GORTYRAHILLY WIND DAC

GORTYRAHILLY WIND FARM

CO. CORK

TEMPORARY BRIDGE CROSSING OVER SULLANE RIVER

METHOD STATEMENT

August 2022

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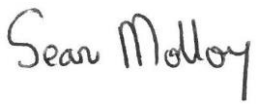
Date August 2022	Signature 	Signature 

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TEMPORARY BRIDGE CROSSING OVER SULLANE RIVER

METHOD STATEMENT

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1. INTRODUCTION

This Method Statement relates to the provision and removal of a temporary bridge over the Sullane River at Gortnatubbrid Td., Ballyvourney, Co. Cork.

The bridge is required as part of the turbine component haul route to Gortyrahilly Wind Farm.

While the existing triple-arch bridge on the Sullane River at Ballyvourney has been trafficked in the past for the delivery of turbines to developments in the vicinity of Gortyrahilly, it is unsuitable for deliveries of turbines of the dimensions proposed at Gortyrahilly without significant structural modifications. It is believed that these modifications would permanently alter the character of the bridge, which dates from c.1830, with various recent alterations.

2. LOCATION

The co-ordinates of the bridge are E519298, N577600 (ITM); E119330, N77538 (Irish Grid). A location map is included within Drawing No. 6225-PL-810 in **Appendix A**.

The temporary bridge will be c.265m upstream of the existing bridge.

3. DESCRIPTION OF TEMPORARY BRIDGE

The temporary bridge will have a clear span of 32.0m. The chosen location provides for the shortest required span of 9m at riverbed level with 20m from top of bank to top of bank. A similar bridge was installed at the same location for turbine component deliveries to Grousemount Wind Farm.

The bridge will comprise a single span simply supported steel structure that entails no instream works (see Drawing No.'s 6225-PL-810 and 6225-PL-811 in **Appendix A** and photos of such a bridge in **Appendix B**). It will be leased from a specialist bridge supply company offering a full erection and dismantling service to ensure that it is built and taken down quickly, with all activities complying with applicable quality, health, safety and environmental standards.

It will be a pre-engineered modular steel bridge system designed for delivery by standard road-going vehicles. A number of bridge units will be delivered to site and will be bolted together to form a single span bridge deck that will be lifted and placed into position using a mobile crane.

Concrete abutments will be provided to support the deck and will be set back 5m from the river edge (top of bank).

It is expected that deliveries of turbines to Gortyrahilly Wind Farm will be completed over a period of approximately 9 months. When deliveries are completed, the specialist bridge supplier will return to site and the temporary bridge will be dismantled and removed.

4. PREPARATORY WORK

A Contractor will be appointed. A Project Supervisor for Construction Stage (PSCS) will also be appointed, and the Contractor will be requested to prepare his Risk Assessment and Method Statement (RAMS). The Contractor will be required to appoint an Environmental Manager for the works. An Ecological Clerk of Works and a Resident Engineer will be appointed by the Developer to oversee the works.

Safety signage will be erected at appropriate locations on the perimeter of the site and within it along with the provision of life buoys on both sides of the river.

Temporary site entrances (incl. lockable closable gates) will be formed at the N22 and the L3400, and a 5m wide unsurfaced access track will be constructed to the bridge location. These will be the same access points as use for the temporary bridge used for Grousemount Wind Farm.

Leading from the N22, the temporary track will require the removal of a section of the roadside bank along the south side of the road. The bank drops steeply up to 4m to the adjoining field.

The temporary road will then run south through a field of improved grassland. A disused mill race channel flows through the field which has now been replaced by a culvert over the width of the access road.

The working corridor of 30m will be fenced off each side with stockproof fencing.

From the river's edge (top of the bank), a no-go zone of 5m will be fenced off across the whole width of the working corridor. A triple layer of silt fencing will be erected on the field side of each fence. The layer closest to the river will be installed manually.

The access track each side of the river will be constructed at the same locations as used for the Grousemount bridge. The road base course is already in place and has been topsoiled over.

Topsoil for the access track will then be removed and stored in a berm inside the working corridor for reinstatement. No topsoil will be stored within 25m of the river edge (top of bank). Silt fencing will be erected c.1m from the bottom of each storage berm so as to contain any material which may be washed out by heavy rainfall.

The exposed base course will be covered in a 150mm thick layer of Clause 804 crushed stone and will be compacted by roller. The strength of the road will then be confirmed by plate testing.

The Contractor's car park and area for portacabins and portaloos will be established. The bridge assembly area, crane hardstand area and works/storage area for abutment construction will be developed. The locations of these areas are shown on Drawing No. 6225-PL-810 in **Appendix A**.

Six dewatering pumps (one each side of access track for each side of the river and at culvert crossing) will be brought to site.

Six siltbuster units (one for each side of access track for each side of the river and at culvert crossing) will be brought to site.

Silt bags will be fitted to the discharge pipework from the siltbusters. A French drain (150mm slotted drain pipe in trench line with non-woven filter geofabric and filled with single sized crushed stone) will be provided at each side of the access tracks and across the track uphill of each abutment location. Each drain will discharge to an excavated sump to act as a pump sump, 1m deep which will be lined with geofabric and crushed stone. A submersible pump will be placed in each sump with discharge to a siltbuster.

Designated plant refuelling areas will be set up just inside the gate to each side of the site. Drip trays will be used for all refuelling and spill kits will be on hand.

A proprietary skip will be provided close to the gate to each half of the site to facilitate washdown of concrete chutes of readymix trucks.

Two turbidity meters will be provided (one at each side of the river).

A suction type tanker will be on call so as to empty the siltbusters, to empty the concrete washdown skips and to transport the contents to a licenced waste water treatment plant.

Once all preparatory work has been undertaken, a joint inspection will be held with the Developer's Resident Engineer, the Developer's Ecological Clerk of Works, the Contractor's Site Agent and Contractor's Environmental Manager. A checklist will be used to record the status of all preparatory works and snag's will be identified and actioned immediately by the Contractor.

Only once all items have been signed off, can any construction works take place.

5. CONSTRUCTION OF BRIDGE ABUTMENTS

Met Eireann forecasts will be consulted so as to take advantage of a relatively dry period of 2-3 weeks for construction of the abutments.

Abutment dimensions are shown on Drawing No.'s 6225-PL-810 and 6225-PL-811 in **Appendix A**. There are three main parts to each abutment viz, a bottom foundation section, the main bearing wall and a narrower top section of wall. Each foundation will be 9m x 3.2m in plan, 1.0m thick (28.8m^3 concrete). Each main bearing wall will be 8m wide x 1.2m thick x 1.5m high (14.4m^3 concrete), while each top section will be 8.0m wide x 0.3m thick x 1.305m high (3.2m^3 concrete).

Reinforcing steel will be delivered to site and the cage for each foundation will be tied/ assembled prior to any excavation work commencing.

Each abutment excavation will be 9.5m x 3.3m on plan to a depth of 1.2m. Side slopes on the side nearest the river will be cut back to as close to vertical as is possible and supported by timber boarding. Excavated material from each abutment will be stored on site in a separate berm located at least 25m from the river edge and surrounded by silt fencing. As each excavation nears completion, lean-mix concrete will be brought to site and a layer 150mm thick will be placed at the bottom of each excavation (4.7m^3 per foundation).

Once the lean-mix has firmed (next working day), the excavation will be checked for water ingress (from rainfall or ground water ingress). Any water arising will be pumped from the excavation to the siltbuster.

The reinforcement cage will then be lifted into position, levelled and supported. Concrete will be brought to site for placing the foundation section. The 28.8m^3 of readymix concrete for each abutment foundation will be brought to site in 5 loads. Prior to leaving the site, chutes from the readymix trucks will be washed down into the skips provided near each of the two entrances.

The concrete will need a day to harden sufficiently to allow for steelfixers to fix steel for the main wall. Steelfixing should take 1 day, to be followed by 1 day for erecting formwork and supports with concrete placing on the next day. The 14.4m^3 readymix concrete for each abutment main wall will be brought to site in 5 loads. Prior to leaving the site, chutes from the readymix trucks will be washed down into the skips provided near each of the two entrances.

On completion, shuttering will be removed and the working space between the excavation and the foundation/wall will be backfilled with soil.

A similar process to the main walls will be undertaken for the top wall of each abutment. The 3.2m^3 of readymix concrete for each top wall of each abutment will be brought to site in 1 load. Prior to leaving the site, chutes from the readymix trucks will be washed down into the skips provided near each of the two entrances.

On completion of the top walls, shuttering will be removed from site to either the Contractor's yard for re-use or to a licenced waste disposal facility.

6. BRIDGE DECK

Once the concrete has gained sufficient strength (7-days after placing), a mobile crane (500t rating minimum) will be mobilised to site and will be parked on the crane hardstand area. The crane will arrive on site fully fuelled so as to minimise the necessity for further refuelling during the works.

The bridge deck components will then be delivered to site via standard articulated trucks and will be offloaded by the crane to the bridge assembly area. The specialist bridge assembly team will manage the process such that components are offloaded and assembled (bolted together) in the same operation in so far as is possible.

Bridge bearings will also be delivered and placed onto the support abutments.

The bridge deck will then be lifted into position by the crane. One end will be fixed while the other will be placed on a sliding bearing to accommodate thermal movement.

The bridge will be checked by the installation team and signed off by the Developer's Resident Engineer and the Contractor's Site Manager.

The crane will be demobilised from site.

The site tracks will be constructed up tight to the bridge, speed restriction and warning signs will be erected and the track/bridge made available for turbine component deliveries. Entrance gates will normally be locked and only be unlocked in advance of the passage of turbine component delivery vehicles.

7. CONSTRUCTION PROGRAMME

A three-month construction programme is envisaged as follows:

- Preparatory Works – 1 month
- Abutment Construction – 1 month
- Bridge Deck Construction and Sign-off – 1 month

8. INSPECTIONS DURING USE

Following construction, the access tracks and bridge will be inspected on a daily basis to check their condition.

Drainage and run-off treatment measures will also be inspected to ensure that they are performing well in terms of water quality and hydraulic capacity.

No turbine component delivery vehicles will be parked on the bridge but will drive straight through.

9. BRIDGE REMOVAL

Once all turbine components have been delivered to site and turbines have been commissioned, the stone fill will be removed locally from either end of the bridge and the crane will remobilise to the crane hardstand area.

The specialist bridge assembly team will also remobilise.

Fixing to the abutments will be removed and the bridge deck will be lifted out of position and will be placed onto the bridge assembly area. The bridge components will be disassembled.

Articulated trucks will come to site, in sequence, and components will be loaded onto the trucks for removal from site.

10. ABUTMENT REMOVAL

The main wall faces will be exposed by removing soil within the original excavation. Concrete at the bottom of the main wall will be broken back to 100mm depth along the edges of the wall using pneumatic or electric breakers. The reinforcing steel will be cut using an angle grinder.

The concrete will be broken further with a rock breaker attached to an excavator and the reinforcing steel cut with an angle grinder so as to remove chunks of each wall. This will continue until each abutment is fully removed.

Following removal, the previously excavated sub-soil will be placed into each excavation in 300mm thick layers and each layer will be compacted by roller. Topsoil will then be placed so as to reinstate the excavations.

11. TRACK REMOVAL

The top layer of crushed stone of the track each side of the river as well as crane hardstand area and bridge assembly area will be removed, and the material taken from site either for re-use elsewhere or for disposal at a licenced landfill.

The previously excavated topsoil will be spread over the track and reseeded with grass.

Contractor's portacabins, portaloos and parking area will be removed as part of these works.

12. CLOSE-OUT WORKS

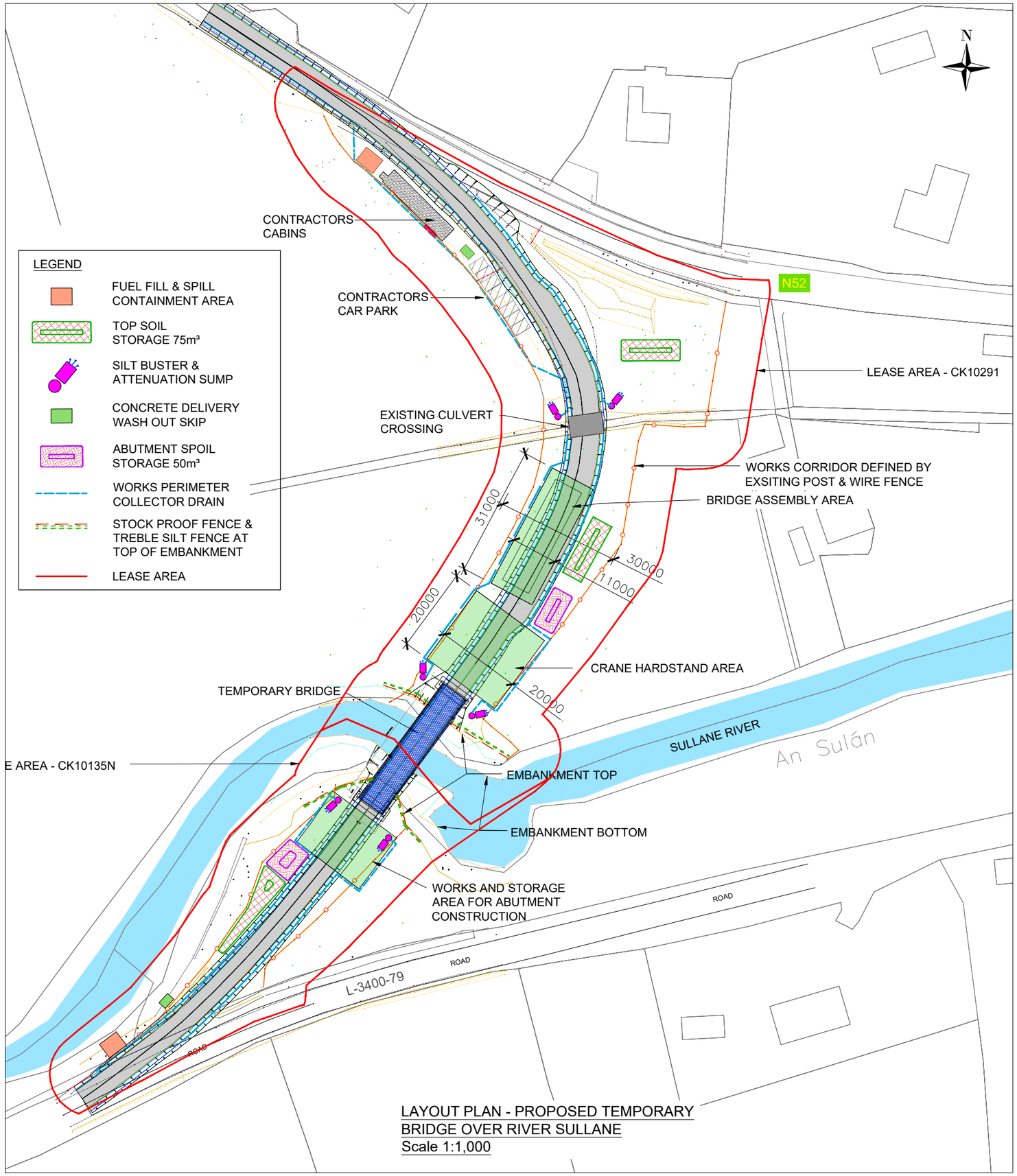
Once the tracks have been removed, the siltbusters and pumps will be removed. The stock-proof fencing and double layer of silt fencing will remain in place until grass has been re-established.

Gates will be removed and the field boundaries reinstated.

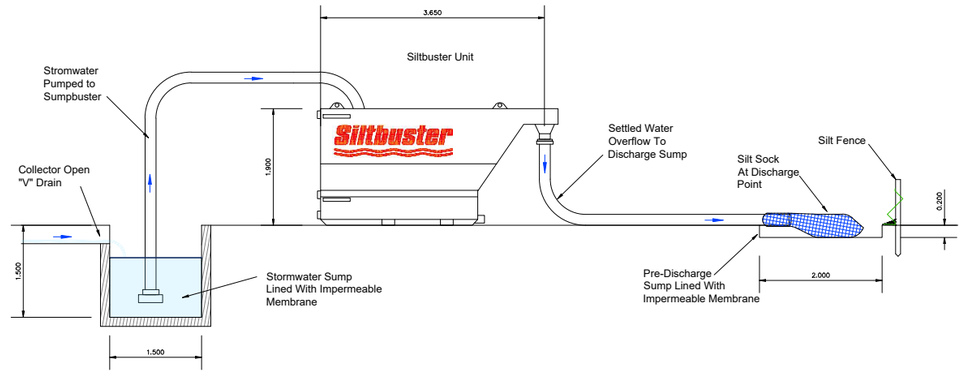
A final/overall report on water quality will be compiled and will be included in the handover file to the Developer.

APPENDIX A

DRAWINGS



LAYOUT PLAN - PROPOSED TEMPORARY BRIDGE OVER RIVER SULLANE
Scale 1:1,000



SILTBUSTER - GENERAL ARRANGEMENT
Scale 1:100

rev.	modifications	by	date

Client: Gortyrahilly Wind DAC

Project: Proposed Wind Farm at Gortryahilly, Ballyvourney, Co. Cork

Stage: Planning

Title: Sullane River Temporary Bridge - Layout Plan

Scales: As Noted @ A3

Surveyed	Prepared By	Checked	Date
	A.McC.	S.M.	15-07-2022

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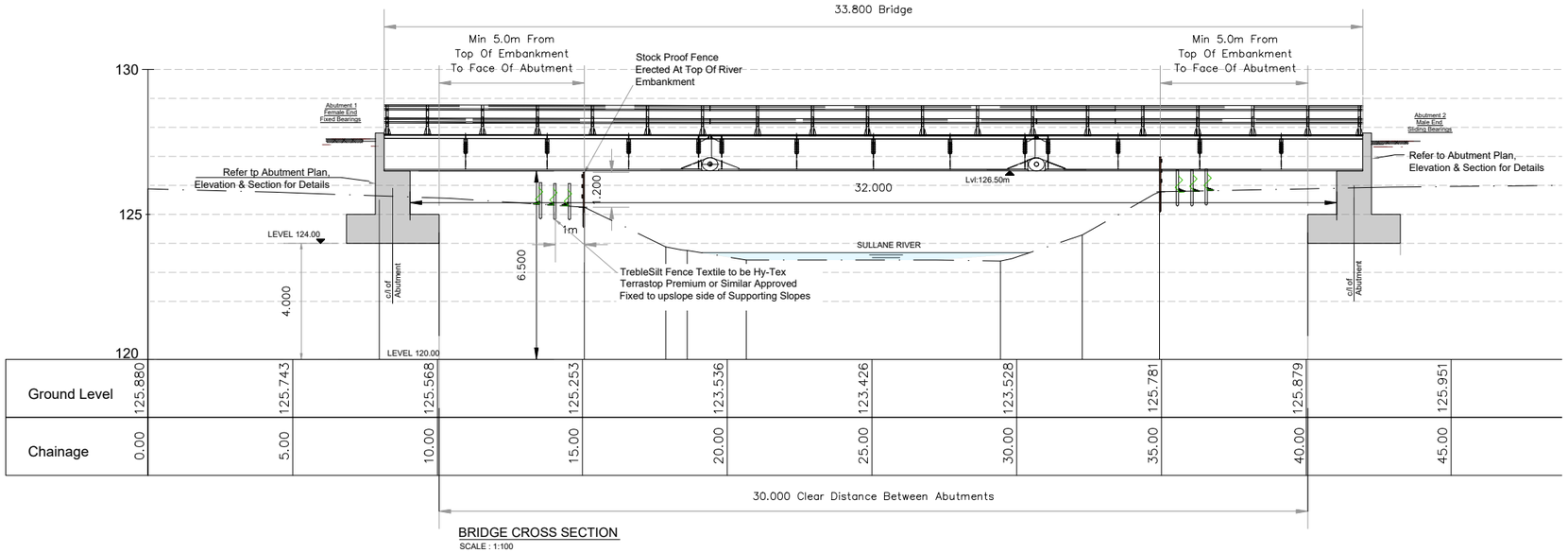
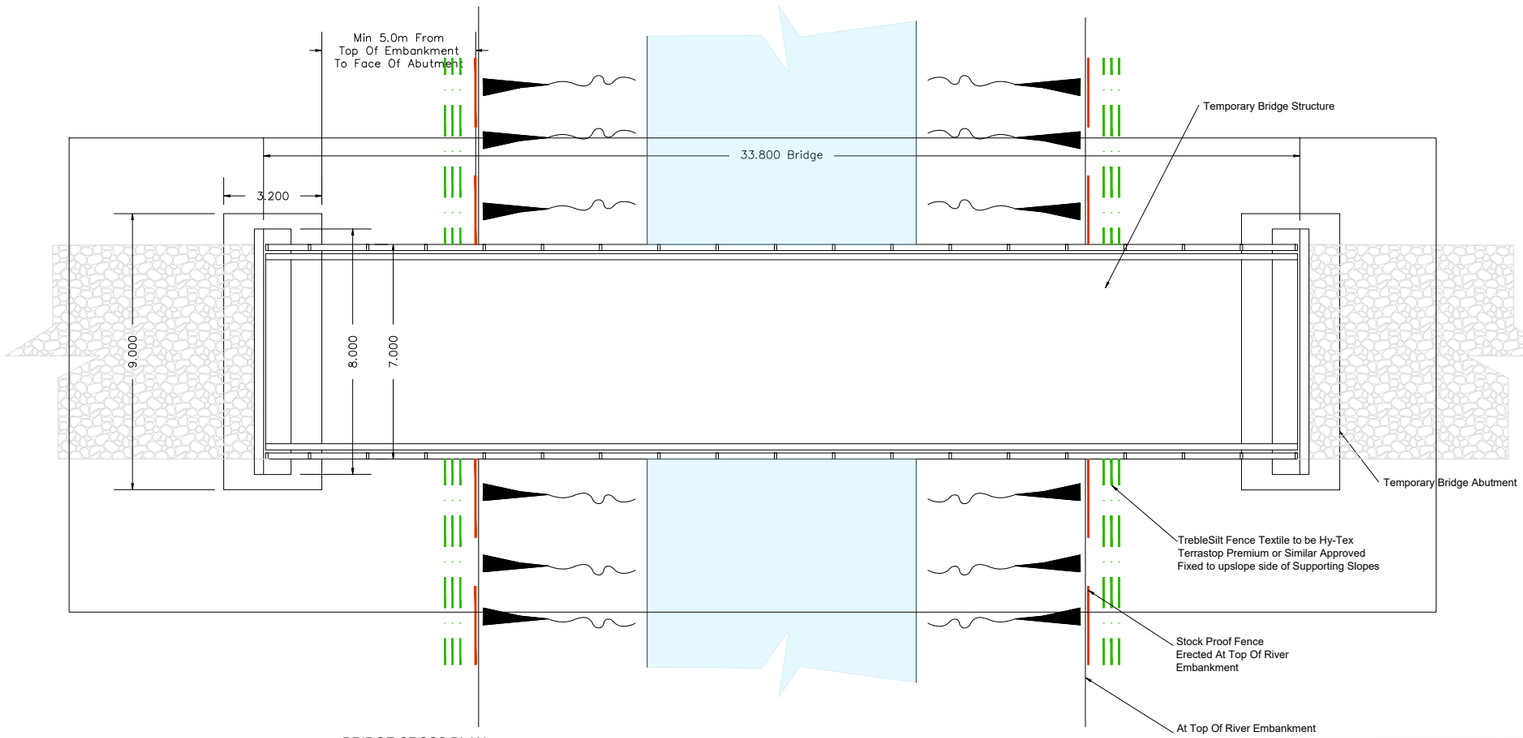
Job No.	Drawing no.	Revision
6225	6225-PL-810	



BRIDGE CROSS SECTION
SCALE : 1:100



BRIDGE CROSS PLAN
SCALE : 1:200

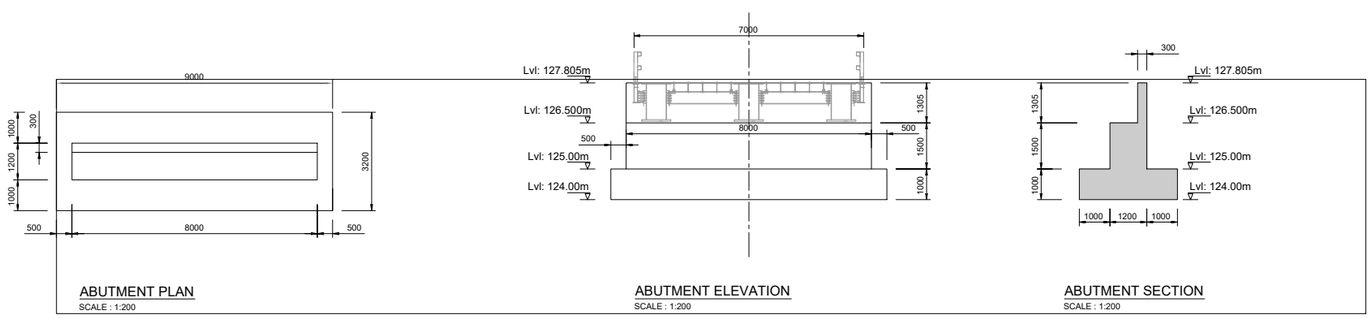


Photo Of Similar Retrobridge

rev.	modifications	by	date

Client: Gortyrahilly Wind DAC

Project: Proposed Wind Farm at Gortryahilly, Ballyvourney, Co. Cork

Stage: Planning

Title: Sullane River Temporary Bridge - Location Plan & Temporary Bridge Details

Scales: As Noted @ A3

Surveyed	Prepared By	Checked	Date
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Job No.	Drawing no.	Revision
6225	6225-PL-811	

APPENDIX B

PHOTOS OF SINGLE SPAN BRIDGE

Photo 1: Temporary Bridge – Typical View

Photo 2: Temporary Bridge – Typical Installation