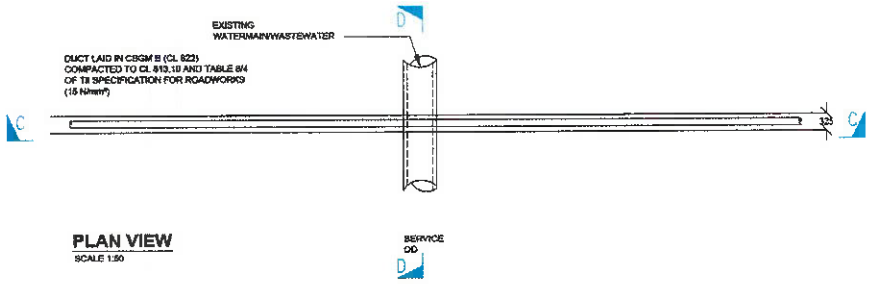

### SECTION B-B
SCALE 1:20

| EXISTING WATERMAIN | X (mm) |
|---|---|
| <=300 | 200 |
| >300 | 300 |

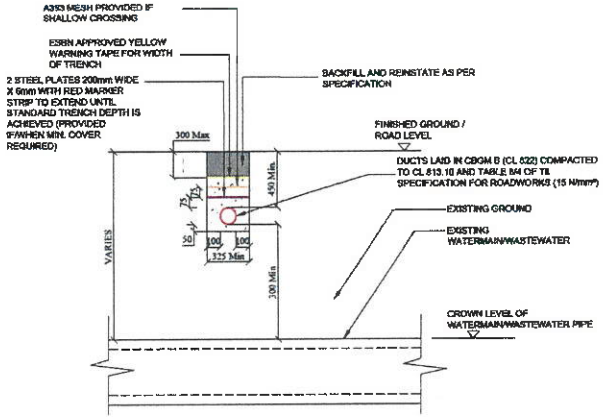
## Detail B: Crossing Over Services/Culvert




### SECTION C-C
SCALE 1:50




### PLAN VIEW
SCALE 1:50




### SECTION D-D
SCALE 1:20

NOTES:
1. THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE AND IS SUBJECT TO AMENDMENT.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT INFORMATION AND DOCUMENTATION.
3. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
4. ALL DIMENSIONS ARE IN MILLIMETRES. ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
5. NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
6. HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
7. IF COMPACTING CBGM B COULD CAUSE DAMAGE TO THE CULVERT / SERVICE BELOW, USE RAPID HARDENING CEMENT GRADE C25 / 30 FOLLOWING ENGINEERS PRIOR APPROVAL.
8. FOR STANDARD TRENCH CROSS SECTION DRAWINGS SEE TLI-05689-GC-DR-P-203.
9. WHERE DEPTHS EXCEED 3000mm TO THE TOP OF THE DUCT THE CONTRACTOR SHALL CONSULT THE CABLE SYSTEM DESIGN ENGINEER FOR PHASE SPACING REQUIREMENTS.
10. BACKFILL AS PER GUIDELINES FOR THE OPENING, BACKFILLING AND REINSTATEMENT OF OPENINGS IN THE PUBLIC ROADS.
11. AS PER NRS 4-08-02 & IGN 4-08-02 GRANULAR MATERIAL SHALL BE 14MM TO 5MM GARDED AGGREGATE OR 10MM SINGLE SIZED AGGREGATE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PROJECT
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MV Grid Connection

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CONSULTANTS

NOTES

LEGEND:-
- 125mm Ø HDPE DUCT WITH 12mm DIAMTER PULL ROPE
- RED MARKER STRIP WITH STEEL PLATES
- YELLOW MARKER WARNING TAPE
- A393 MESH REINFORCEMENT

ISSUE/REVISION

| | | |
|---|---|---|
| P01 | 31.01.20 | Issued for Section 5 Application |
| I/R | DATE | DESCRIPTION |

PROJECT NUMBER
05-689

SHEET TITLE
Typical Watermain Crossing Details

SHEET NUMBER
TLI-05689-GC-DR-P-209

Project Management Initials: Designed: SK Checked: MS Approved: DM

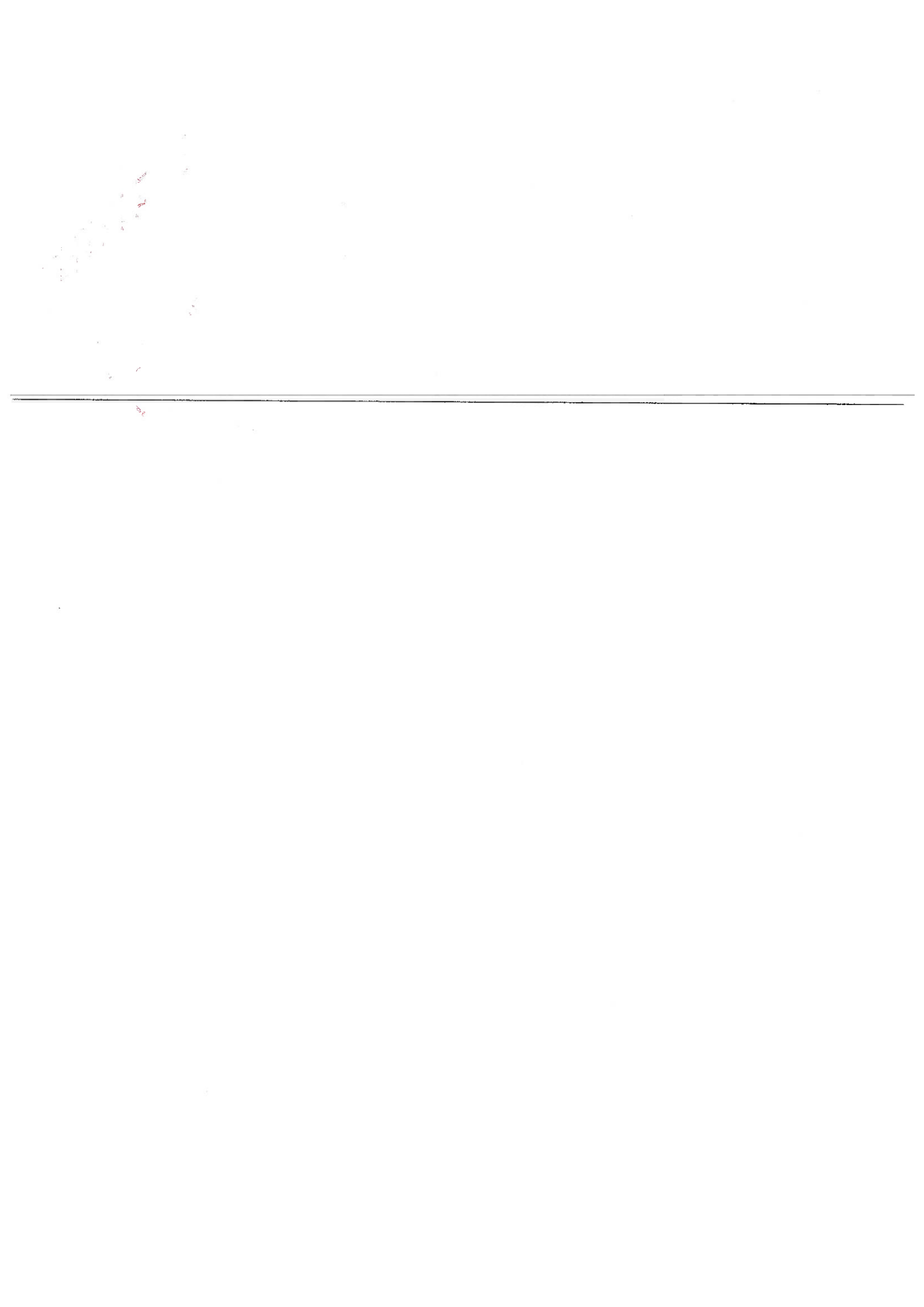


Image 1 : Typical Directional Drilling Rig

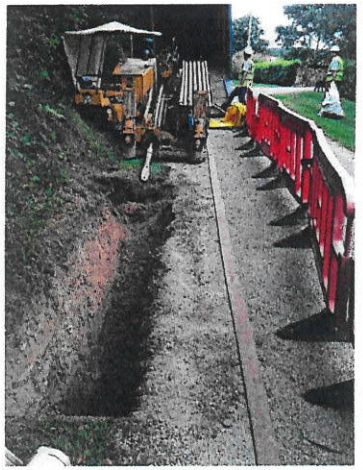
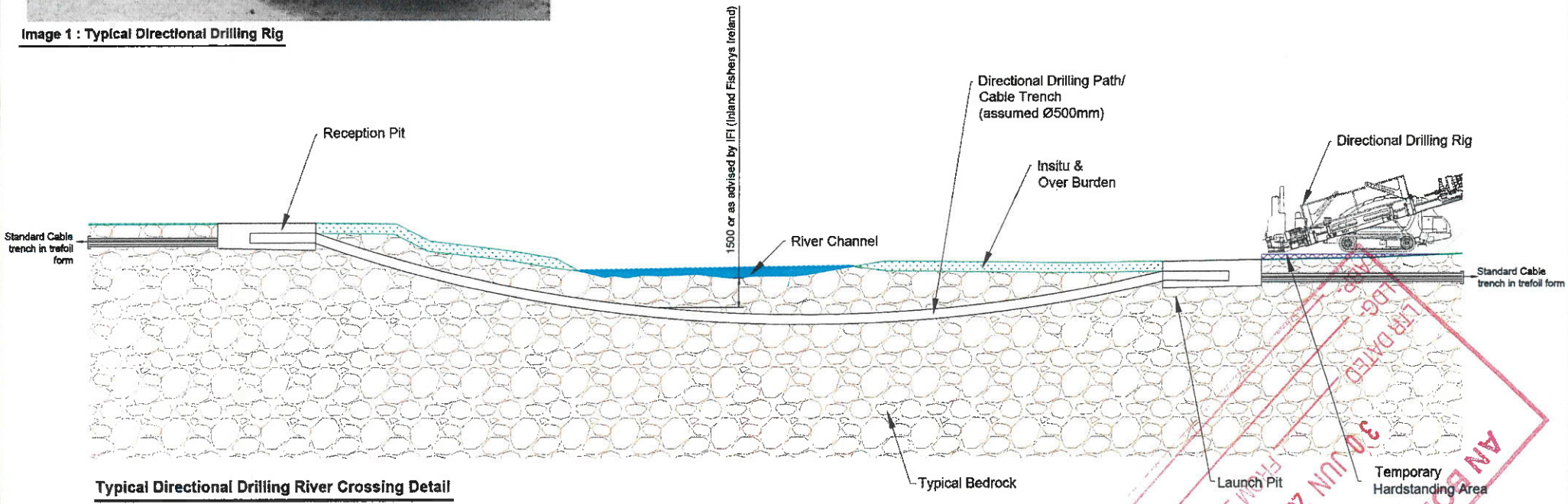


Image 2 : Typical Drilling Rig and Launch Pit




Typical Directional Drilling River Crossing Detail

SCALE - 1:200



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MV Grid Connection

PROJECT NUMBER
05-689

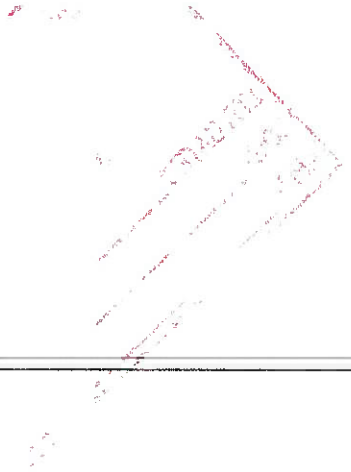
SHEET NUMBER
TLI-05689-GC-DR-P-210

SHEET TITLE
Typical Horizontal Directional Drilling
River Crossing Detail

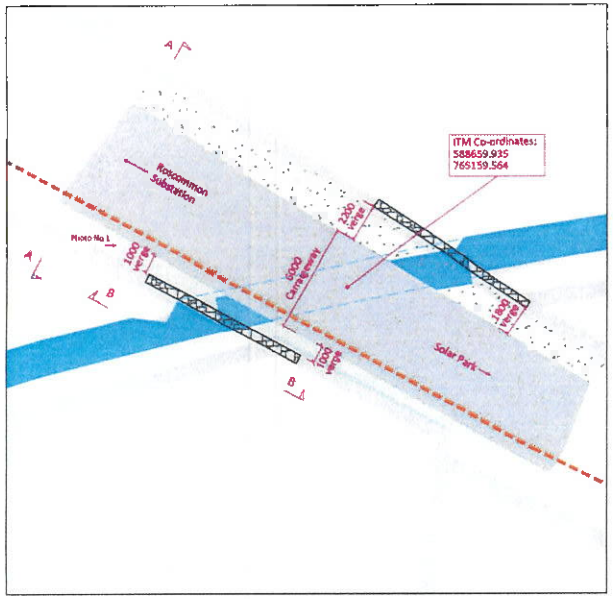
DRAWING STATUS
Section 5 Application

ISSUE/REVISION

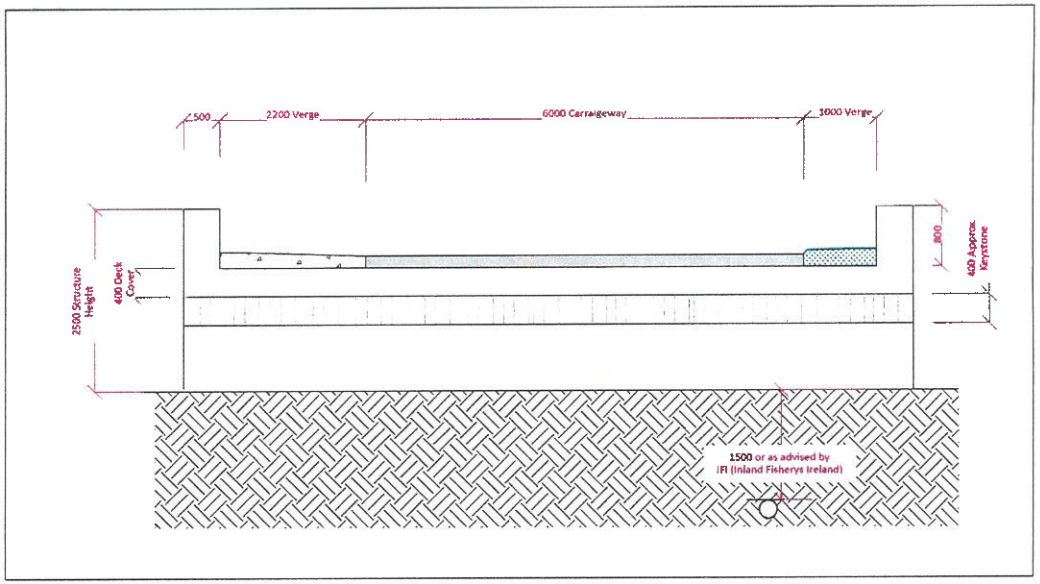
| I/R | DATE | DESCRIPTION |
|---|---|---|
| P01 | 31.01.20 | Issued for Section 5 Application |



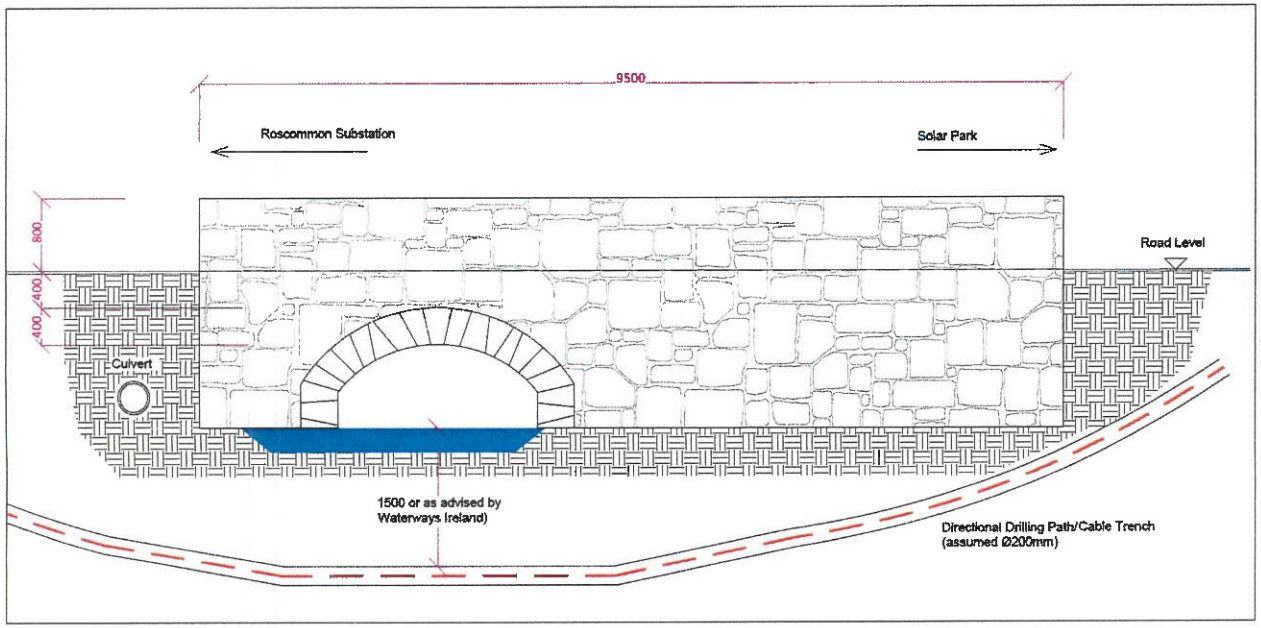
ISO A2 420mm x 594mm




**Plan View Bridge No. 1**
Scale ; 1:200




**Section A-A**
Scale ; 1:100




**Section B-B**
Scale ; 1:40

**Photo No 1**



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PROJECT

Creevy Solar Park
MV Grid Connection

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CONSULTANTS

NOTES: -

- All dimensions are shown in millimeters unless otherwise stated
- No structural bridge surveys have been carried out and the proposals are subject to detail design
- Bridge crossing designs will be submitted to Roscommon Co. Council for review
- Drawings are in compliance with ESBN specification requirements for shallow formation, bridge crossings, etc.
- HDD launch and reception pit locations to be determined following site investigation

LEGEND: -

Proposed MV UGC Route

ISSUE/REVISION

| VR | DATE | DESCRIPTION |
|---|---|---|
| P02 | 05.03.20 | Revised Issue to Client |
| P01 | 31.01.20 | Issued for Section 5 Application |

PROJECT NUMBER

05-689

SHEET TITLE

Bridge - Proposed Crossing Details

SHEET NUMBER

TLI-05689-GC-DR-P-211