MWP

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)

Ros an Mhíl Deep Water Quay

Chapter 2: Project Description

Department of Agriculture, Food and the Marine

November 2025

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2. Project Description

2.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) describes and presents information on the proposed development for which consent is being sought (hereafter referred to as the Proposed Development), that is activities that still need to be undertaken to complete the construction of the proposed Ros an Mhíl Deep Water Quay. The purpose of this chapter is to present an appropriate level of project detail to form the basis for the EIAR.

2.2 Development Site and Location

Ros an Mhíl Harbour is located on the north-east shore of Cashla Bay near the village of Ros an Mhíl in Connemara. Ros an Mhíl is located, approximately 40 kilometres to the west of Galway city, within the functional area of Galway County Council.

The location of Ros an Mhíl in a geographical context is shown in Chapter 1. Ros an Mhíl village is located approximately 1km from the harbour. A number of residential dwellings, a local shop, a school, and a church are located within the village. Throughout the surrounding area there are a few localised industries making use of the harbour facilities. These include fish processing, net repairs, boat repairs and diesel and oil supply companies. These industries are dependent on the continued operation of Ros an Mhíl Harbour.

Ros an Mhíl is connected to Galway and the national primary road network via the regional R336 and R372 Regional roads. The R336 / R372 provides a reasonable, albeit low capacity, highway route connecting Ros an Mhíl to Galway and the rest of the country.

Ros an Mhíl Harbour is primarily a fishing port and serves the Irish and foreign fishing fleet that operates off the coast of Galway. It lies between the major fishing ports of Killybegs to the north and Dingle and Castletownbere to the south. It can accommodate vessels up to approximately 5m draught.

The inner harbour is positioned on the north-east shore of upper Cashla Bay and is well sheltered. The existing harbour currently comprises two piers, known as Piers 1 and 2, along with a dedicated passenger ferry terminal and a small craft harbour. Pier 2 is the more recent development of the two piers. The disposition of these piers is such that they create an approximately rectangular shaped basin at the centre of the harbour.

Údarás na Gaeltachta has invested in basic infrastructure in the harbour area. To date the investment has taken the form of two commercial buildings; service roads and a Wastewater Treatment Plant (WWTP) and a slipway. The commercial units are leased to private tenants. Other employers operating in the Harbour area include Bord Iascaigh Mhara (BIM) who operate an Ice Plant; and Iasc Mara Teoranta who operate a pelagic fish (mainly mackerel and herring) processing facility.

2.3 Project Summary

The proposed Deep Water Quay Development will include the following main construction elements:

1. works to complete a Deep Water Quay development as previously permitted by Galway County Council under Planning Ref 17/967 comprising
    a. completion of a 200m Quay wall construction using precast beams, precast caissons and precast L-wall units to full height of the quay wall;
    b. Dredging of a 30m wide x 200m long berthing pocket adjacent to the new quay to a depth of -10.0m CD (previously permitted to -12.0m CD);
    c. Dredging for a turning circle of 150m diameter (previously permitted at 200m diameter) to a depth of -7.0m CD (previously permitted to -8.0m CD);
    d. Backfilling behind the quay wall and raising ground level of reclaimed lands using rockfill up to +7mCD;
    e. Reinforced concrete deck behind the quay wall;
    f. Surfacing of the reclaimed lands;
    g. Asphalt roadway connecting the concrete apron at the quayside to the existing road;
    h. Install lighting columns, underground ducts, surface water drainage, outfalls, interceptor, foul water drainage system including pumping station;
    i. Placement of rock armour for revetments along northern and southern extent of reclaimed land;
    j. Excavation by dredging and rock blasting (if required) of the navigation channel to provide for a fully dredged navigation channel of -7m CD and minimum width of 100m (previously permitted to -8.0m CD and minimum width of 74m);
    k. A temporary site compound for contractor personnel including an effluent holding tank;
    l. A temporary concrete batching plant to provide on-site concrete for the quay wall construction;
    m. Install palisade fencing, roadside guard rails, gates and traffic barrier around land boundary of quay area; and
2. Further development comprising:
    a. A wastewater pipeline to connect proposed wastewater discharge points along the proposed quay to a new pumping station for onward discharge to an Údarás na Gaeltachta wastewater treatment plant at Ros an Mhíl; and
    b. A new ESB electrical sub-station for dedicated power provision to the new deep-water quay

The approach channel has been kept relatively narrow to minimise the wave activity at the berth. With a width of just over 5.7 times the beam of the design ship, this is considered adequate for single way traffic. Because of its proximity to the turning area, two-way traffic is neither needed nor desirable. The quay location is well sheltered, and so waves are unlikely to present any problem to manoeuvres, particularly as the wave climate is minimised by the relatively narrow entrance to the turning area. The spatial dimensions of the proposed development, such as the quay length, dredge depth, and dredge layout (i.e. size of turning area and shape/extent of dredge channel) have been established by the preliminary engineering design work for the project. These spatial dimensions are considered appropriate for facilitating modern day fishing vessels, such as deep-sea trawlers and reefer vessels, up to the following size:

- Length Overall (LOA): 118m;
- Beam: 17.5m; and
- Draught: 6.5m.

In addition, the provision of a deeper berthing pocket in front of the quay will facilitate the tidal arrival and departure of deeper draught vessels which cannot currently be accommodated in the existing harbour. The

berthing frontage is planned to be suitable for vessels berthing directly alongside, though double banking of vessels may also occur.

If necessary, fendering could be supplemented with removable floating fenders for occasional calls by larger vessels. The surface of deep water quay will be a 36m wide x 200m long open area with a concrete slab finish as is typical for quays of this nature. 200mm high steel toe rails will be fitted around the perimeter of the quay. Mooring bollards will also be installed along the quay wall.

Figure 2-1 shows the proposed development boundary in red of all works areas including the dredging areas. The grey hatched area indicates the approach channel and turning area within the sea. Figure 2-2 shows the layout of the works still to be completed for the proposed deep water quay facility. Figure 2-3 provides a photomontage of the proposed development once completed.

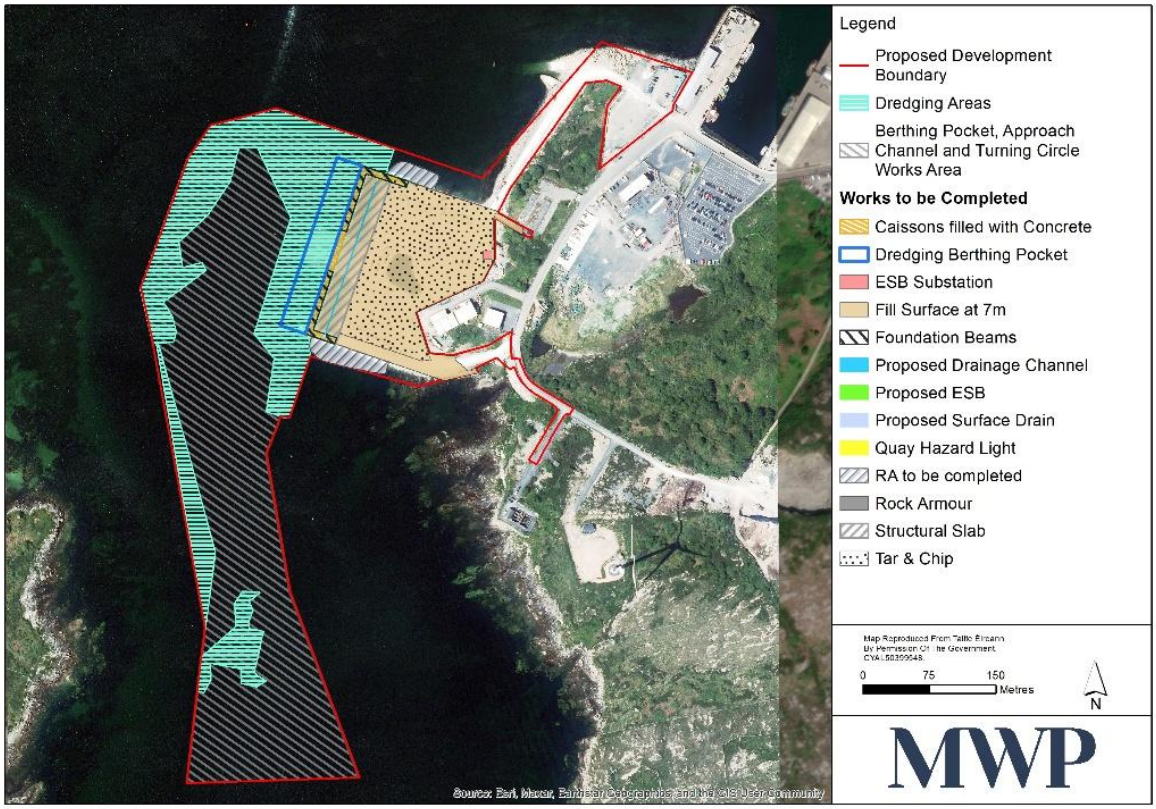

Figure 2-1 Proposed Development Boundary including the reclamation and quay wall works area and the marine dredging areas in the channel (cyan hatched shading).

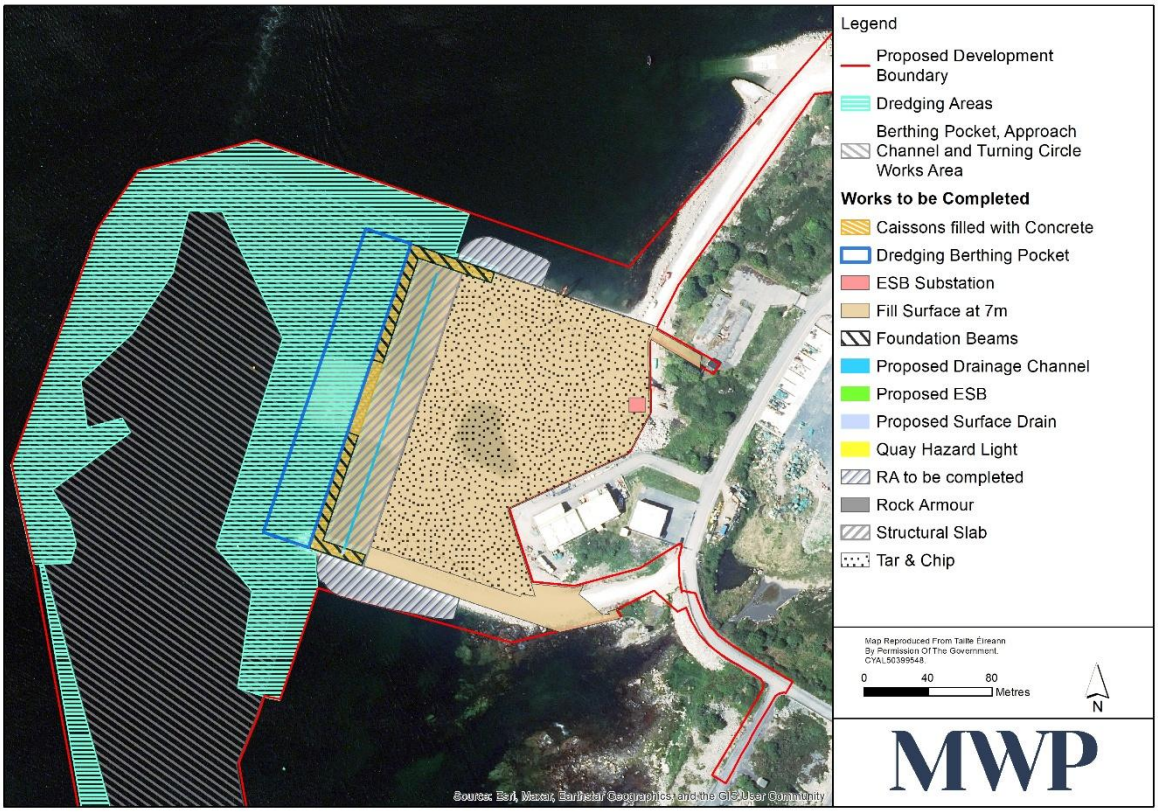

Figure 2-2: Proposed Deep Water Quay Layout

Figure 2-3 Visualisation of the proposed Deep Water Quay Development

2.4 Project Background

Planning permission had previously been granted to the Applicant by Galway County Council on 2nd April 2018 for a new Deep Water Quay development at Ros an Mhíl. (Planning Ref 17/967). As discussed in Section 1.3 of Chapter 1 of the EIAR, construction works on the proposed development began in January 2023 and due to a legal challenge against the decision to extend the duration of the planning permission, the works were terminated on the 20th May 2024. An application for substitute consent and an associated remedial EIAR are being submitted for the previous works undertaken, in parallel with this application for planning permission for the remaining works. The following subsections provide summary information on the works previously undertaken as background information for this EIAR.

2.4.1 Application Boundary

The planning boundary of the 2017 application area is shown in purple on Figure 2-4. This included all the land to be reclaimed and the proposed quay wall. It also includes some land owned by Údarás na Gaeltachta, which is no longer being included in the current project boundary.

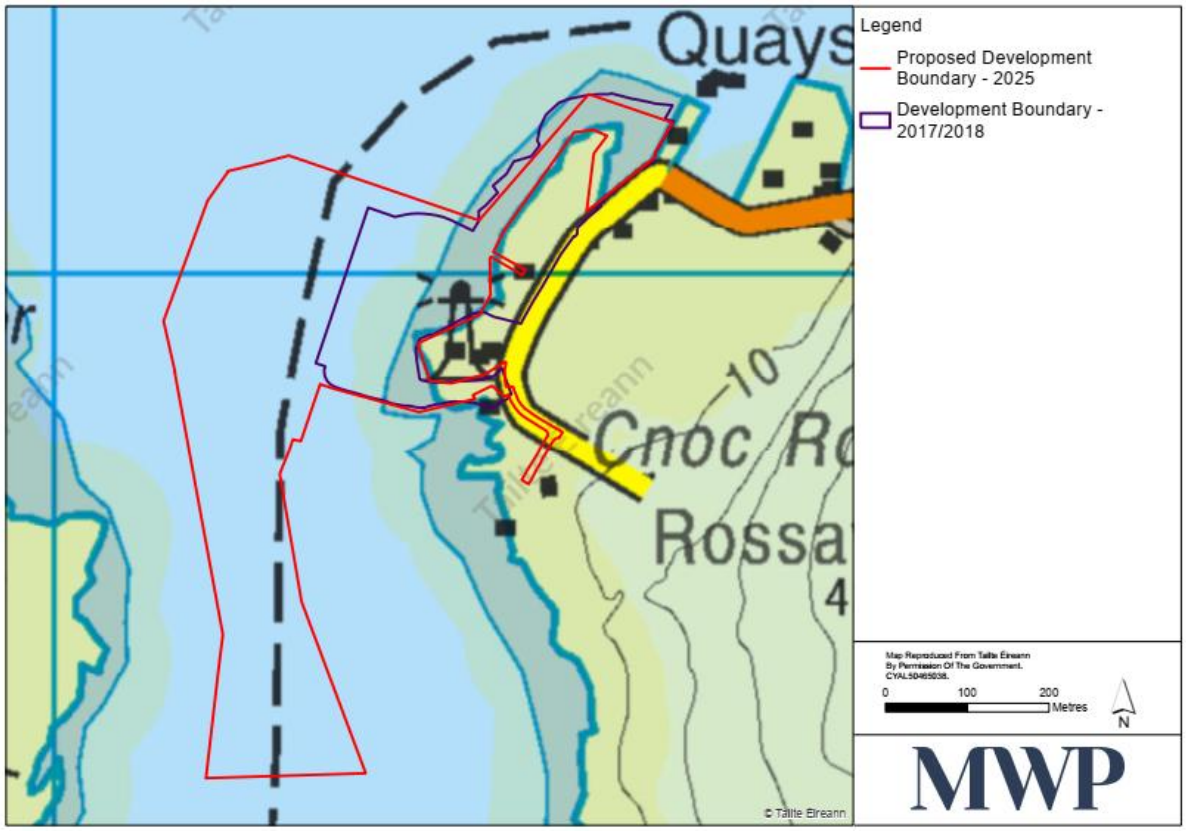

Figure 2-4: 2017 Development Application Planning Boundary (purple) and 2025 Development Application Planning Boundary (red)

2.4.2 Summary of Previous Works Undertaken between January 2023 and May 2024.

Works on the deep water quay development commenced on 26th January 2023 and ceased on 20th May 2024 following legal proceedings.

The first phase of these previous construction works from the 26th January to 10th July 2023 took place during the lawful period. This involved the following works:

1. Mobilisation and development of construction compound and facilities.
2. Reclamation: importing rock fill material to increase the existing ground level to the high-water level and to fill the marine area behind the proposed quay wall (east side) to create a construction surface to the level of +5mCD.
3. Rock Armour for revetments - 75m.
4. Drilling and blasting of 15% of the proposed quay wall trench and berthing pocket (2 blast events).
5. Off-site construction of 20 pre-cast concrete caissons, 2 L-shaped blocks and 8 foundation beams.
6. .

Prior to the expiration of the permission on 10th July 2023, significant works had been completed – 90% of the 2.4 hectares reclamation was complete and 15% of the rock blasting in the middle of the berthing pocket and quay wall trench was complete.

The works carried out between 11th July 2023 to 20th May 2024, are summarised below. These are the works which took place during the period formerly presumed to be permitted.

1. Reclamation Works continued to place engineering fill material into the remaining small hole in the middle of the reclamation area.
2. Temporary protective berm – north arm and sea-ward side.
3. Drilling and blasting of remaining 85% (18 sections) of quay wall trench and berthing pocket plus a small circular area in the channel outside of the berthing pocket completed.
4. Dredging of rock in quay wall trench (50m long).
5. Filling and dredging the blasting platforms in berthing pocket.
6. Installation of Concrete Batching plant.
7. Off-site manufacture 313 and delivery to site of (92) pre-cast concrete caissons.
8. Off-site manufacture (121) L-shaped blocks for wall and 34 foundation beams.
9. Installation of 48m of quay wall foundations.
10. Removal of all construction materials, equipment and facilities from site when works ceased. This removal process took place between 20th May – mid October 2024.

Figure 2-5 provides an aerial view of the development site prior to any works on the deep water quay being undertaken.

Figure 2-6 provides an aerial view of the present day status of the development site.

Figure 2-5 Aerial View of the Development Site prior to works commencing

Figure 2-6 Aerial view of present-day status of the proposed Development Site

2.5 Details of the Proposed Development

The following provides details of the activities and works to be undertaken to complete the Deep Water Quay.

2.5.1 Reclamation Works

The existing reclaimed land from the previous works (original planning permission PL Reg Ref No 17 967) will be used as a working platform for the construction of the quay wall. This land is currently at the +5mCD ground level. Once the quay wall is constructed this area will be further filled and raised by another 2m to reach the +7mCD level needed to ensure protection against flooding. The fill materials for this reclamation work will derive from imported rock, dredged rock from the existing protective berm (that will be removed once the quay wall is constructed) and dredge material from the dredging works in the remainder of berthing pocket and quay wall foundations and the turning circle and approach channel.

The marine materials will be dredged with long-reach excavators on barges and on the berm

2.5.2 Dredging & Blasting

Dredging activities that still remain to be undertaken includes the following:

1. Initial dredging of the previously constructed quay wall foundation to clear it of any rocks that may have fallen off the slopes and onto the quay wall foundations.
2. Dredging at the remainder of the quay wall foundations (152m in length).
3. Dredging of the protective rock berm after the quay wall has been constructed. This is currently located in the already blasted berthing pocket on the west side of the proposed quay wall. This dredged rock will be used as fill behind the quay wall (landside).
4. Dredging of the seabed in the turning circle and approach channel down to -7mCD. It is expected that most of this material will be sands, silts and gravels and this will be used as fill in the reclamation area. There may be some rock encountered in the dredging area that may need to be blasted, but this is expected to be minimal (perhaps 3-10 blasts).

The marine area west of the -10mCD dredged berthing pocket will be dredged to a depth of -7mCD, with a ship turning circle of 150m diameter provided (see green and red areas in Figure 2-7). It is expected that approximately 3,000 cu m of sand, gravel and silt materials will need to be dredged in this area. Bathymetric surveys were previously undertaken to identify the areas where dredging in the channel would be required.

When dredging soft or weak materials such as silks and soft clays, there is a need to reduce the volume of water brought up with the material. For this reason, hydraulic methods of dredging, which dilutes the dredged mixture, are not suitable. Backhoe dredgers are suitable for removing sands and clays at close to their *in situ* density. In addition, backhoes can be used to remove general soft underlying material above the rock before drilling and blasting if required. Since the rock dredging has and will be carried out using backhoe dredgers, the same technology will be used to remove all the soft material as well.

As the seabed material is dredged, it will be loaded by the backhoe dredger on to a dumper truck on a self-propelled barge. Once loaded, the barge will then sail to the adjacent shoreline where the dumper truck will disembark and transport the material within the reclamation location.

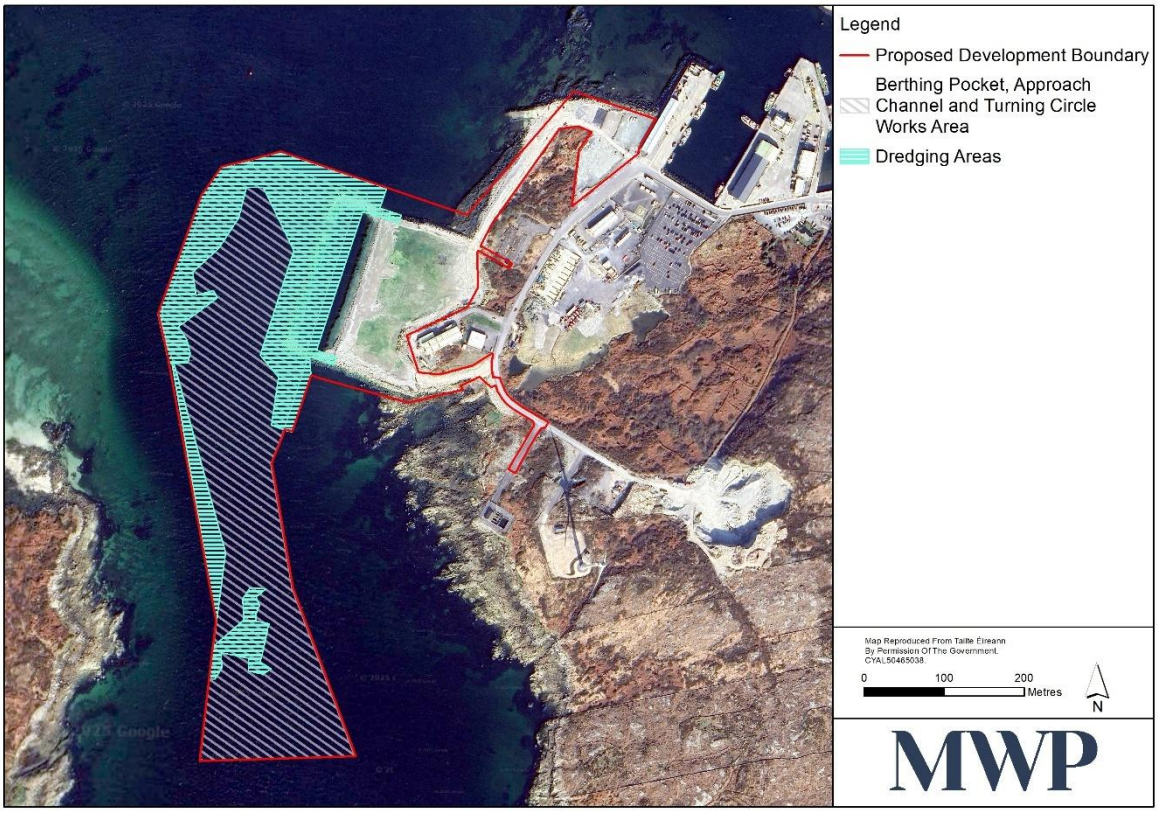

Figure 2-7: Marine areas to be dredged to complete the proposed Quay development.

2.5.3 The Quay Wall

2.5.3.1 Foundations of Quay Wall

During the previous works, 48m of the quay wall foundations were installed. Another 152m of quay wall foundations will be laid as part of construction the proposed quay wall with foundations also being laid for the quay wall returns at the northern and southern end of the main wall. These foundations consist of precast reinforced concrete ground beams (12m long x 0.35m wide x 0.5m high) placed along front and rear lines of the proposed quay wall. The pre-cast concrete beams for the quay wall have been constructed off-site and will be delivered.

Figure 2-8 illustrates how the caissons would be placed on top of the foundation beams. The foundation beams will be lowered into the quay wall trench using land-based cranes and a levelling frame designed specially to lower the beams into position. Figure 2-9 shows this lowering frame with two beams attached before it was lowered into the quay wall trench during the previous works period. This frame has four adjustable hydraulic legs, which, once lowered into the trench and sitting on the bed, will adjust the levels of the beams and frame to the correct level for the foundations of the Quay wall. The top of the foundation beams needs to be at a level of minus 10m Chart Datum on 200m long front wall of quay and at minus 4.74mcd on return walls of the quay. Once correctly positioned, divers will direct liquid concrete delivered via a Tremie Pipe (see Figure 2-10) to surround the concrete beams to hold them in position and ensure their stability and proper bearing. Once

concreted into position and when the concrete has cured, the frame operator will release the beams and the next set of beams will be installed.

Figure 2-8: Photography of the (7m x 4mx 2m) concrete caisson boxes being positioned on precast concrete foundation beams positioned on the ground during a field trial on land.

Figure 2-9: Bespoke frame used to accurately lower and position the foundation beams for the quay wall in the trench.

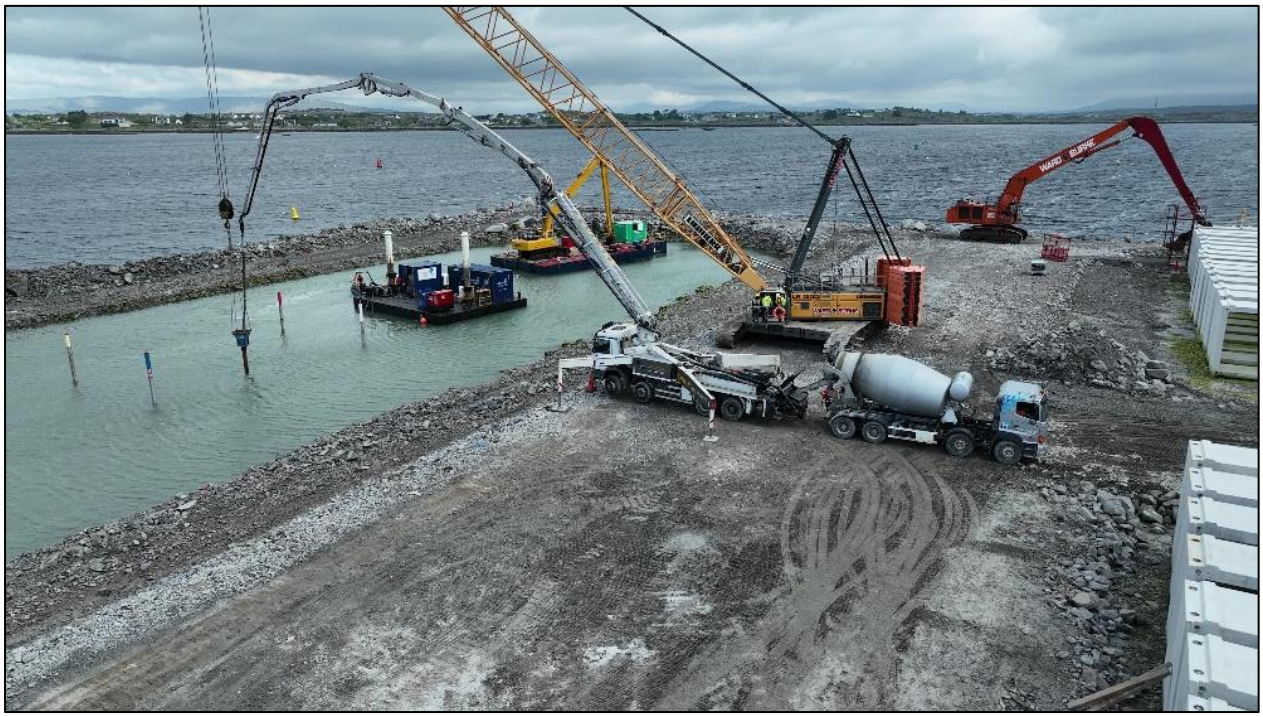

Figure 2-10: Liquid concrete being delivered via Tremie Pipe and directed by underwater divers to surround and hold the foundation beams in place.

2.5.3.2 Pre-cast concrete caissons

Bespoke pre-cast concrete caisson units have been manufactured off-site for the proposed quay wall and are being stored at Banagher Concrete in Co. Offaly and at Harringtons Quarry, Kilkelly, Co. Mayo. These are large concrete box units measuring approximately 7m x 4m x 2m high, weighing approx. 29 tonnes each (see **Figure 2-11**). These caissons will be delivered to site and used for the construction of the new quay wall.

Figure 2-11: Mock up of 7m x 4mx 2m concrete box caisson being positioned on precast concrete ground beams

2.5.3.3 L-Wall Pre-cast Concrete Units

The off-site works on the fabrication of bespoke pre-cast concrete L-Wall Units measuring 2.5m long X 1.4m wide X 3.4m high and weighing approximately 12 tonnes each commenced at Banagher Concrete in Co. Offaly during the previous works period (see Figure 2-12). These are required for placement on top of the caisson wall, as part of the construction of the upper section of the quay wall. These will be installed at the top of the quay wall above the caissons on the seaside. Thereafter, rock will be used to fill the area behind the caissons and these L-Shaped units.

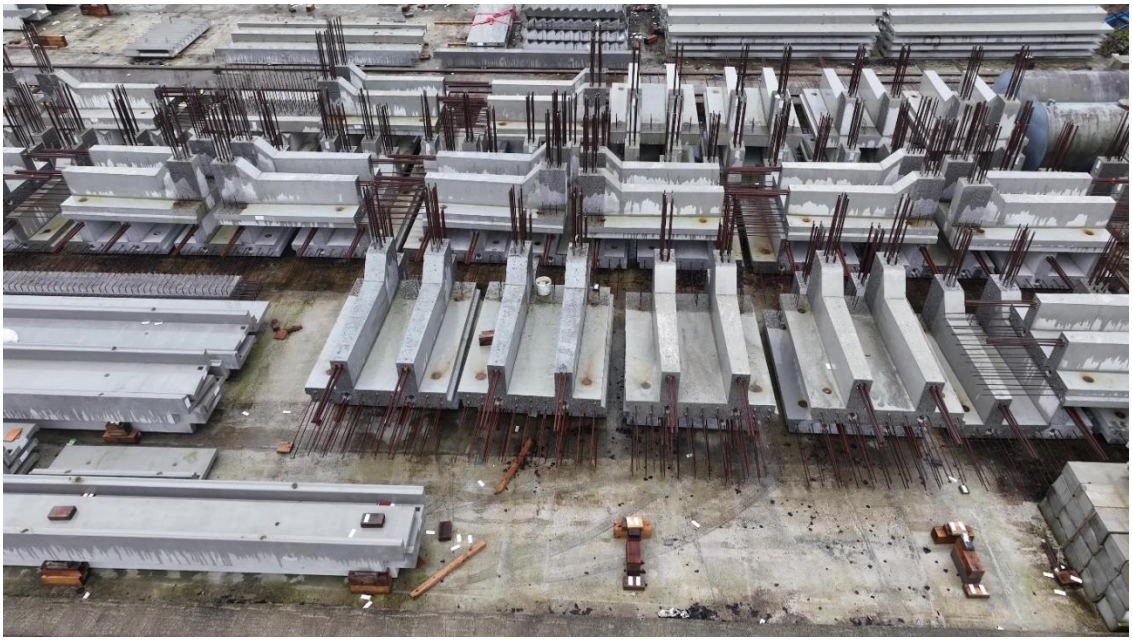

Figure 2-12: Precast wall sections to be placed on top of uppermost row of box caissons.

2.5.3.4 Construction of Quay Wall

The overall length of the quay wall will be 200m. There will be two return walls located at either end of the main quay wall. One will be 47m long at the northern end and the other 35m long one at the southern end of the quay wall.

Quay wall construction involves the placement of the pre-cast caissons on top of the foundation beams/plinth (as illustrated in Figure 2-13). To form the wall, the caissons are installed in rows such that the short side forms the face of the wall. The majority of the caissons measure approximately 7m deep x 4m wide x 2m high. The wall is to be seven meters thick. The lowermost row is placed on top of ground beams. Rows are laid using a pattern similar to “stretcher bond” used in brickwork. Each caisson overlaps midway with the caisson in the row above and below. Once each row of caissons are positioned they will be filled with concrete using a tremie pipe (see Figure 2-10) prior to proceeding to next row. Six rows of caissons are to be installed on 200m long quay wall. Precast wall sections are to be placed on top of the filled caissons.

The returns at either end of the quay wall will have three rows of caissons with precast wall sections on top. The top of the foundation will be a 4.74m CD for each of the returns. The southern return will extend for 35m from the front face of the main quay wall. The northern return will extend 47m from the face of the main quay wall.

Once the caisson wall is constructed, the 121 L-wall units will be connected to the top of the wall on the sea side, to reach the full height of the quay wall.

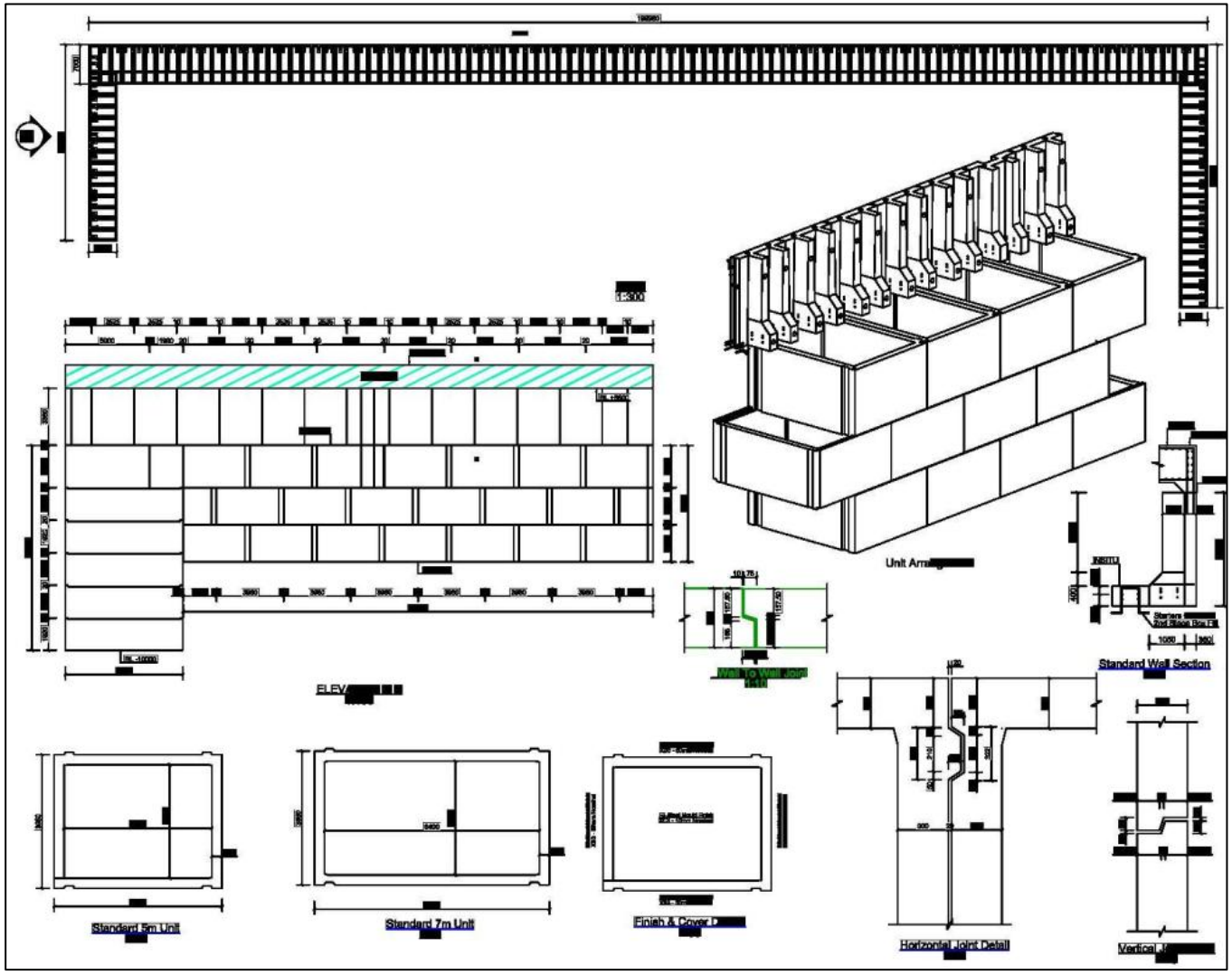

Figure 2-13: Caisson Quay Wall Design.

2.5.4 Fill behind the Quay Wall

Once the quay wall is constructed, the rock used for the protective berm around the quay wall will be excavated and dredged and used to fill the remaining marine area behind the quay wall. The excavators previously used will be used for dredging and reclamation works.

The ground level of the reclaimed area east of the quay wall will then be raised another 2m above the existing ground levels using dredged and imported fill material. This will include an imported cl.804 capping layer of c.300mm deep.

2.5.5 Final Ground Surface

A reinforced concrete slab, extending along the entire length of the quay and measuring 36m wide commencing at the front face of the quay wall, will form the quay deck. The slab will be laid to falls with the storm water being collected by means of road gullies. The storm water collector pipe will pass through an oil interceptor before being discharged to sea via a non-return valve. Prior to casting of the reinforced concrete deck, the area of the slab is to be surcharged with a three-meter depth of stone for a period of at least four weeks.

The rest of the reclaimed land will be topped with a surface dressing using a bituminous tack coat with stone chips. This will be used as a running surface for fisheries related traffic in the hinterland area during the operational phase.

2.5.6 Protective Rock Armour Revetments

The construction of the proposed development will require the construction of two 125m protective rock revetments from the existing shoreline to the proposed quay wall. One to the north and one to the south of the proposed quay wall. 112m of these rock revetments have already been constructed during the previous works period. Another 138m length of rock armour still needs to be installed to complete the revetment works. This will involve the use of underlying geotextile on which will be placed a 1.1m deep underlayer on top of which will be placed two layers of rock armour of size 0.5. to 6 tonnes imported from local quarries. A total of 3918cum of this rock will be imported from local quarries.

Figure 2-14) shows an example of the laying of a geotextile underlayer and rock armour layers along part of the southern revetment during the previous works.

2.5.7 Access Roads & Entrance

A new asphalt access road connecting the concrete apron at the quayside to the existing road at the southern side of the site is proposed to be constructed (see Figure 2-15). This will be a 200m long x 7.8m wide access route. There are to be 1.8m wide pedestrian footpaths on both sides of this access route as well as 1.2m high vehicle safety barriers on each side of the route.

Figure 2-14: Construction of Rock Armour for the revetment (underlaid with geotextile).

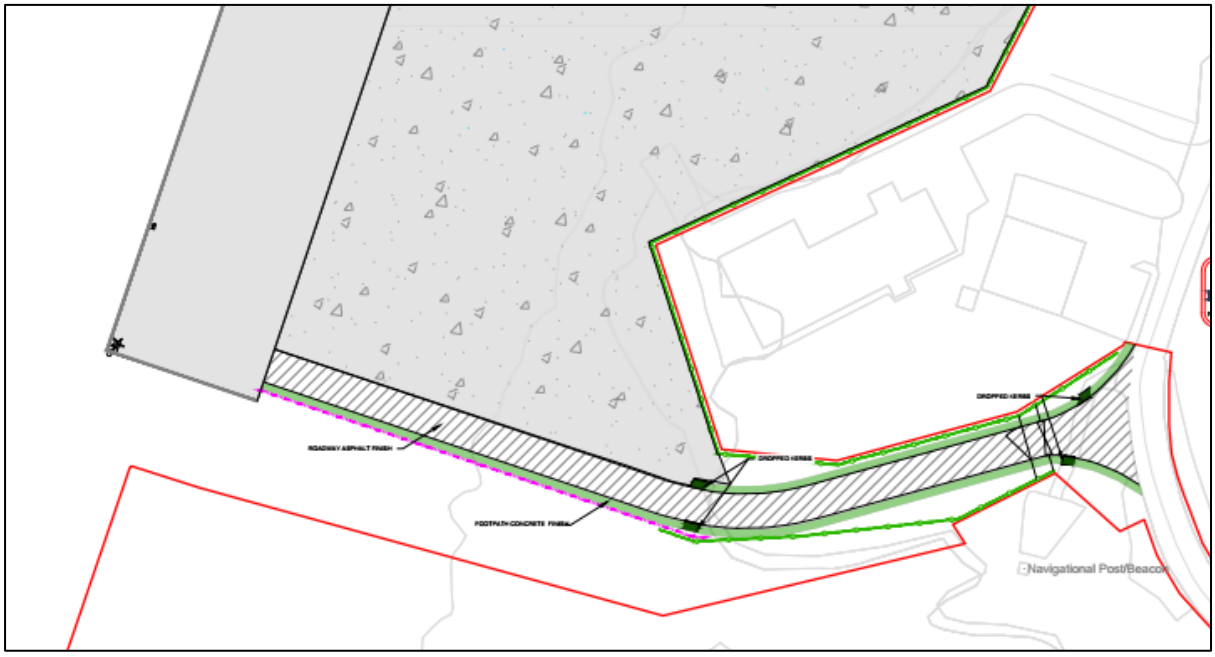

Figure 2-15: Access Road Design (diagonal hatched shading)

Figure 2-16: Photograph illustrating the kind of entrance gates to be installed for the Ros an Mhíl Deep Water Harbour.

2.5.8 Water Supply Services

Irish Water currently provides a 250mm diameter water main to the edge of the harbour area. This water main is supplied by the Carraroe / Ros an Mhílg system. From the edge of the harbour area a 100/150mm water main system supplies the existing harbour area. The water network in the harbour area is under the control of the DAFM, which is responsible for distribution and water rates thereafter.

It is proposed to extend this 100/150mm system to provide potable water to the deep water quay (see **Figure 2-17 and 2-18**). The new water main will connect to the existing system at the beginning of the proposed access road, the new line will then run through a service duct in the road out to the deep water quay itself. The main will loop around the outside of the deep water quay in a service duct. Taps and hydrants will be provided at regular intervals for use on the deep water quay. The estimated maximum water demands at the quay is expected to be:

- Maximum Hourly Demand 50 m^3/hr
- Maximum Daily Demand 150 m^3/day

No significant increase in water demand is expected as a result of the new harbour facilities as the existing fisheries facilities and uses are expected to spread out. Water usage in the Fishery Harbour is typically 600m3 per month between October – March and 300m3 per month between April – September.

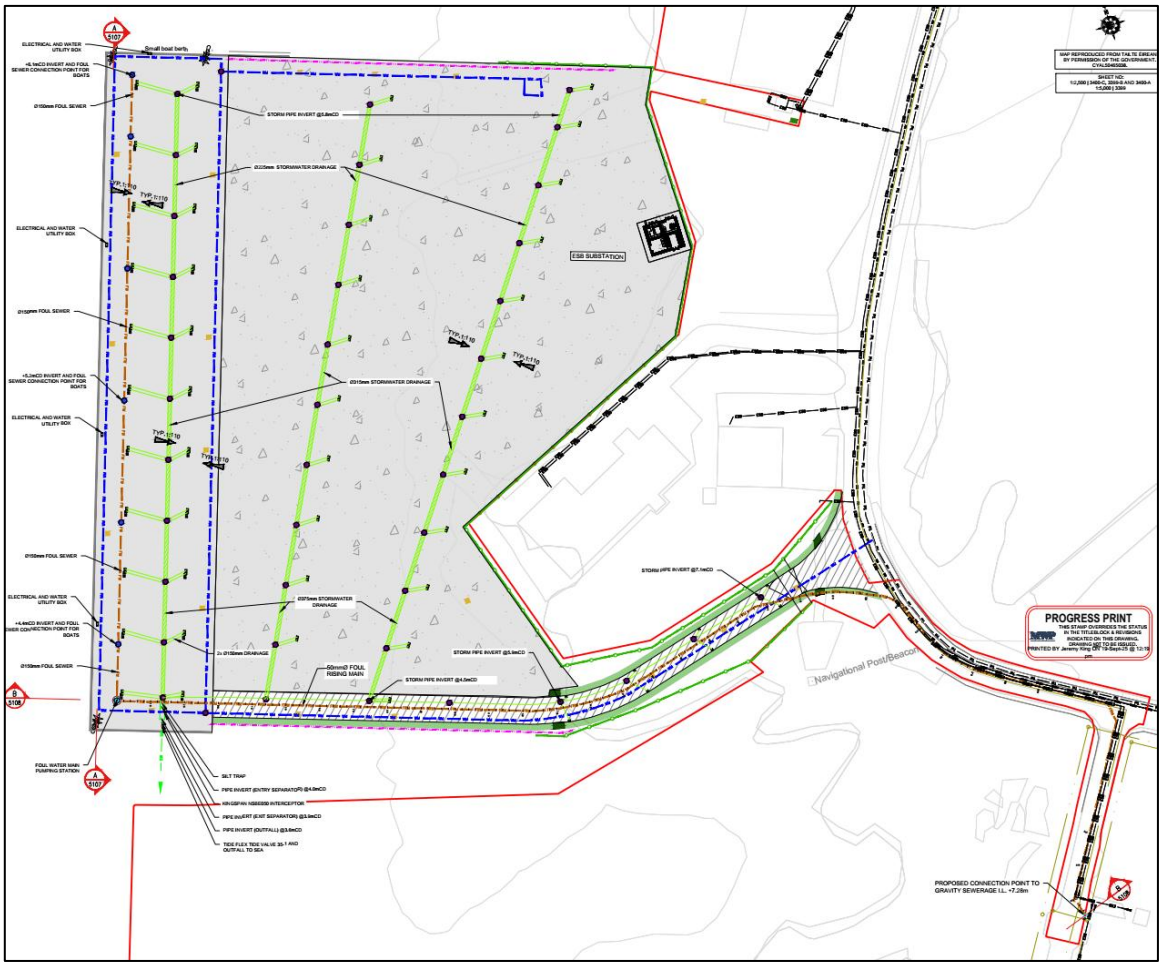

Figure 2-17: Proposed watermain, stormwater and foul water discharge facilities

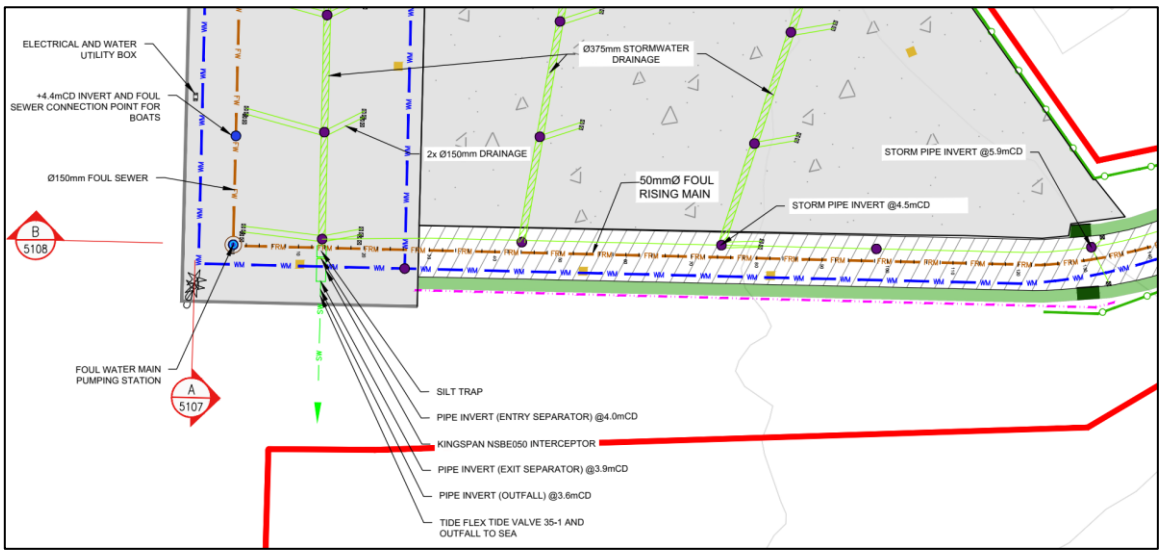

Figure 2-18: More details on the drainage details in the vicinity of the interceptor and outfall for the storm water.

2.5.9 Foul Water Drainage Network,

The existing harbour area is serviced by a sewerage system which is operated by Údarás na Gaeltachta. The sewerage system comprises of gravity fed lines that discharge into two pumping stations. The pumping stations pump sewage under pressure to the wastewater treatment plant. Treated sewage is disposed of through an outlet into Cashla Bay. Information provided by Údarás na Gaeltachta for the effluent treatment plant details the ultimate capacity of the plant as 2,100 m3/week. The current loading is understood to be 956 m3/week.

The deep water quay has been designed to accommodate mainly reefer ships (refrigerated cargo ships) and trawlers. A large number of reefer ships have their own onboard wastewater treatment systems and can discharge at sea in accordance with International Maritime Organisation requirements 3. However, in the event that wastewater collection/treatment facilities are required, then it is expected that the maximum loading would be of the order of 35m3/week. It is proposed to provide sewerage discharge points at regular intervals along the deep water quay to be used by fishing vessels. The discharge points will feed into a 150 mm gravity sewer pipe that will run down the length of the quay. The gravity line will discharge into a small pumping station, which will in turn discharge into the existing sewerage network which is operated by Údarás na Gaeltachta (see Figure 2-17).

Foul pumping station for DAFM harbour usage will have a typical maximum sewage volume from harbour/boats of 5 m^3/day at a max flow rate of 1.8 ltr/sec.

2.5.10 Storm water Drainage Network

The deep water quay will be provided with cross falls to allow runoff to flow into road gullies and from there into a collector pipe under the centre of the quay. The central storm drain discharge will be processed by a proprietary oil separator system prior to discharge directly into the sea. The oil separator system will be serviced regularly, and any sludge build up will be collected by a licenced Contractor and disposed to an appropriately licenced facility.

Storm drainage network including road gullies, gully pots, manholes, pipe work 150mm diameter to 375mm diameter and a fuel separator to be laid beneath the surfaced dressed area as well as the concrete apron (see Figure 2-17).

2.5.11 Vessel Fuel Bunkering

Vessels requiring fuel at the deep water quay will be serviced by road tankers discharging directly to the vessels. The frequency of these road tankers is not expected to be significant and on average will be less than one per day.

2.5.12 Electricity supply and Substation

2.5.12.1 ESB Substation

The proposed development will include the construction of a new ESB Substation with an MV connection at the harbour development site, which will serve all of the electrical requirements of this site. This substation is illustrated in Figures 2-19 and 2-20 below and will have a floor area of just under 92m^2. The location of the substation is mapped in Figure 2-21. This is to be constructed at the eastern boundary of the site. This sub-station will be connected to the existing sub-station on the lands to the east of this site.

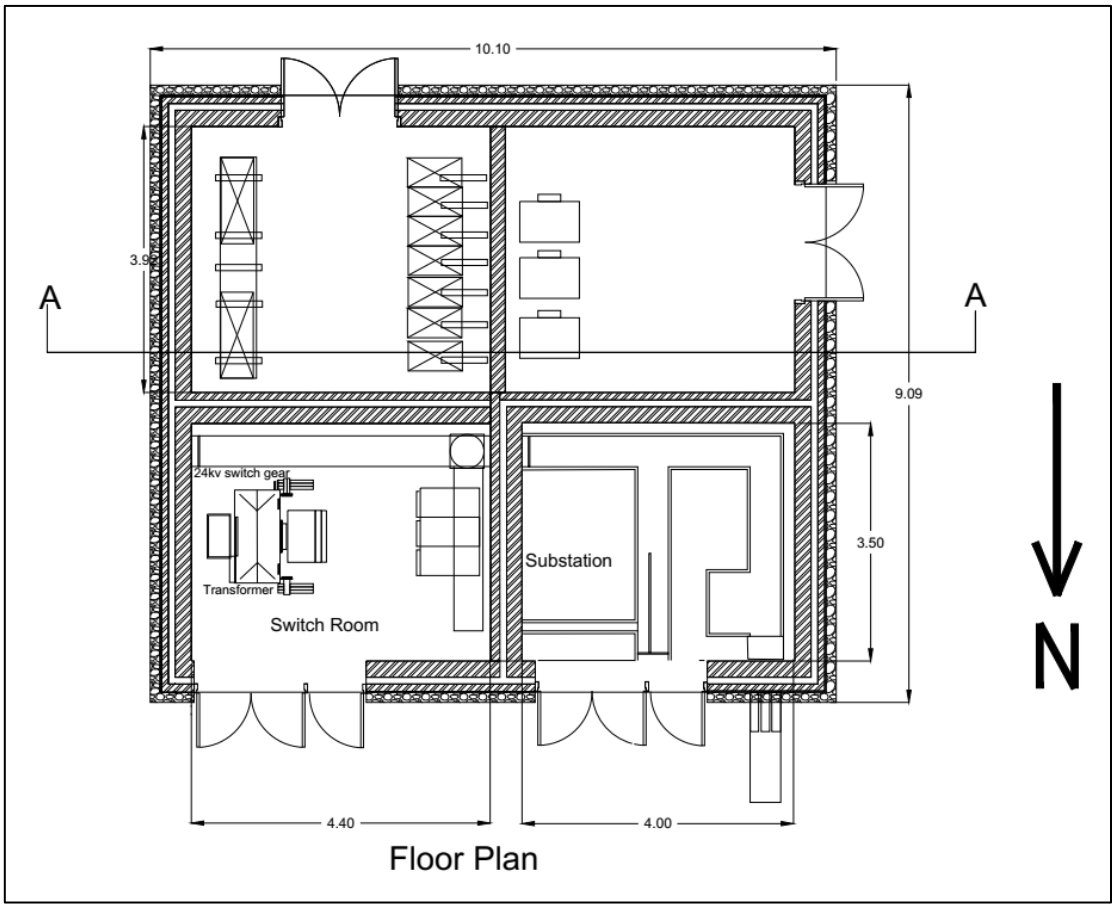

Figure 2-19: Proposed Substation Floor Plan

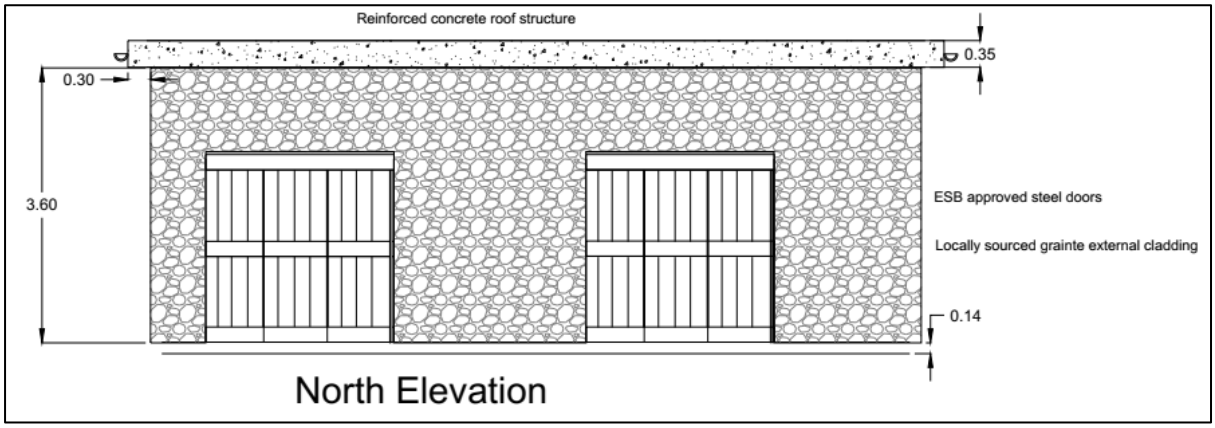

Figure 2-20: Elevation drawing of proposed substation.

2.5.12.2 Electrical Ducts

Electrical ducts throughout the site will connect the power supply at the proposed new ESB Substation to installed Utility boxes located along the quay and to the High Mast Lights, CCTV cameras, Foul sewer pump station and Fuel Interceptor on the site.

2.5.13 Lighting

Lighting will be provided in accordance with Section 3.1.3 of the Code of Practice: Safety and Health in Ports (2005) published by the International Labour Organization, which contains recommendations in relation to lighting for port facilities and which are considered appropriate in the context of the deep water quay. These recommendations include:

- Adequate lighting of all working port areas should be provided during the hours of darkness and at times of reduced visibility.
- Different levels of lighting may be appropriate in different areas;
- On access routes for people, plant and vehicles, and in lorry parks and similar areas, the minimum level of illumination should not be less than 10 lux; and
- In operational areas where people and vehicles or plant work together, the minimum level of illumination should not be less than 50 lux.

It is proposed that 4 no. 25m high lighting masts will be provided on the deep water quay (see black dots in **Figure 2-21**). Each mast will be fitted with 8no. Lanterns c/w an adjustable electronic photocell. Feeder cabinets will be located adjacent to high masts. The average level of illumination will be 50 lux in accordance with the International Labour Organization recommendations. In addition, eight no. 6m high masts similar to existing street lighting already extant at Ros an Mhíl Harbour will be provided on the access road to the deep water quay.

There will be 3no. quay hazard lights fixed on 3.3m high x 355mm diameter poles at the front corners of the quay and on northern return on quay wall.

2.5.14 Telecommunications ducting

Underground ducting for telecommunications networks will be installed alongside the electrical network for the harbour. Eircom Telecoms company to supply a fibre broadband service into and throughout the Ros an Mhíl Harbour area.

2.5.15 Boundary fencing, Safety, and Security

2.5.15.1 Fencing along the sites land boundary.

Permanent security fencing to be installed along the site land boundaries (see green line in **Figure 2-22** and **2-22**). This fence will be a 2.4m high coated steel palisade fence coloured green. The proposed gates at the entrance to the site are illustrated in **Figure 2-16**.

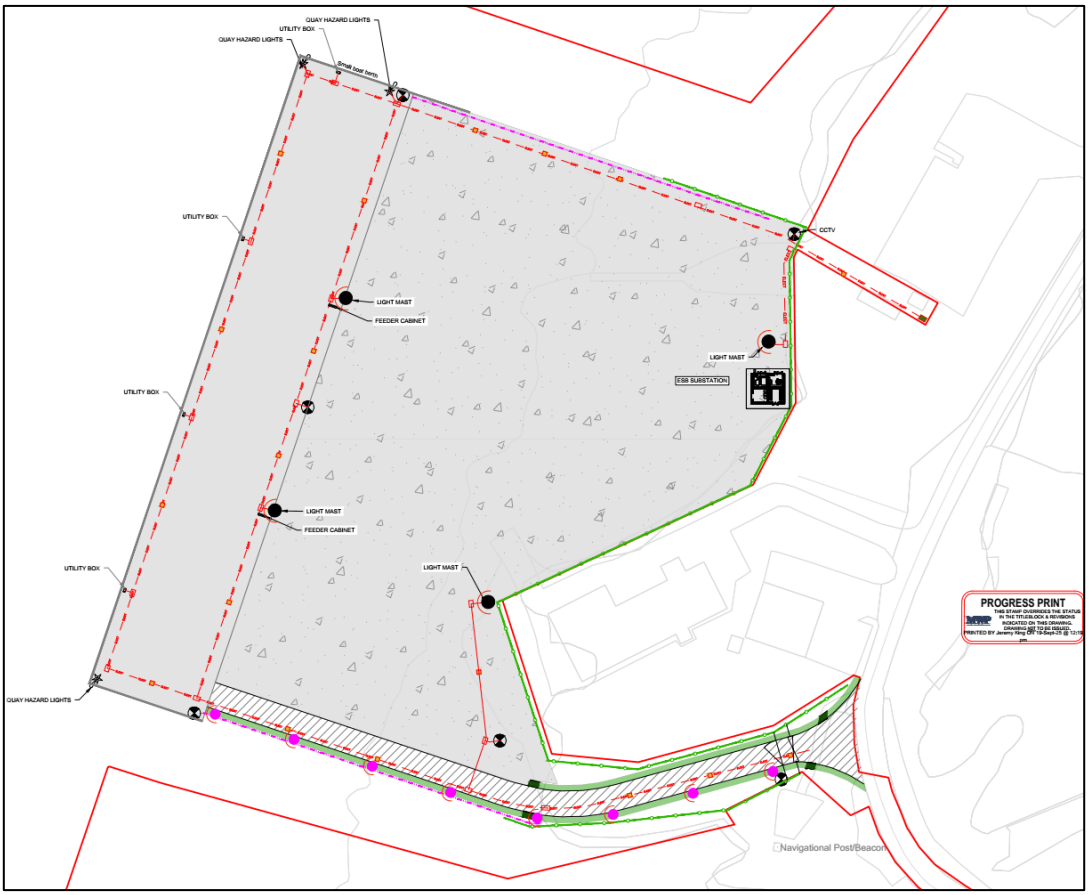

Figure 2-21: Substation location (pink) and Electrical Layout (red dashed lines)

Figure 2-22 2.4m high Palisade Fencing

2.5.15.2 Seashore Security Barriers and Safety Facilities

The following security and safety facilities will be installed along the seashore of the harbour:

- Crash barriers along either side of the access road (see **Figure 2-23**)
- Automatic Security Barriers will be installed at the site entrance.
- Steel toe rails (see **Figure 2-23**) will be installed along the quay wall.
- 13no. 50T Stag Horn Bollards and 3no. 100T Stag Horn Bollards to be installed along quay edge.
- 10no. galvanised steel ladders (8m long) to be installed on face of quay wall.

Toe Rail

Bollards

Figure 2-23: Security/Safety facilities to be installed along the quay wall.

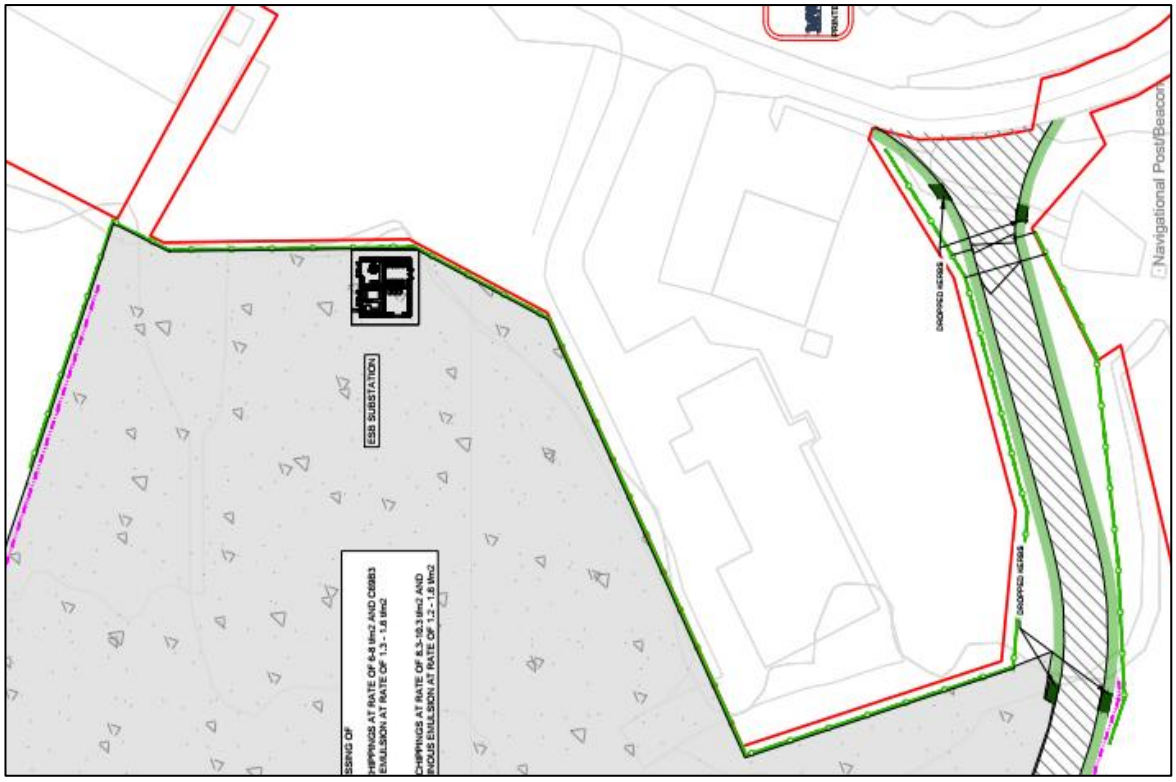

Figure 2-24: Layout for (green line) perimeter fence around proposed development site.

2.5.16 Development Lands Ownership

The proposed project lands are private lands - owned by the DAFM, and part by Údarás na Gaeltachta. Údarás na Gaeltachta have invested in basic infrastructure in the harbour area. To date the investment has taken the form of two commercial buildings; service roads and a slipway. The commercial units are leased to private tenants.

2.6 Description of Construction

2.6.1 Mobilisation and Construction Compound and Facilities

A temporary contractors compound will be located in the northern corner of the proposed project site adjacent to the existing Ross an Mhíl harbour facilities in a surfaced area previously used for parking (see Figures 2-25 to 2-27). This compound will include temporary site offices (Portacabins), staff welfare facilities and car parking, and equipment lay down areas.

Office compound welfare facilities will be connected to a waste-water holding tank installed for the duration of the construction works and removed thereafter. The waste water holding tank will be emptied as required and effluent disposed of at a municipal WWTP.

Figure 2-25: Layout for the Construction Compound Facilities at the northern end of the proposed development site.

Figure 2-26: Photograph on the 14th Dec 2023 View of Compound, Concrete Batching Plant, Aggregate Storage Areas in foreground with works area in background.

Figure 2-27: Photograph of the Construction compound with offices, storage and parking areas.

2.6.2 Concrete Batching Plant

A project specific ready-mix concrete batching plant will also form part of the construction facilities on site (see Figure 2-28). This plant will be used to provide concrete for the construction of the quay wall and associated platform.

Storage areas for the construction materials and supplies for the concrete production plant will be located adjacent to the construction compound (see Figure 2-29).

Figure 2-28: Photograph of the mobile Concrete Batching Plant and water storage tank.

Figure 2-29: Storage areas for the construction materials and supplies for the concrete production plant adjacent to the construction compound.

2.6.3 Material Quantities for Construction of Caissons and Reclamation

Table 2-1 provides a summary of the quantity and volumes of materials still to be used for the construction of the Ros an Mhíl Deep Water Quay.

Table 2-1: Volumes of materials used or to be used for the construction of the proposed Deep Water Quay.

Materials	Works still to be completed
Pre-cast concrete Caissons	All 358 to be delivered to site.
Pre-cast concrete L-shaped blocks	all 121 to be delivered
Pre-cast concrete Foundation Beams	40 to be delivered and installed
Rock Armour (1-6 tonne rocks)	54% still to be completed - 138m (length) 3918cum
Protective Rock Berm/Bund	Removal after Quay wall completed – rock to be re-used as fill.
Rock fill (imported)	Previously imported plus on-site blasted rock used as fill. Plus 20,000m^3 imported material
Concrete making materials (sand, gravel, cement, etc)	26,000cum
Wet concrete	26,000cum.to complete foundations, fill the caissons and create the concrete slab over the Quay wall (36m wide x 200m long)
Explosives	Uncertain if needed, 5 drill holes at most. Rock breaker to be used and only if unsuccessful will blasting be employed.
Gravel for surfaces	clause 804 gravel (300mm deep on top of the large reclaimed land (9,000m^3)
Use of dredged rock material	Fill for reclamation area
Use of sand and gravel dredged material.	Use as fill in reclamation area
Ducting and pipes (services and drains)	800m Ø100mm watermain 800m storm drains 6000m Ø125mm electrical ducts
Substation equipment/facilities	1 substation and housing
Fencing	555m
Toe barrier	280m
Bollards	10no. 20T + 6no.10T
Street Lights and Masts	4no. High Mast Lights 8no. Street Light. 4no. CCTV Poles.

2.6.4 Barge-based Drilling and Blasting

The vast majority of the drilling and blasting work required for the construction of the quay has already been completed. This was focused on the berthing pocket and quay wall foundations. It is not certain if further blasting will be needed for the remaining dredging of the turning circle and approach channel. It is anticipated that if required this will be minimal and may only require somewhere between 3 and 10 blasts at specific locations where rock is found above -7mCD. The dredging will be undertaken using backhoe dredgers and excavators located on self-propelled barges.

As the seabed material is dredged, it will be loaded by the backhoe dredger onto a dump truck on a self-propelled barge. Once loaded, the barge will then sail to the adjacent shoreline where the dump truck will disembark and place the material within the reclamation location.

If blasting is required, the blastholes will be drilled to a depth at least 2m lower than the desired dredge level to ensure that fragmentation is achieved across the whole of the surface area to be blasted. The dredger to be used has the power and the bucket size to rip out boulders, as well as the ability to dislodge any blasted rock which does not bulk up after blasting.

2.6.5 Construction Working Hours

Normal working hours during the construction period will be Monday to Friday 07.00 to 19.00 hours and Saturday 07.00 to 14.00 hours.

2.6.6 Construction Personnel

During the construction phase, the number of on-site construction personnel will vary for each phase of the development. Overall, up to 30 persons will be on site during the construction phase and will include site contractors, on-site vehicle and plant operators, engineers, materials delivery personnel, environmental personnel, health and safety personnel.

2.6.7 Construction Vehicles

Deliveries for Works still to be undertaken will include the following:

- The construction compound and concrete batching plant to be reinstated – involving the delivery of 20 trucks (and no abnormal loads).
- 3918cum (6,661 Tonnes) of rock armour for the revetments
- Steel for concrete works - 12 trucks
- For the remaining works, 20 000cum of additional rock will need to be delivered for fill. = 1700 (20 tonne) trucks.
- Rock armour 3918m^3 to be delivered from local quarries (each rock 2-6 tons) = 223 trucks.
- 26,000 cum (44,200 tonnes) of concrete making materials (sand, gravel and cement etc) will be delivered.
- All 358 caissons will need to be delivered to site over a period of 5 months (amounts to 3 caisson trucks per day) – 1 caisson per truck.
- 40 Beams and 121 L-shaped sections also to be delivered on 64 trucks.
- Harbour furniture Services (pipes, cables etc) - 10 loads, and fencing - 30 loads.
- Construction personnel – max of 30 persons per day.

2.6.8 Construction Environmental Management Plan (CEMP)

A Construction Environmental Management Plan (CEMP) plan has been developed for the proposed development in order to manage the construction process. (see Appendix 2A of the EIAR).

The primary objective of the CEMP is to provide a framework for actions, responsibilities and protocols associated with environmental management with which the Appointed Contractor(s) are required to adhere in order to construct the proposed development in accordance with regulatory requirements and to reduce and/or avoid any adverse environmental impacts. The CEMP will be a 'live' document under ownership of the Developer and managed by the Principal Contractor once appointed up to and throughout the period of construction.

The proposed procedures for the implementation of the mitigation measures outlined in the CEMP and their effectiveness and completion will be monitored by the appointed Contractors Environmental Officer.

The Contractor will be responsible for implementing the mitigation measures specified in the EIAR and consolidated in the CEMP.

The Contractor is also responsible for ensuring that all construction staff understand the importance of implementing the mitigation measures. The implementation of the mitigation measures will be overseen by the appointed Contractors Environmental Officer

2.7 Operational Activities

2.7.1 Operating Hours and Operational Conditions

The deep water quay will be used by the existing fishing fleet as a 24-hour operation. Vessels may enter and depart the harbour at any time during the day and night. This usage level is consistent with the present usage at the existing Ros an Mhíl Harbour.

Once the deep water quay is constructed, this will form an extension to the existing Ros an Mhíl Harbour. Although fishing quotas are not expected to increase, the quay will make Ros an Mhíl more suitable for larger Irish and foreign vessels of >30m Length Overall (LOA). The quay itself has been designed to accommodate vessels up to the following size:

- Length Overall (LOA): 118m;
- Beam: 17.5m; and
- Draught: 6.5m.

It is anticipated in 2028 will be the first year of operation for the new deep water quay. In 2039 the quay is expected to reach its full operational potential. The pelagic season is generally 26 weeks per year between October and March and the demersal season is approximately 44 weeks per year.

Further information on the traffic impacts associated with the operational phase of the deep water quay is discussed in Chapter 14 of the EIAR The onshore reclamation area will be surfaced and used for fisheries loading, offloading, maintenance and storage.

2.7.2 Compliance with International Regulations and Standards

The operational activities of the deep water quay will be conducted in accordance with applicable international regulations and standards, including:

- International Labour Organization (ILO) Code of Practice for Safety and Health in Ports (2005);

- General Conference of the International ILO Convention concerning Occupational Safety and Health in Dock Work, C-152, (1979);
- General Conference of the ILO Recommendation concerning Occupational Safety and Health in Dock Work, R-160;
- IMO Code of Practice for Solid Bulk Cargo (BC Code);
- International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code);
- International Code for the Safe Carriage of Grain in Bulk (International Grain Code);
- Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code); and
- International Maritime Dangerous Goods Code (IMDG Code).

2.8 Decommissioning

No decommissioning phase is envisaged for the deep water harbour once it is constructed and operational.

2.9 The Use of Natural Resources

2.9.1 Aggregate

It has been calculated that there will be approximately 3,000 m³ of rock excavated during the construction of the proposed development. It is intended that all material generated from excavation works will be retained on site and reused in the reclamation process.

The aggregate from the temporary sea berm will also be used to complete the reclamation of land behind the quay wall.

2.9.2 Water

Water needs for construction activities will be limited to concrete truck chute washing, wheel wash, dust suppression and sanitary facilities. This water requirement will be sourced from the mains water supply.

It is estimated that up to approximately 3,000 litres per day of potable water will be required during peak construction for employees. It is proposed that this potable water requirement will be imported in bulk water tanks.

No significant increase in water demand is expected as a result of the new harbour facilities as the existing fisheries facilities and uses are expected to spread out. Potable water for the operational and maintenance phase of the Fishery Harbour is estimated to be approximately 600m3 per month between October to March & 300m3 per month between April to September. This water will be supplied via the mains water supply.

2.10 The Production of Waste

2.10.1 Domestic Waste-Water Effluent

Wastewater from welfare facilities on site will drain to integrated wastewater holding tanks associated with the toilet units. The stored effluent will then be collected on a regular basis from site by a permitted waste contractor and removed to a licensed/permitted waste facility for treatment and disposal.

During the construction time period, wastewater production is estimated to be 1,800 litres (1.8m^3) per day.

During the operational phase the daily average wastewater generated is estimated to 35m^3 per week . The wastewater generated during the operational phase will be discharged via the main foul water network to the adjacent wastewater treatment plant.

2.10.2 General Wastes

Construction phase waste may consist of hardcore, concrete, spare steel reinforcement, shuttering timber, plastic, unused oil, diesel, and building materials. This waste will be stored in the construction compound and collected by an approved contractor and disposed or recycled at an approved facility. The containment and disposal of waste oils will be carried out in accordance with the Waste Management (Hazardous Waste) Regulations, 1998.

Domestic type waste generated by contractors will be collected on site, stored in an enclosed skip at the construction compound and disposed of at a licensed landfill facility.

During the operational phase of the quay wall at Ros an Mhíl Fishery Harbour Centre, stringent waste management practices will be implemented in accordance with the Ros an Mhíl Fishery Harbour Centre Port Waste Management Plan. The existing Ros an Mhíl harbour typically generates 2 no. 14 cubic yard skips of waste per week.

Emphasis will be placed on minimising waste generation through effective segregation, recycling initiatives, and responsible disposal methods. Regular audits and monitoring will ensure compliance with environmental regulations and standards, aiming to mitigate any potential impacts on the surrounding marine environment.

Training programs for staff and contractors will further promote awareness and adherence to waste reduction strategies, reinforcing commitment to sustainable practices throughout the operational lifecycle of the quay wall.

2.11 Emissions and Nuisances

The anticipated residues and emissions likely to be generated during the project lifetime are summarised in Table 2-2 below. These environmental effects have been identified, assessed and proposals for management of the anticipated nuisances and/or emissions are presented throughout relevant chapters of this EIAR.

Table 2-2: Emissions and Nuisances

Phase	Aspect	Potential Emission/Nuisance	Assessment Provided
Construction	Air	The main emissions to atmosphere during the construction stage of the project is from fugitive dust associated with the following activities: • Groundworks associated with the construction of the project infrastructure; • Transportation and unloading of crushed stone around the site; • Vehicular movement over material potentially carried off site and deposited on public roads. The movement of machinery, construction vehicles and the use of generators during the construction phase will also generate exhaust fumes containing predominantly carbon dioxide (CO_2), sulphur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter (PM_{10}).	EIAR Vol 2 Chapter 12 Air and Climate
	Noise	Traffic flows, excavation/blasting mechanical machinery and electrical equipment proposed to be used for construction projects will generate noise emissions.	EIAR Vol 2 Chapter 11 Noise
	Water	Surface water runoff and discharges from construction working areas are likely during construction. Pollution sources could arise as a result of soil erosion or from oil/ fuel or chemical storage and use. Proposals for management of water quality and quantity from the proposed project are presented in **EIAR Volume 3: Appendix 2A**: CEMP.	EIAR Vol 2 Chapter 7 Water
	Traffic	The additional traffic, especially heavy goods vehicles associated with the construction phase, has the potential to cause nuisance to those using the local road networks	EIAR Vol 2 Chapter 4 Population and Human Health, Chapter 14 Traffic
Operational	Air	Due to the nature of the project no significant point source or diffuse air emissions will be produced during its operation.	EIAR Vol 2 Chapter 12 Air and Climate
	Noise	The ongoing loading, unloading and maintenance of fishing vessels and equipment at the harbour will generate noise on the site.	EIAR Vol 2 Chapter 11 Noise
	Water	Surface water and wastewater emissions or pollution sources have been identified for the operational phase. These will be appropriately managed by the on-site surface water and foul water drainage systems	EIAR Vol 2 Chapter 7 Water

2.12 Transboundary Effects

The location of the project is entirely in County Galway within the Republic of Ireland. Transboundary impacts relate to potential impacts on other Member States, i.e. outside of the Republic of Ireland.

Considering the nature of the project, the largely localised nature of potential impacts and the distance from any neighbouring member states, it is considered that any potential for impacts on transboundary receptors would not arise.

2.13 Risk of Major Accidents and Disasters

Major accidents include the potential for fire, explosion, traffic collisions, contamination and pollution. Natural disasters include, flooding, tsunamis, lightning strikes, hurricanes or any other extreme natural event.

It is considered that there is no risk for the project to cause major accidents and/or disasters. The vulnerability of the project to potential disasters/accidents, including the risk to the project of both natural disasters and man-made disasters is also considered low.

The risk of major accidents or disasters is assessed in each of the EIAR chapters and particularly in Chapter 7 Water and Chapter 12 Air and Climate Change.

2.13.1 Construction Issues

As in all construction activities, there is a wide range of potential risks of accidents and hazards associated with deep quay construction. While many risks are similar in nature to those for other industries, deep quay construction works take place in exposed windy locations and involve dredging, drilling and blasting, transport of heavy equipment.

All works on site will be carried out in compliance with all relevant legislation and work practices including, to ensure that the construction areas, site environs and public roads remain safe for all users. This legislation includes:

- Safety, Health and Welfare at Work (Construction) Regulations S.I. No. 291/2013 as amended;
- Safety, Health and Welfare at Work Act 2005 as amended;
- Safety, Health and Welfare at Work (General Applications) Regulations 2007 to 2023; and

The Construction and Environmental Management Plan (CEMP), outlines the safety procedures that will be implemented during the construction phase. The effective implementation of the CEMP will help to reduce the risks associated with the construction phase of the Proposed Project.

2.13.2 Project Supervisor Construction Stage

A Project Supervisor Construction Stage (PSCS) will be appointed by DAFM for the construction phase of the deep water quay. The PSCS will be responsible for managing and co-ordinating the safety and health issues on site. The PSCS will develop a suitable Safety and Health Plan for the project, prior to the commencement of construction. The plan will explain how the key safety and health issues will be managed.

The other responsibilities of the PSCS include the following:

- Co-ordinate the implementation of the construction regulations by contractors;
- Organise co-operation between contractors and the provision of information;
- Co-ordinate the reporting of accidents to the Health and Safety Authority;
- Notify the Health and Safety Authority before construction commences;
- Provide information to the site safety representative;

- Co-ordinate the checking of safe working procedures;
- Co-ordinate measures to restrict entry on to the site;
- Co-ordinate the provision and maintenance of welfare facilities;
- Co-ordinate arrangements to ensure that craft, general construction workers, and security workers have a Safety Awareness card, e.g. Safe Pass and a Construction Skills card where required;
- Co-ordinate the appointment of a site safety representative where there are more than 20 persons on site;
- Appoint a safety adviser where there are more than 100 on site;
- Monitor the compliance of contractors and others and take corrective action where necessary; and
- Notify the Authority and the client of non-compliance with any written directions issued.

It is important to note that the presence of a PSCS does not relieve other contractors/employers of their obligation to comply with their statutory safety and health obligations.

2.13.3 Use of Explosives during Blasting

If required, blasting will take place during daylight hours only. The safety of the blasting operations will depend on three factors:

- Competency of personnel – the quality of the blasting personnel is the most important element of safe blasting operations. The appointed Contractor will have comprehensive knowledge and competence in the practice of drilling and blasting;
- Use of proper equipment and materials - explosive products and their accessories such as detonators, initiation devices and blasting machines have evolved into a variety of systems offering flexibility and added safety. The Contractor will use electrical detonators and connectors. All relevant personnel will be familiar with the equipment and will only use for the specific tasks it has been designed for; and
- Correct blasting procedures and methods – the Contractor will follow safe working and communication procedures in relation to all blasting activities.

Explosive materials and detonators will be stored, transported, handled and used in the manner recommended by the manufacturer and in accordance with all statutory requirements or otherwise as advised by the Firearms and Explosives Unit of the Minister for Justice, Home Affairs and Migration and the Garda Síochána. It should be noted that these requirements will be set out in a Method Statement which will be agreed with the DOJE Minister for Justice, Home Affairs and Migration and the Garda Síochána in advance of the commencement of drilling and blasting works.

Only passengers assigned to assist in handling explosives will be allowed on board the jack-up pontoon, during the transport or the presence of explosives. It is only allowed to transport the maximum carrying capacity of a licensed road van. Unloading of explosives will be scheduled during daylight hours only.

Only a Contractor with a valid blaster's certificate will be permitted to conduct or direct a blasting operation, and even then, only if the work involved is within the scope of the valid blaster's certificate. All work within the blasting area will be done under the authorisation of the designated blaster on duty responsible for that area.

The Explosives Day Box will be built and operated as per the requirements of the Minister for Justice, Home Affairs and Migration. It will be a custom built steel lockable explosive day box lined with wood or equivalent. The interior of the explosives day box will be kept scrupulously clean and will be constructed, covered or lined to prevent the exposure of any ferrous metals or explosive residues to avoid production of sparks, self-ignition, fire etc. Any

article or substance likely to cause a fire or explosion will be kept out of and at a safe distance from the stored explosives. There will be a separate box for explosives and detonators. A day consumption quantity will be on board in the barge storage for immediate consumption

Detonators and explosives will be kept in separate rooms in the explosives magazine. Detonators and explosives will never be transported together in one explosives van. At the drilling and blasting barge, detonators will be stored in a detonator box separately from explosives.

It will be necessary to avoid fire and explosion near storage areas of explosives. No excessive amounts of explosives will be available on board the jack-up pontoon. Only a day stock will be on board for immediate consumption. Also measures will be taken to avoid extension of a fire or the start of an explosion non related to the presence of explosives but capable to detonate the stored explosives. Any fire involving detonators / explosives will not be fought.

The safety of the blasting operations will depend on three factors:

- Competency of personnel - the quality of the blasting personnel is the most important element of safe blasting operations. The appointed contractor will have comprehensive knowledge and competence in the practise of drilling and blasting.
- Use of proper equipment and materials - explosive products on their accessories such as detonators, initiation devices, blasting machines have evolved into a variety of systems offering flexibility and added safety. The contractor will use electrical detonators and connectors. All relevant personnel will be familiar with equipment and will only use them for this specific tasks it is being designed for.
- Correct blasting procedures and methods - the contractor will follow safe working and communication procedures in relation to all blasting activities.

Explosive materials and detonations would be stored, transported, handled and used in the manner recommended by the manufacturer and in accordance with all statutory requirements or otherwise as advised by the firearms and explosives unit of the Dept.of Justice, Home Affairs and Migration and the Garda Siochána. It should be noted that these requirements we set out in a method statement which was agreed with the Taoiseach Office of the Junior Executive (TOJE) and the Garda Siochána in advance of the commencement of drilling and blasting works.

Only a contractor with a valid licence certificate will be permitted to conduct or directed blasting operation, and even then only if the work involved is within the scope of the valid blasters certificate post op all work within the blasting area will be done to the authorization of the designated blaster on duty responsible for that area.

2.13.4 Operational Issues

Once the deep water quay is constructed, this will form an extension to the existing Ros an Mhíl Harbour. The quay will make Ros an Mhíl an attractive location for increased fish landings, particularly by larger Irish and foreign vessels of >30mLength Overall (LOA).

The proposed quay itself has been designed to accommodate vessels up to the following size:

- Length Overall (LOA): 118m;
- Beam: 17.5m; and
- Draught: 6.5m.

Vessels carrying demersal species are assumed to discharge 8 tonnes per visit, and vessels carrying pelagic species are assumed to discharge 500 tonnes per visit. As such, it is assumed that there will be 293 demersal vessels and

27 pelagic vessels, a total of 320 vessels. Landings of both species are expected to grow by +10% between 2021 and 2030, and by +3.5% thereafter to 2039 when the quay is expected to reach its operational potential. The pelagic season is generally 26 weeks per year and the demersal season is approximately 44 weeks per year.

Based on the predicted tonnage of fish landed at the deep water quay, the peak number of additional HGVs generated by the proposed development has been calculated. In the opening year (i.e. 2028), there will be 6 HGVs per day transporting fish out of Ros an Mhíl Harbour which is expected to rise to 19 in 2039.

The onshore reclamation area will be surfaced with tar/bitumen. However, this area will in the future have potential to be developed by commercial tenants as open storage areas, warehouses, cold stores, office buildings etc (subject to securing their own necessary planning approvals for same).

The deep water quay will be used by the fishing fleet as a 24-hour operation. Vessels may enter and depart the harbour at any time during the day and night. This usage level is consistent with the present usage at the existing Ros an Mhíl Harbour.

2.13.4.1 Fire/ Fuels

A Marine Emergency Plan has been developed to manage a response to incidents arising from major incidents, such as fires. It details the contingency arrangements to be made in the event of any major incident within the jurisdiction of the Ros an Mhíl FHC Harbour Authority involving vessels either at sea or in port whether berthed or otherwise. Any major incident or developing major incident will be activated by the Harbour Master or a member of the harbour staff, who at the time is acting on behalf of the Harbour Master. The Controller of Operations or the On-Scene Commander where the highest risks arise from fire, toxic materials, and dangerous goods are as follows:

1) Senior Fire Brigade Officer present on shore side situations; or,
2) Designated 'On-Scene Commander' in marine situations.

In a fire, toxic materials, or dangerous goods onboard situation, the ships Master would be designated the" On Scene Commander" pending the arrival on the scene of a senior fire officer. Transfer of the function of the" On Scene Commander" shall be formally made by the Controller of Operation and both parties are to acknowledge and confirm transfer between themselves and confirm to Controller of Operations.

If the major incident is a major oil spill then the Ros an Mhíl Fishery Harbour Centre Oil Spill Contingency Plan is activated, which implements the harbour requirements under the International Convention on Oil Pollution, Preparedness, Response and Co-operation (OPRC). It is of note that Galway Harbour operates a reciprocal sharing arrangement with Ros an Mhíl Harbour and their equipment, subject to their requirements, would be available in an emergency. Such equipment is owned by Galway Harbour and the various oil companies based there. Equipment is available on a user replacement basis and at a nominal hire charge for machinery. The resources can be obtained by contacting Galway Harbour Master who would then activate their emergency call out system.