



PLANNING STAGE ENGINEERING REPORT

Ringaskiddy Port Redevelopment

Client: Port of Cork Company

February 2025

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Appendix 1 – List of Drawings

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
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1. Introduction

The Port of Cork Company (POCC) was granted a 10-year Strategic Infrastructure Development (SID) permission by An Bord Pleanála on 28th May 2015 for the redevelopment of the port at Ringaskiddy (Planning reference PA0035). Much of the work permitted under the permission has been completed and the Ringaskiddy Container Terminal commenced operations in 2022. However, some elements of the permitted project remain to be developed. The planning permission expires on the 20th of October 2025, and it may not be possible to complete all the remaining elements of the permission within the lifetime of the current permission.

As it will not be possible to extend the duration of permission of the SID, POCC intend to apply for a 10-year permission to construct the remaining elements of the permitted development. The remaining redevelopment works include the extension to its deep-water berth at Ringaskiddy West, provision of a second Cork Container Terminal at Ringaskiddy East, provision of the roll-on / roll-off ramp and ancillary works.

Malachy Walsh and Partners have been appointed by Port of Cork Company as Civil, Structural and Electrical Engineers for the proposed port development at Ringaskiddy. This report has been prepared as part of the planning design stage to address the key engineering aspects of the proposed development.

2. Project Overview

2.1 Site Location

The proposed site (sites) is located within the Port of Cork facility in Ringaskiddy, Co. Cork. The site lies within the ownership of the Port of Cork Company Ltd. The ownership boundary line is shown on the site location map and site layout drawings. The proposed development consists of 5 separate sites, all located within the Ringaskiddy Facility. The sites are accessed via the N28 road, which enters the site from the south. The site lies mainly on lands that were previously reclaimed from the sea. The existing lands have been reclaimed for some considerable period of time and will be suitable for development of the types envisaged.

The 5 separate sites are as follows.

- Ringaskiddy West
- Ringaskiddy East – Berth 2
- Ro-Ro Quay and Linkspan, Container Berth
- Dry Storage Area
- Internal Roads and M28 Roads Connection

2.2 Description of the Existing site

2.2.1 Ringaskiddy West

This 11.1ha site, which is shown on drawing 24462-MWP-02-ZZ-DR-C-5002, consists of a reinforced concrete pavement that is mainly used by HGV's accessing the Arkady Bulk Feed Store Facility. Arkady has a wayleave, running roughly North-South through the western side of the site for access to their warehouse. There is a rock armour revetment on the eastern side of the pavement where the landside areas interfaces with the Ringaskiddy Basin from which 0.8ha will be reclaimed for the constructed of the new quay at Ringaskiddy West. The remainder of the site lies within the Ringaskiddy Basin in the area to the south of the ADM Jetty.

2.2.2 Ringaskiddy East – Berth 2

This 2ha site, which is shown on drawing 24462-MWP-02-ZZ-DR-C-5003, lies to the north of the container terminal and quay that was constructed as part of the PA0035 planning application. The site lies on lands which have previously been reclaimed from the sea. The interface between the landward area of the site and the Ringaskiddy Basin is made by way of a rock armour revetment.

2.2.3 Ro-Ro Quay and Linkspan, Container Berth

This 2.7ha site, which is shown on drawing 24462-MWP-02-ZZ-DR-C-5003, lies within the berth pocket for the existing quay at Ringaskiddy East (CCT1). The area for the proposed Ro-ro quay will be reclaimed from the sea.

2.2.4 Dry Storage Area

The 1.6ha site, which is shown in drawing 24462-MWP-02-ZZ-DR-C-5003, lies within the area developed as part of the original PA0035 planning application. The site is currently surfaced with a bituminous pavement.

2.2.5 Internals Road and M28 Road Connection

The 1.5ha site, which is shown in drawing 24462-MWP-02-ZZ-DR-C-5004, lies towards the eastern end of the Port of Cork Facility in Ringaskiddy. The site ties into the existing internal road network that was constructed under the PA0035 planning application. The primary use of the site is for imported car storage. The area is now surfaced with granular fill material suitable for the storage of cars and other materials

2.3 Description of proposed development

2.3.1 Ringaskiddy West

The proposed scheme for Ringaskiddy West is presented on plan drawings 24462-MWP-02-ZZ-DR-C-5011, 24462-MWP-02-ZZ-DR-C-5031 & 24462-MWP-02-ZZ-DR-C-5041 and can be summarised as follows;

- A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure (of approximately 231m) extending no further seaward than the edge of the existing DWB
- Dredging works to varying levels to facilitate navigational access to the new facilities
- Ancillary Works including Lighting and Utilities
- Drainage and other utilities

The new 182m extension to the existing Deepwater Berth (DWB) which will likely comprise a filled quay structure (of approximately 231m) Reclamation Works. Approximately 0.8ha of new land will be created as part of the works. The proposed quay structure will likely comprise a combi-wall form of construction which involves the installation of intermittent tubular steel piles with traditional steel piles infilling between the main piles although other forms of construction such as open piled, or a combination of open piled and closed structures could also be used.

Should a closed quay structure be adopted, most of the material arising from the proposed dredging works will be unsuitable for use in the reclamation works and as such it is anticipated that suitable fill material will need to be imported from local quarried sources. The pavement will be a reinforced concrete pavement that may be supported on large diameter reinforced concrete piles under the footprint of the reclaimed area.

2.3.2 Ringaskiddy East – Berth 2

The proposed scheme for Ringaskiddy East – Berth 2 is presented on plan drawings 24462-MWP-02-ZZ-DR-C-5012, 24462-MWP-02-ZZ-DR-C-5032 & 24462-MWP-02-ZZ-DR-C-5042 and can be summarised as follows;

- Construction of the remaining phases of a 200m Container/Multipurpose Berth which are not completed by 20th October 2025. The berth is under construction and being developed in 4 phases
 1. Combi wall quay wall
 2. Concrete deck piling
 3. Structural slab
 4. Upper slab and yard surfacing
- Dredging of the seabed to a level of -13.0 m Chart Datum (CD)
- Installation of link-span comprising a floating pontoon and access bridge
- Installation of container handling cranes
- Ancillary works including Lighting, Fencing and Utilities

Container Berth 1 wall comprised a concrete deck surface supported on steel/concrete piles. The Berth 2 wall will comprise a combi-wall form of construction which involves the installation of intermittent tubular steel piles with traditional steel piles infilling between the main piles although other forms of construction such as open piled, or a combination of open piled and closed structures could have been used. Some site won fill material will be used for backfilling the combi-wall, however, it is anticipated that additional volumes of imported fill will also be required.

The berthing face to the quay structure will be formed by the installation of a reinforced concrete capping beam which will also be used to support the seaward leg of the main quayside container handling SSG cranes. It is proposed that the quayside pavement between the rails of the container handling SSG cranes will be heavy-duty reinforced concrete pavement. This quayside pavement will be supported on large diameter reinforced concrete piles at regular spacings. It is proposed that the landside pavement will also be a heavy duty reinforced concrete pavement.

2.3.3 Ro-Ro Quay and Linkspan, Container Berth

The proposed scheme for the Ro-ro Quay and Linkspan for the Container Berth and is presented on plan drawings 24462-MWP-02-ZZ-DR-C-5012, 24462-MWP-02-ZZ-DR-C-5032 & 24462-MWP-02-ZZ-DR-C-5042 and can be summarised as follows;

- Installation of link-span comprising a floating pontoon and access bridge.

The Ro-ro quay will likely take the form of the existing jetty that was constructed as part of the PA0035 planning application which comprised a concrete deck surface supported on steel/concrete piles.

2.3.4 Dry Storage Area

The proposed scheme for the Dry Storage Area is presented on plan drawings 24462-MWP-02-ZZ-DR-C-5012, 24462-MWP-02-ZZ-DR-C-5032 & 24462-MWP-02-ZZ-DR-C-5042 and can be summarised as follows;

- Installation of container handling cranes
- Replacement of existing bituminous pavement with heavy-duty reinforced concrete pavement.

2.3.5 Internal Roads and M28 Road Connection

The proposed scheme for the Internal Roads and M28 Road Connection is presented on plan drawings 24462-MWP-02-ZZ-DR-C-5013, 24462-MWP-02-ZZ-DR-C-5033 & 24462-MWP-02-ZZ-DR-C-5043 and can be summarised as follows;

- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28
- Ancillary works, including lighting, fencing

2.4 Existing Planning Permission

A Planning Approval was previously granted for this same Project by An Bord Pleanála in 2015 under reference PA0035, amended via references PM0010, ABP-304-437-19 and ABP-310847-21. A ten-year permission was granted. A large portion of the permitted works have been completed and are now operational. There is no provision in legislation that provides for an extension of duration of the original permission. Accordingly, this

application is seeking permission for the elements of the work previously permitted but which are yet to be completed.

3. Site Services

3.1 Stormwater

3.1.1 General

3.1.1.1 Storm Durations

Storms with a duration of 15 minutes to 1440 minutes will be used when modelling the network. This allows for a 24-hr rainfall pattern to be modelled against a 50 hr tidal pattern. The tidal surge conditions extend to twice the length of the longest storm duration simulated as is considered best practice.

3.1.1.2 Tidal Levels

The site is located in Cork Harbour which is subject to tidal fluctuations/patters, and these have been examined to assess their impact on the proposed stormwater network. The tide levels are presented in Table 3-1.

Tidal Plane	Tidal Level (m ODM)	Level (m CD)
Highest Astronomical Tide (HAT)	+2.130	+4.700
Mean High Water Springs (MHWS)	+1.630	+4.200
Mean High Water Neap (MHWN)	+0.730	+3.300
Mean Sea Level (MSL)	-0.370	+2.200
Mean Low Water Neap (MLWN)	-1.170	+1.400
Mean Low Water Springs (MLWS)	-2.070	+0.500
Lowest Astronomical Tide (LAT)	-2.570	0.000

Table 3-1 - Tide Levels at Ringaskiddy

3.1.1.3 Climate Change

A climate change increase of 20% in rainfall intensities will be incorporated into the network design.

3.1.1.4 Joint Probabilities, Annual Exceedance & Summary

The ultimate outfalls from the site will be subject to tidal fluctuations, therefore high tide levels will be simulated in conjunction with design rainfall events and joint probabilities will be considered in the analysis. The design events and joint probabilities will be considered in the network design. It is intended that the 50% AEP tidal level at the site will be estimated based on the difference between the 0.5% and 50% AEP flood levels outlined in the Irish Coastal Protection Strategy Study.

3.1.2 Ringaskiddy West

There are currently two existing outfalls that pass through the existing revetment located on the footprint of the proposed quay at Ringaskiddy West. These outfalls will be extended out through the proposed quay wall. The

existing surface water system will be subject to a full CCTV and GPS survey to verify the existing arrangement, condition and invert levels.

An additional outfall will be required to accommodate the increased impermeable area as a result of this development, which will pass through a class 1 oil separator unit prior to outfalling. The unit will be of sufficient size to cater for the full catchment area. Surface water entry points will be predominantly linear drainage channels, with some isolated gullies where required. Roof runoff will also be catered for in the design.

3.1.3 Ringaskiddy East – Berth 2

There are currently two existing outfalls that pass through the existing revetment located on the footprint of the proposed quay at Ringaskiddy East. The outfalls are 525mm and 900mm in diameter respectively. These outfalls have class 1 oil separators upstream of the outfall location as part of the works completed under the original PA0035 planning application. The 900mm outfall will be extended out through the quay wall of the proposed new quay.

The 525mm outfall will be intercepted and upsized to a 750mm pipe in order to accommodate the additional impermeable area brought about by the new quay. Surface water entry points on the new quay pavement will be linear drainage channels. Prior to tying in with the existing 525mm outfall, all drainage will pass through a class 1 oil separator. Flap Valves will be placed on the outfall to prevent surcharging of the stormwater network during high tides.

3.1.4 Ro-Ro Quay and Linkspan, Container Berth

Drainage for the Ro-Ro quay will be tied into the existing drainage network constructed as part of the PA0035 planning application. The drainage network has adequate capacity to accommodate the additional impermeable area from the construction of the new Ro-Ro Quay. Drainage will tie in upstream of the existing class 1 oil separator.

3.1.5 Dry Storage Area

The footprint of the existing dry storage area has a full stormwater system as part of the works completed under the original PA0035 planning application. The western extent of the dry storage area has a series of 450mm drainage pipes that outfall to the south of the existing container berth. The Eastern extent of the storage area has a series 600mm, 675mm and 750mm pipes that run along the eastern side of the existing container stacking area before outfalling through the existing revetment along to the north of the existing container pavement that was constructed under the PA0035 planning application. Both existing outfalls pass through class 1 oil separators.

The proposed works will not adjust the impermeable area feeding both outfalls, as such it is not proposed to change the drainage design for this area. The existing surface entry point consists mainly of gullies, and these will be maintained where possible. Any new surface entry points required will be tied into the existing runs as required.

3.1.6 Internal Road and M28 Road Connection

The existing site consists of a gravel pavement without any drainage network in place. Road drainage will be required for the entirety of the road network. As noted on drawing 24462-MWP-02-ZZ-DR-S-5043, a standalone drainage system with a new outfall will be required to cater for the additional impermeable area brought about by the construction of the internal roads. The outfall position will be as per the consented position for the PA0035

planning application. Surface water entry systems will be by way of combined drainage kerbs and gullies. All drainage will pass through a class 1 oil separator before outfalling.

3.2 Water Supply

3.2.1 Ringaskiddy West

Water supply is required for the fire hydrants along the quayside and to supply berth vessels with potable water. An existing 300mm watermain runs along the quay face of the existing quay at Ringaskiddy West. This will be extended along the entirety of the proposed quay extension.

3.2.2 Ringaskiddy East – Berth 2

Water Supply is required for fire hydrants along the quayside and to supply berthed vessels with potable water. The site is fed by an existing 280mm watermain that runs along the length the existing container berth and is valved and capped at the southern western corner to allow for future expansion.

3.2.3 Ro-Ro Quay and Linkspan, Container Berth

Water supply can be accommodated by the existing infrastructure constructed as part of the works completed for the PA0035 planning application

3.2.4 Dry Storage Area

The site is already supplied with fire hydrants to the north and south of the site as part of the works completed for the PA0035 planning application. Hydrants are fed by 125mm watermain pipes. No alterations to the existing network are anticipated as part of the works.

3.2.5 Internal Roads and M28 Road Connection

Water supply is not required.

3.3 Electrical Works

Ringaskiddy East, the Ro-Ro quay and the dry storage facility will take their electrical feed from the Ring Main Unit (RMU) that was constructed as part of the works for the PA0035 application.

Electricity will need to be supplied to the new quay at Ringaskiddy West to facilitate the installation of high-mast lighting, quay face lighting, petrol interceptors and quayside power chambers. Electrical connections for the new quay will be made at the interface between the existing quay and the new quay. There is a service trench running along the existing quay that can be tied into to provide electricity for the new quay extension.

Electricity will also need to be supplied for the 10m lights and petrol interceptors as shown on drawings 24462-MWP-02-ZZ-DR-S-5033 and 24462-MWP-02-ZZ-DR-S-5043 respectively. A connection will be made to tie into the existing ducts which are supplying the lights and interceptors for the section of the internal roads already constructed as part of the works for the PA0035 application.

3.4 Boundary Security

The proposed developments are within ISPS (International Ship and Port Facility Security Code) zones. The new fence shall be a 2.4 m high-security mesh fence. Existing fencing has been constructed along the boundary of the existing container terminal, this will need to be removed and extended to accommodate the construction of Ringaskiddy East – Berth 2.

3.5 Lighting

3.5.1 Ringaskiddy West

As noted on drawing 24462-MWP-02-ZZ-DR-S-5031 lighting will be provided by way of three new 28m HML's. HML's will be positioned so as to provide 50Lux illuminance levels along the quay and 30-60lux in general terminal/circulation areas. The lighting will be modern LED technology, energy-efficient lighting suitable for high mast marine environments. The light fittings include high directional features limiting glare, overspill and light pollution.

3.5.2 Ringaskiddy East – Berth 2

As noted on drawing 24462-MWP-02-ZZ-DR-S-5032 lighting will be provided by way of one new 28m HML and two modified HML's. Lighting design has been completed to provide average illuminance levels of 50Lux along the quay and 30-60Lux in general terminal/circulation areas. The lighting will be modern LED technology, energy-efficient lighting suitable for high mast marine environments. The light fittings include high directional features limiting glare, overspill and light pollution.

3.5.3 Ro-Ro Quay and Linkspan, Container Berth

There will be no amendment to the existing lighting or additional lighting installed to accommodate the new Ro-Ro quay.

3.5.4 Dry Storage Area

There will be no modification to the existing HML arrangement for the Dry Storage Area. The HML's constructed as part of the PA0035 planning application will illuminate the area to provide 30-60Lux.

3.5.5 Internal Roads and M28 Road Connection

As noted on drawing 24462-MWP-02-ZZ-DR-S-5033 the Internal Roads and M28 Road Connection will be illuminated via 10m high Lighting columns placed at regular intervals. The road lighting has been designed to meet the requirements of BS EN 13201: 2015 lighting class ME3b to provide average maintained luminance on road of 1.0cd/m^2 , with a minimum of 40% overall uniformity and 60% longitudinal uniformity. Roundabout and Junction Lighting has been designed to meet the requirements of BS EN 13201: 2003-1 lighting class CE2 to provide minimum maintained of 20Lux and a minimum of 40% overall uniformity

4. Flood Risk Assessment

Flood Risk has been addressed in Chapter 14 of the EIAR Volume 2. The scheme has been designed for the 1% AEP present day flood event and on this basis, it has been concluded that the proposed redevelopment will not have any impact on the flood risk and is therefore compliant with the Planning System and Flood Risk Management Planning Guidelines (2009).

5. Traffic

Traffic has been addressed in Chapter 08 of the EIAR Volume 2. This section of the EIAR concludes that the impact of construction traffic generated by the redevelopment of Port of Cork is anticipated to be negligible. The busy and congested nature of the N28 and N40 roads, the impact of a maximum of 25 HGVs per day and 25 additional vehicles due to construction workers would have little to no impact on traffic.

The EIAR also concludes that traffic impacts during operation are not anticipated given the vast majority of berth operations are now in place and this application relates to an expansion of space, rather than an intensification of development. Therefore, there is significant spare road capacity to cater for the development traffic levels along the N28.

The connection to the proposed M28 and permissions for the same falls under the jurisdiction of TII. As such, the design for the junction is not within the scope of the planning application being submitted.

Appendix 1

List of Drawings

Drawing Number	Drawing Title
24462-MWP-02-ZZ-DR-C-5000	PROPOSED SITE LOCATION MAP
24462-MWP-02-ZZ-DR-C-5001	EXISTING SITE LAYOUT PLAN
24462-MWP-02-ZZ-DR-C-5002	EXISTING SITE LAYOUT PLAN - SHEET 1
24462-MWP-02-ZZ-DR-C-5003	EXISTING SITE LAYOUT PLAN - SHEET 2
24462-MWP-02-ZZ-DR-C-5004	EXISTING SITE LAYOUT PLAN - SHEET 3
24462-MWP-02-ZZ-DR-C-5005	BATHYMETRIC INFORMATION AT RINGASKIDDY EAST
24462-MWP-02-ZZ-DR-C-5006	BATHYMETRIC INFORMATION AT RINGASKIDDY WEST
24462-MWP-02-ZZ-DR-C-5010	PROPOSED GENERAL ARRANGEMENT KEY PLAN
24462-MWP-02-ZZ-DR-C-5011	PROPOSED GENERAL ARRANGEMENT SHEET 1
24462-MWP-02-ZZ-DR-C-5012	PROPOSED GENERAL ARRANGEMENT SHEET 2
24462-MWP-02-ZZ-DR-C-5013	PROPOSED GENERAL ARRANGEMENT SHEET 3
24462-MWP-02-ZZ-DR-C-5020	PROPOSED SURFACING LAYOUT
24462-MWP-02-ZZ-DR-C-5021	PROPOSED SITE PHASING
24462-MWP-02-ZZ-DR-C-5030	PROPOSED LIGHTING LAYOUT KEY PLAN
24462-MWP-02-ZZ-DR-C-5031	PROPOSED LIGHTING LAYOUT SHEET 1
24462-MWP-02-ZZ-DR-C-5032	PROPOSED LIGHTING LAYOUT SHEET 2
24462-MWP-02-ZZ-DR-C-5033	PROPOSED LIGHTING LAYOUT SHEET 3
24462-MWP-02-ZZ-DR-C-5040	PROPOSED SITE SERVICES PLAN
24462-MWP-02-ZZ-DR-C-5041	PROPOSED SITE SERVICES PLAN - SHEET 1
24462-MWP-02-ZZ-DR-C-5042	PROPOSED SITE SERVICES PLAN - SHEET 2
24462-MWP-02-ZZ-DR-C-5043	PROPOSED SITE SERVICES PLAN - SHEET 3
24462-MWP-02-ZZ-DR-C-5050	DESIGNATED SITES
24462-MWP-02-ZZ-DR-C-5200	SITE SECTION LOCATIONS
24462-MWP-02-ZZ-DR-C-5201	SITE SECTIONS - SHEET 1
24462-MWP-02-ZZ-DR-C-5202	SITE SECTIONS - SHEET 1
24462-MWP-02-ZZ-DR-C-5203	SITE SECTIONS - SHEET 1
24462-MWP-02-ZZ-DR-C-5401	TYPICAL SERVICE DETAIL SHEET 1
24462-MWP-02-ZZ-DR-C-5402	TYPICAL SERVICE DETAIL SHEET 2
24462-MWP-02-ZZ-DR-C-5403	TYPICAL SERVICE DETAIL SHEET 3
24462-MWP-02-ZZ-DR-C-5301	SITE ELEVATIONS - RINGASKIDDY WEST-SHEET 1
24462-MWP-02-ZZ-DR-C-5302	SITE ELEVATIONS - RINGASKIDDY WEST-SHEET 2
24462-MWP-02-ZZ-DR-C-5311	SITE ELEVATIONS - RINGASKIDDY EAST-SHEET 1
24462-MWP-02-ZZ-DR-C-5312	SITE ELEVATIONS - RINGASKIDDY EAST-SHEET 1

