

TECHNICAL NOTE 2

Project: Kellystown Wind Farm	Ref: Rev0
Section: 38kV Grid Connection Screening of Chapel Lane Alternative	Job No: 05-949
	Date: 02.08.24
Made By: CK	Checked By: DB
	Sheet No: 1 of 7

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Instruction:

Technical Lead:	Damien Browne - TLI Group
Date of Writing:	02.08.24
Scope of Note:	Kellystown Wind Farm - 38kV Grid Connection- Screening of alternative 1.2 km section of route to include Chapel Lane.
Documents & Data Issued for Review:	02.08.24

Overview:

TLI Group (the Consultant) were engaged by EDF Renewables c/o Jenning's O Donovan (the Client) to complete the detailed design of the 38kV grid connection to Kellystown Wind Farm in Kellystown, Co Louth. Several routes were assessed and a preferred route selected followed by preparation of planning pack for the grid route. Subsequently, the client has requested a screening assessment be carried out on a section measuring 1.2 km on the L-6322 and a private section of road on Chapel Lane, Co Louth as an alternative to the previously selected section of route on the N51 and R132.

The proposed alternative grid connection section will consist of underground cable (UGC). The total length of the section of grid connection is approximately 1.2 km from the townland of Mell West on the L-6322 onto Chapel Lane and subsequently the R132. The main underground cable route can be seen in orange in figure 1 below, with the Chapel Lane alternative shown in purple.

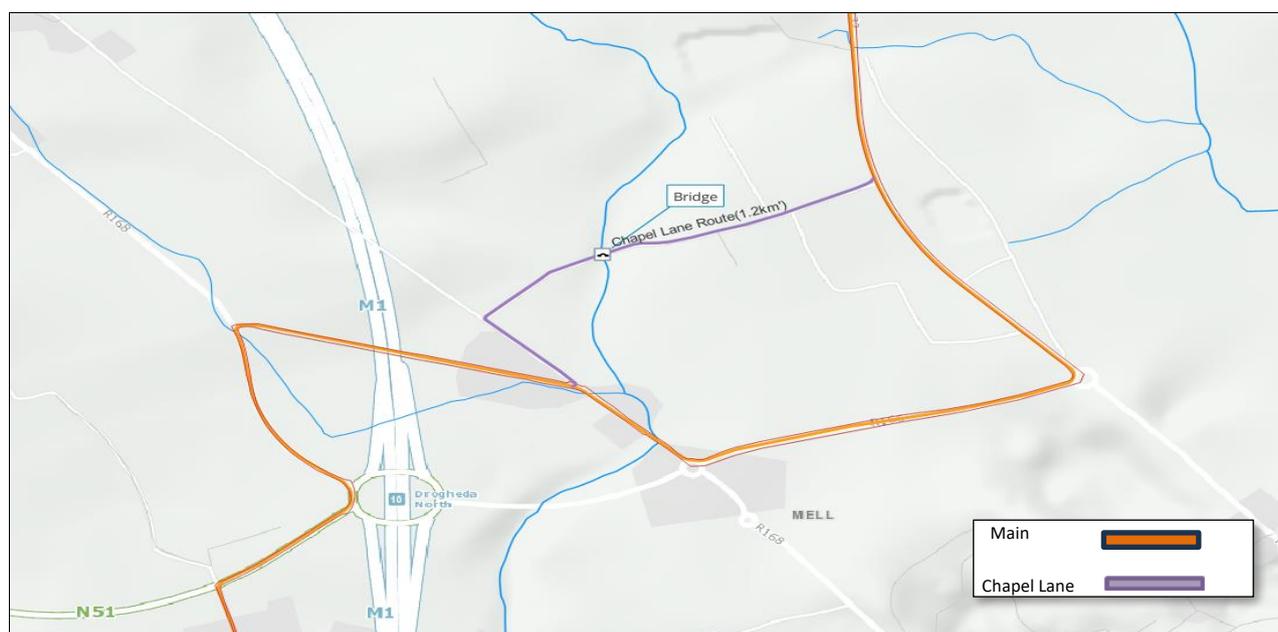


Figure 1 Main and Chapel Lane Route Options

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Desktop Analysis and Survey:

A desktop analysis was carried out followed by an on the ground survey to ascertain the constraints present in this section of route. This alternative section of route begins in the townland of Mell West. The Underground Cable(UGC) turns north-west onto the L-6322. This cable turn is very sharp and careful attention will be required at design stage to plan the trajectory of the cable. This sharp bend can be seen in figure 2 below. There are also Irish Water Services at this junction which must be considered and clearance distances be maintained. A cable joint will be located in this section of route on the L-6322, at a suitable location. This is necessary due to the sharp bend as the cable transitions onto the L-6322 and the resulting forces on the cable during cable pulling. There is an existing 38 kV overhead line close to the junction, which crews must be aware of during construction phase.

The L-6322 is narrow road at 5 m with existing water services on the west side of the road. It is flanked by ribbon development to the west and mature hedgerow to the east. At approximately 280 m from the junction the UGC turns north-east onto Chapel lane as shown in figure 2 below. The road is approximately 3 m in width at Chapel Lane. This is a private section of road. Early engagement with Louth County Council and the private landowner will be necessary. The narrow width of the road at this point will mean that road closure will be necessary during trenching.

There is a small bridge at approximately 330 m along Chapel Lane. This is fenced off with security fencing. A limited survey was carried out of this bridge due to the presence of security fencing. There is no cover on the bridge and should this route be brought forward a HDD from road to road will be necessary to traverse the bridge while preserving its integrity.

At the time of survey, approximately 380m from the small bridge the road is blocked due to construction works. This section of ground is under the control of the IDA. The paths and roadways are being upgraded. A conditional grant of application has been granted to Hibernia Steel Manufacturing Ltd for a plant within the IDA lands. There are existing ESB medium voltage cables undergrounded in the IDA section of Chapel Lane. The intention would be to run parallel while maintaining clearance distances.

The UGC traverses through roadway on IDA lands and joins R132 and continues North toward the proposed Kellystown Wind Farm. Ongoing engagement with and approval from IDA would be necessary to trench in this section of roadway.

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Sharp Bend onto
L-6322



Chapel Lane Entrance



Small Bridge



Chapel Lane- IDA
Section-Major
Construction Works

Figure 2 Survey Images of Chapel Lane Route

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Underground Cable Design:

The underground cable sections of the proposed 38kV grid connection have been designed in accordance with the Standard Specification for ESB 38 KV Networks Ducting/Cabling.

Cable Trench in Local Road:

The cable trench design for installation in the local road section is shown in Figure 3 below and can be found in Drawing No. 05949-DR-110, this design will apply to the UGC section to be installed in the local road section. It should be noted that all works carried out in the sections of UGC in regional public roads will need to be carried out in conjunction with Louth Co. Council. The current road build-up and reinstatement requirements will need to be confirmed by Louth Co. Council prior to construction.

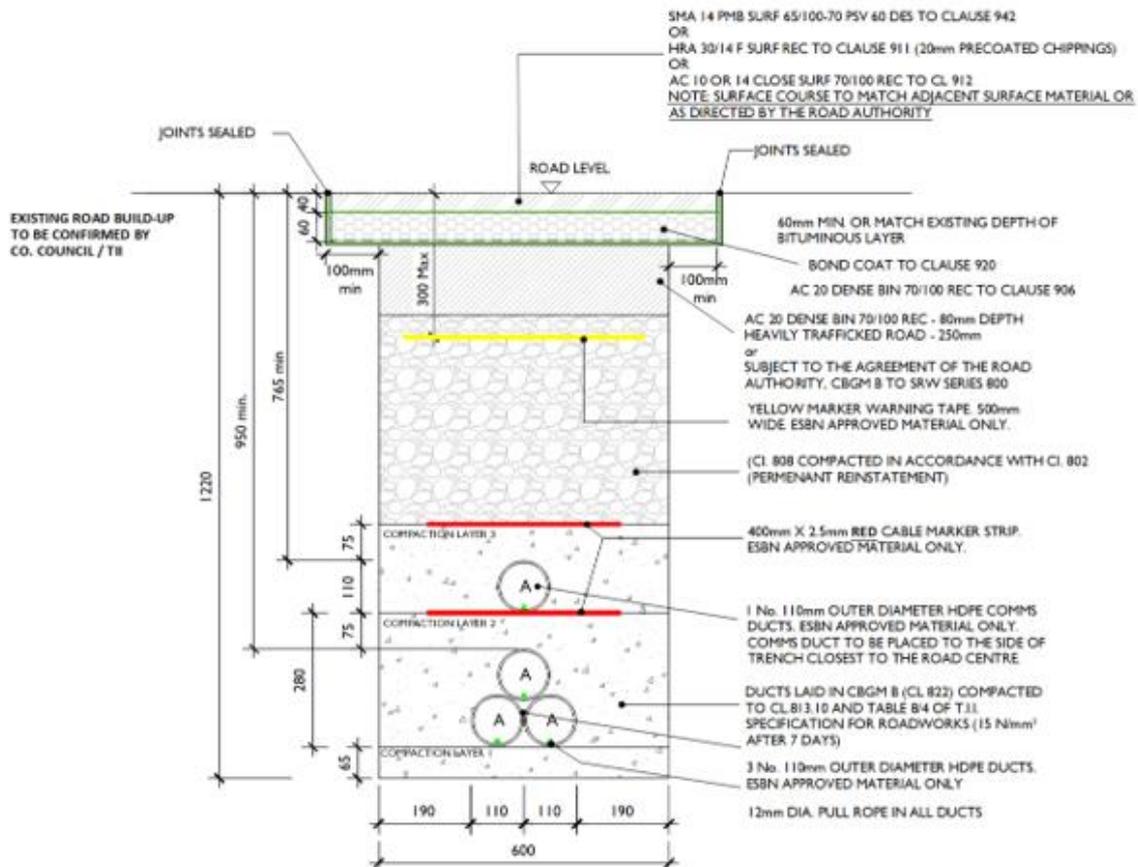


Figure 3 – Cable Trench Design in Regional Road

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The cable trench design for the off-road sections including in private lands and in the road verge is shown in Figure 4 below and can be found in Drawing No. 05949-DR-118. It should be noted that all works carried out in the road verge will need to be carried out in conjunction with Louth Co. Council. The reinstatement requirements for the off-road sections will need to be agreed with the private landowners or Louth Co. Council in advance of works.

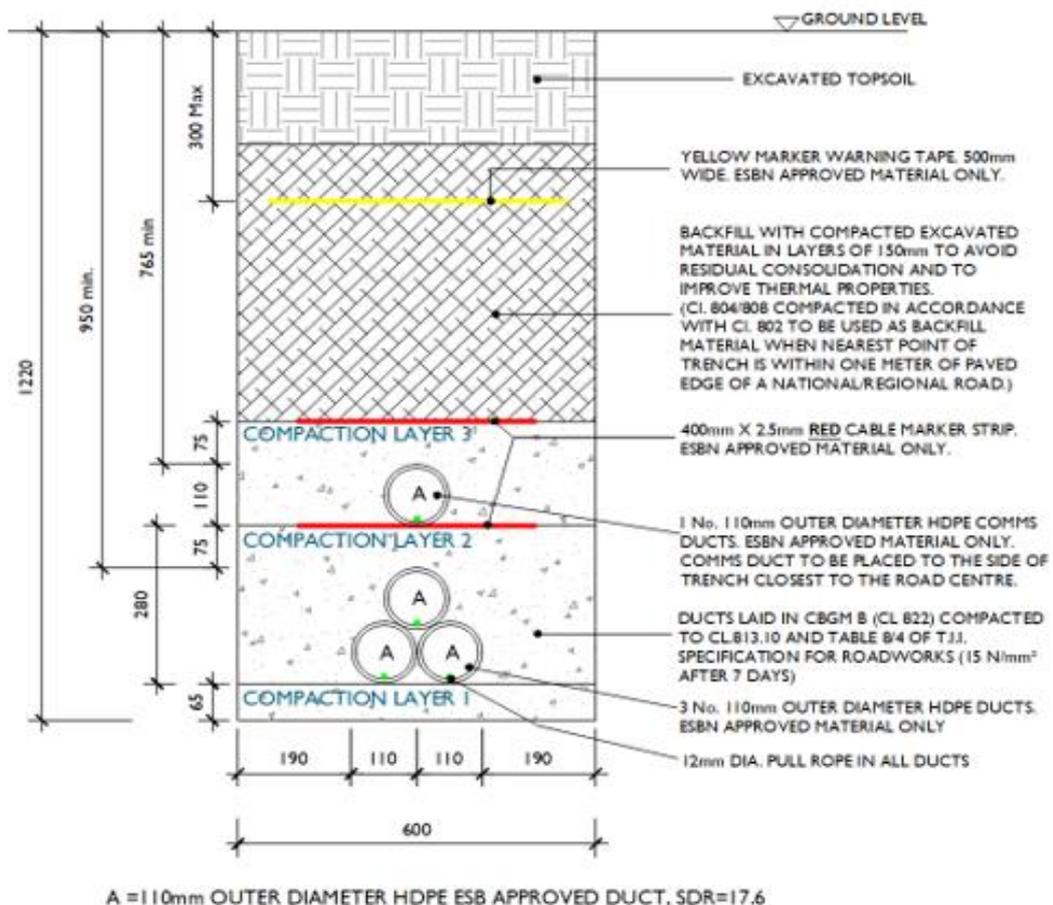


Figure 4 Cable Trench in Off Road Section

38kV Joint Bay general Arrangement:

The general arrangement for Joint bays structures design for installation within the local road and within grassland areas can be found in Drawing No. 05949-DR-111. This design will apply to the UG sections to facilitate the jointing of 2 No. lengths of UGC at varying intervals at the discretion of the Local authority, Louth Co. Council prior to construction. The Joint bay structure will need to be supplied from an ESB Networks approved pre-cast supplier.

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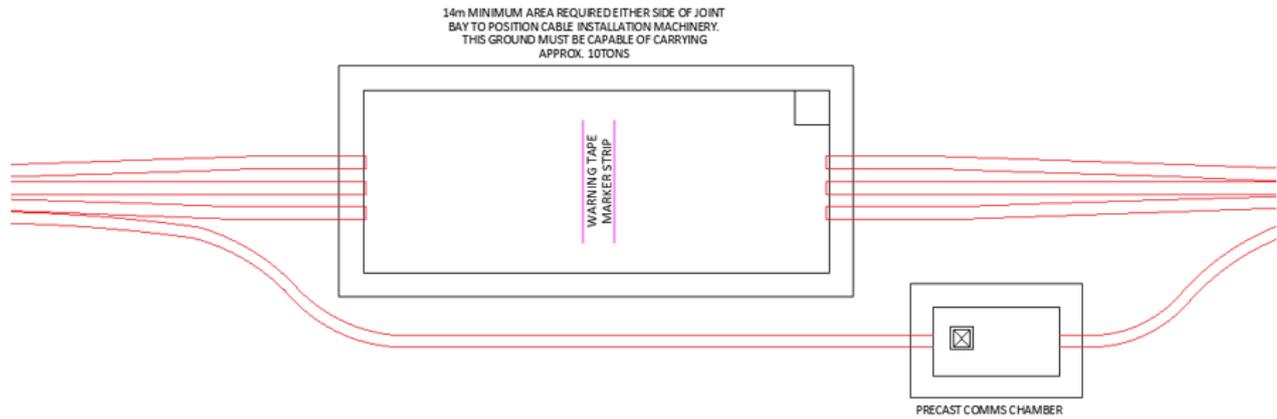


Figure 5 - Typical 38kV Joint Bay Arrangement

Service Crossing Detail:

Sections of existing underground services may be present, if a trench is to be excavated, 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. The works will be carried out in accordance with the utility standards. The Service Crossing detail design that is to be incorporated is shown in Figure 6 and the full crossing detail can be found in Drawing 05949-DR-116.

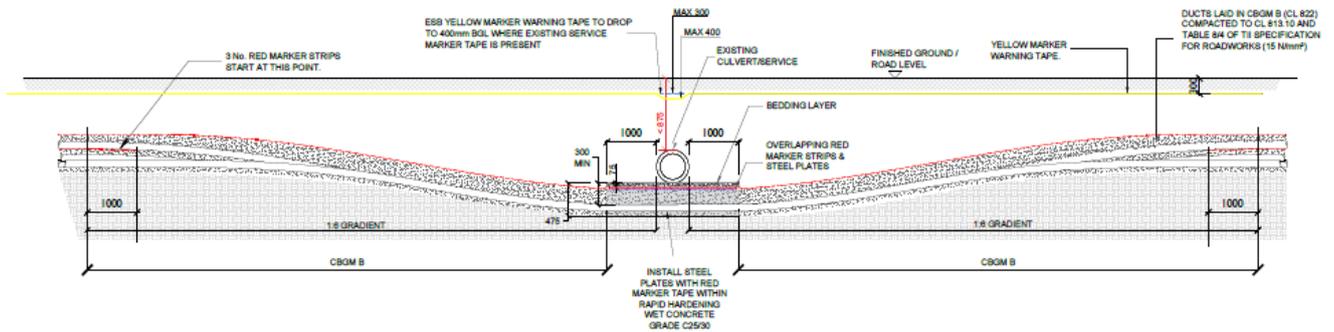


Figure 6 - Service Crossing Detail

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HDD Crossing:

At the Bridge on Chapel Lane a HDD crossing will be required. A typical HDD crossing can be seen in figure 7 below.

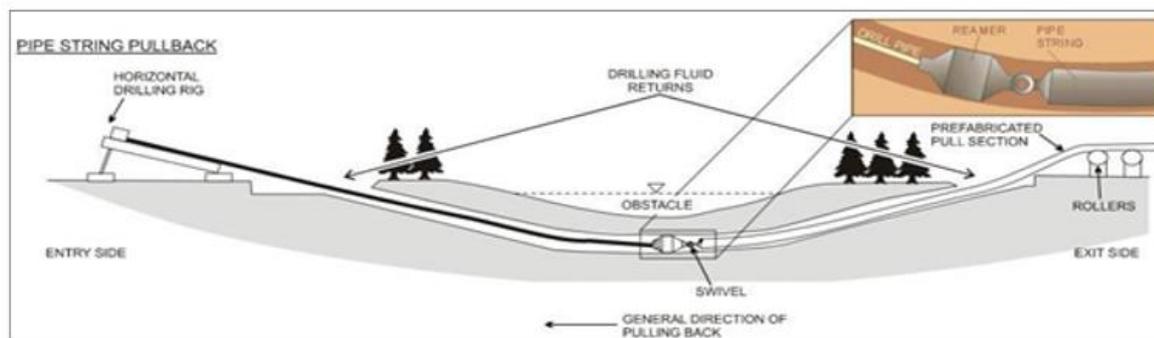


Figure 7 – Hdd Crossing

Conclusions:

This route option has significant constraints with a sharp bend, a bridge which will require HDD and narrow roads. However, none of the constraints are unsurmountable. Therefore, it may be concluded that an UGC through Chapel Lane represents a viable route alternative. This is subject to approval by the relevant landowners including IDA and approval by Louth County Council.