

## **3 PROJECT DESCRIPTION FOR PROPOSED ALTERATIONS**

### **3.1 Introduction**

This Chapter of the EIS describes the works and operational changes that are the subject of the proposed alterations. The description sets out the proposed alterations in the context of the permitted development and seeks to clarify where changes are proposed and where works remain unchanged from those covered by the extant permission.

The description is supported by reference to various figures included in Volume II of the EIS. Reference is also made to the drawings which accompany the submission made in response to An Bord Pleanála's request dated 28<sup>th</sup> October 2016.

### **3.2 Context of Proposed Alterations**

The permitted development comprised the following works:-

#### **Ringaskiddy East (Container Berths and Multi-purpose Berth (CB/MPB))**

- A new 314m Container Berth 1/ Multipurpose Berth that will be capable of accommodating vessels carrying a range of different cargoes including containers, freight and general cargoes
- An additional 200m Container Berth 2
- Surfacing of existing port lands to provide operational areas
- Dredging of the seabed to a level of -13.0 m Chart Datum (CD)
- Demolition of existing link-span
- Installation of link-span comprising a floating pontoon and access bridge
- Installation of container handling cranes and terminal transport equipment
- Maintenance building, administrative buildings and entrance kiosks
- Ancillary car parking, lighting and fencing

#### **Ringaskiddy West (Deepwater Berth Extension)**

- A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure extending no further seaward than the edge of the existing DWB
- Dredging works to varying levels to facilitate navigational access to the new facilities
- Lighting

#### **Road Improvements**

- Improvements to the external road entrance into the Ringaskiddy Deepwater Terminal and to Ringaskiddy West
- Improvements to the internal link road between Ringaskiddy East and Ringaskiddy West
- Road improvement works within the existing harbour lands at Ringaskiddy East
- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28
- Lighting and fencing

#### **Paddy's Point Amenity Area**

- Construction of a new public pier, slipway and boarding platform
- New planting and landscaping to provide public amenity area
- Boat storage, lighting and fencing

The proposed alterations to the permitted development are required to enable the Port development to be sustainable by meeting trade demands, port operational requirements and funding capability. In this context detailed design including port operation simulations, funding capability and the extant permission and conditions have informed the requested alterations.

The requested alterations seek to change:

- The landside container handling
- The main berth and mooring dolphins
- The entrance and interchange area.
- Maintenance, office and customs building

The proposed alterations do not change the volume of trade or traffic levels set out in the original EIS for the permitted development

The proposed alterations are relatively minor in nature in the context of the permitted development. The alterations are limited to Ringaskiddy East. There are no changes proposed to the works at Ringaskiddy West, the external Road Junction/internal roads and Paddy's Point.

The requested alterations are described more fully in the following sections and are summarised in Table 3-01.

**Table 3.01 – Extent of Alterations**

<p><b>Landside Container Handling (refer to section 3.5)</b></p> <ul style="list-style-type: none"> <li>• A change in the landside container handling system from the permitted Rubber Tyred Gantry (RTG) with truck / trailers to a Straddle Carrier (SC) operation.</li> <li>• Internal container stacking arrangement and height amended to suit new container handling system. Containers are stacked 3 high over the majority of the site.</li> <li>• The lower stack height requires an increased footprint</li> <li>• Change in position of lighting columns</li> <li>• Use of part of the permitted general cargo storage area for storage of the increased container footprint.</li> <li>• Change in the extent of the container yard (increase of 5% in terminal area).</li> <li>• Overall increase in development footprint of 7%</li> </ul>
<p><b>Main Berth and Mooring Dolphins (refer to Section 3.6)</b></p> <ul style="list-style-type: none"> <li>• Minor alterations to the geometry of the southern end of the main berth 1.</li> <li>• 5.6% increase in number of piles as a result of phased construction.</li> <li>• Dredge pocket extended approximately 46m southwards to accommodate berthing along the full length of the main berth</li> <li>• 15,000m<sup>3</sup> additional volume of dredging (4% increase in overall dredge volume) / 3750 m<sup>2</sup> additional dredge area (4 % increase in overall dredge area)</li> <li>• Removal of two existing mooring dolphins</li> <li>• Construction of three replacement mooring dolphins</li> </ul>
<p><b>Entrance and Interchange Area (refer to Section 3.8)</b></p> <ul style="list-style-type: none"> <li>• Entrance and exit areas moved and realigned to facilitate improved circulation and separation at the interchange area</li> <li>• Provision of additional queuing capacity</li> </ul>
<p><b>Maintenance, Office and Customs Buildings (refer to Section 3.7)</b></p> <ul style="list-style-type: none"> <li>• New Maintenance Workshop building provided within a dedicated area to the south of the existing Ferry Terminal access road</li> <li>• Single storey building previously proposed as a maintenance building is relocated to the South of the terminal site</li> <li>• Change of use of previously proposed maintenance building to a customs inspection building</li> <li>• Number of entrance/exit kiosks reduced</li> <li>• Provision of separate refrigerated container (reefer) gantry structures</li> </ul>

### 3.3 Permitted Work Currently Completed

Elements of the permitted development have been constructed to comply with the extant permission, conditions and schedule of environmental commitments, in advance of the main works and to meet environmental constraints.

Works carried out comprise the following and are illustrated in Figure 3.01:-

- Removal of existing linkspan
- Filling and rock armour revetment construction on the link road between the Deepwater Berth and the Ferry Terminal
- Erection of a visual barrier between the link road and existing dolphins
- Erection of a visual and noise barrier between the port area and Ringaskiddy village extending from the entrance to the DWB to the ferry terminal entrance from the N28
- Site clearance and vegetation removal at Ringaskiddy East

Elements of the detailed design are also in the process of being agreed with the planning authority in accordance with the following conditions of the extant permission.

Condition 6 - Prior to commencement of development, final detailed design for the new port entrance, at the junction of the regional road R613 with the N28, shall be submitted to and agreed in writing with the planning authority. This shall include the details of pedestrian facilities.

Condition 15 - Prior to commencement of development, a comprehensive landscaping plan for the entire site shall be submitted to and agreed with the planning authority. Such plan shall particularly provide for additional landscaping along the northern site boundary of Ringaskiddy East.

### 3.4 Proposed phasing of development from commencement up to full implementation of the entire project

The permitted development provides that various elements of the infrastructure proposed may be implemented in a single construction or alternatively they may be implemented in a number of phases as a result of trade demands, Port operational requirements and funding.

#### 3.4.1 Permitted Development

Phasing for the permitted development as presented in the original EIS is as follows:-

**Phase 1 – Ringaskiddy East** comprising;

- (a) Improvements to existing port entrance adjacent to existing DWB entrance
- (b) Pier, slipway and amenity area at Paddy's Point
- (c) Elements of internal road improvements to facilitate access to Ringaskiddy East
- (d) Construction of the CB/MPB and associated container storage and handling areas
- (e) Additional Internal Roads to facilitate connection to new N28, when constructed, at eastern end of port complex / Ringaskiddy Village

**Phase 2 – Ringaskiddy West** comprising the extension to the existing DWB

**Phase 3 – Ringaskiddy East comprising additional quay wall and floating linkspan** to accommodate Ro-Ro traffic at the CB/MPB. This facility will not be brought into commission for accompanied Ro-Ro freight traffic until the new N28 is in place and operational.

### **3.4.2 Proposed Alterations**

The proposed phasing is illustrated in Figures 3.02a and 3.02b.

Phasing for the proposed alterations will largely be in accordance with the permitted development except that Phase 1 will now be implemented in two separate stages as set out below. Phases 2 and 3 remain unchanged

This phasing is further described in Sections 3.5 –Landside Container Handling and 3.6 – Main berth and mooring dolphins.

#### **Phase 1a – Initial Stage of Development at Ringaskiddy East to accommodate movement of container activities from Tivoli, comprising:-**

- (a) Improvements to existing port entrance adjacent to existing DWB entrance
- (b) Pier, slipway and amenity area at Paddy's Point
- (c) Elements of internal road improvements to facilitate access to Ringaskiddy East
- (d) Construction of an optimised single berth, and associated mooring dolphins for the accommodation of ships handling containers and general cargoes.
- (e) Container handling area to be operated using ship to shore cranes and straddle carriers to accommodate a throughput of up to 240,000 Twenty-foot Equivalent Units, (TEU)

#### **Phase 1b – Further Phase of Development at Ringaskiddy East which will be implemented when trade volumes require the provision of additional quay space and associated container storage, comprising:-**

- (a) Construction of permitted second berth for the accommodation of container ships.
- (b) Further container storage and handling area to be provided within the permitted cargo storage area using Rail Mounted Gantry Cranes to accommodate throughput up to the permitted 330,000 TEU
- (e) Permitted Internal Roads to facilitate connection to new N28, when constructed, at eastern end of port complex / Ringaskiddy Village.

**Phase 2 – Ringaskiddy West** - unchanged from the permitted development

**Phase 3 – Ringaskiddy East** - unchanged from the permitted development

Changes to the phasing are relatively minor in the overall context of both the construction and operational stages of the permitted development and the overall timeline is unchanged.

### **3.5 Landside Container Handling**

This section sets out the proposed alterations to the landside container handling operation of the permitted development. The proposed changes include elements of phased implementation of operations (Phases 1a and 1b) as described in section 3.4.2.

The permitted development included for three main modes of trade;

Lift on Lift off (LoLo) – involving the loading/unloading of containers from vessels and temporary storage on the site before onward transport by road.

Roll on Roll Off (RoRo) – involving the embarkation/disembarkation and temporary on terminal parking of freight HGV traffic

General Cargo – involving the loading/unloading and temporary on terminal storage of general break bulk and project cargoes.

All of these three modes of trade continue to be accommodated within the proposed alterations. Proposed amendments to the accommodation of these trades as a result of the alterations are set out in the following sub-sections.

There is no change in the volume of trade proposed to be accommodated from that permitted. Changes are limited to the method of handling and storage of containers within the port.

### 3.5.1 Lift on Lift off (Lo-Lo) Container Handling system

#### 3.5.1.1 Permitted Development

Lo-Lo operations for the permitted development were to comprise the loading and unloading of containers from vessels with temporary storage on the site before onward transport by road. Ship to Shore Gantry (SSG) cranes would be used to lift the containers from vessels berthing alongside the new quays. The cranes would then place the containers onto truck/trailer units which would transport the containers to the onsite container stacks. Electrically operated Rubber Tyred Gantry (RTG) cranes would then be used for the handling of containers in the main stacks. These cranes would lift the containers into the stack and at a later time facilitate onward transport of the containers by transferring to road going Heavy Goods Vehicles (HGVs). In an export cycle the above mentioned process is reversed.

The permitted development included 6 nr container storage stacks where containers would be stored in blocks 7 wide and 5 high (12.95 m in height). Each main stack included a gantry at one end where refrigerated containers, otherwise known as reefers, would be stored with connections to electrical power. Hazardous container storage facilities would be accommodated within the main stacks. A separate storage area would be provided for the accommodation of empty containers which would be handled by reach stackers. The terminal layout is illustrated in Figure 3.03 of this EIS.

A typical RTG is illustrated in Figure 3.04. The RTG will be approximately 23 m in height.



Figure 3.04 - Typical Rubber Tyred Gantry Crane

### **3.5.1.2 Proposed Alterations**

There is no change proposed in ship to shore operations by the use of SSGs.

The permitted Rubber Tyre Gantry Cranes (RTG's) and associated truck/trailers will be replaced with a handling system that will be implemented in a phased manner to match throughput demand. The handling system will comprise both Straddle Carriers and Rail Mounted Gantry (RMG) operations.

The final terminal layout is illustrated in Figure 3.05.

#### Straddle Carrier (SC) Operations

In a typical import cycle Ship to Shore Gantry Crane (SSG) cranes would be used to lift the containers from vessels berthing alongside the quay. The cranes then place the containers onto the quayside where they are lifted by the straddle carriers and deposited in the container stacks. Subsequently the container is lifted from the stack by a straddle carrier and transferred to the terminal interchange area where the container is placed on a HGV for onward transportation by road. In an export cycle the above mentioned process is reversed. The straddle carrier in effect undertakes the duty of two elements of equipment from the permitted development (RTG and truck/trailer unit).

Straddle carriers will be approximately 16 m in height. A total of 15 straddle carriers will be in use comprising equipment relocated from Tivoli Container Terminal (5 units, diesel hydraulic) and newly purchased equipment (10 units, diesel electric). A typical straddle carrier is illustrated in Figure 3.06.



**Figure 3-06 - Typical Straddle Carrier**

The container storage area for straddle carrier operations will be located at the northern side of the terminal and containers in this area will be stacked up to 3 high (7.8 m in height).

A separate area of refrigerated container (reefer) storage will be provided to the south of the straddle carrier container storage area. Reefer containers will be handled by straddle carriers and will be stacked 4 high (10.4 m in height). Steel gantry structures (8.6 m in height) will be constructed to provide personnel access.

Straddle Carrier operations will provide capacity for a throughput of 240,000 TEU.

### Rail Mounted Gantry (RMG) Operations

In a typical RMG operation import cycle the SSGs would continue to be used to lift the containers from vessels berthing alongside the quay. The cranes will then place the containers onto the quayside where they are lifted by the straddle carriers, transported to the RMG interchange area and placed on the ground. The container is then lifted by the RMG and placed in the stack. Subsequently the container is lifted from the stack by the RMG and placed on a HGV in the interchange area for onward transportation by road. In an export cycle the above mentioned process is reversed.

Two RMG stacks will be constructed in the area previously allocated to multi-purpose cargo. These will be similar in scale and form of construction to the RTG stacks proposed in the permitted development. Containers will be stacked 7 wide and 5 high (12.95 m in height) in this area with a vehicle lane also being provided in the area beneath the RMG. A typical RMG is illustrated in Figure 3.07. RMGs will be of a similar scale to the permitted RTGs and will be approximately 23 m in height.



**Figure 3.07 - Typical Rail Mounted Gantry Crane**

### Phasing of Container Handling in the Operational Stage

The implementation of container handling systems in the operational stage of the development will be carried out in a phased manner.

#### *Phase 1a*

The initial stage of development (Phase 1a) will comprise the Straddle Carrier (SC) operation only. This will include the provision of the separate reefer stack (4 high). This system will provide capacity for a throughput of 240,000 TEU.

In Phase 1a, two SSG cranes will operate from the single Berth 1.

The Phase 1a operational layout is illustrated in Figure 3.08.

#### *Phase 1b*

In the second phase (1b) the two Rail Mounted Gantry Cranes (RMGs) will be provided to supplement the straddle carrier operation. This will increase the throughput capacity to 330,000 TEU.

The phase 1b operational layout is illustrated in Figure 3.05

### 3.5.1.3 Comparison of Container Handling Equipment for Permitted Development and Proposed Alterations

A comparison of the types of container handling equipment and associated numbers to be used is illustrated in Table 3.02 and Figure 3.09.

**Table 3.02 – Comparison of container handling equipment**

	<b>Permitted Development</b>	<b>Proposed Alterations</b>
Ship to Shore Gantry Crane	2 nr	2 nr
Harbour Mobile Crane	1 nr	1 nr
Rubber Tyred Gantry Crane	6 nr	
Rail Mounted Gantry Crane	-	2 nr
Straddle Carrier	-	15 nr
Reach Stacker	2 nr	-
Tractor/ Trailer (Heavy Goods Vehicle)	12 nr	-
<b>TOTAL</b>	<b>23 nr</b>	<b>20 nr</b>

## 3.5.2 General Cargo Operations

### 3.5.2.1 Permitted Development

In the permitted development an area of the terminal was to be used to accommodate general break bulk and project cargoes. Generally the maximum height of stored materials was to be approximately 5.5m. Cargo would have been lifted from vessels using a harbour mobile crane or SSG and would either be placed directly into the storage area or on the quayside for onward movement and stacking by internal port equipment, such as reach stackers.

### 3.5.2.2 Proposed Alterations

The proposed alterations do not include any proposed change to the method of handling and storing general cargo. The area available for set down of such cargo is reduced in the initial Phase 1a of development. When the proposed RMGs are installed in Phase 1b there will be no accommodation of general cargo. This cargo will then be accommodated on port lands to the east of the container terminal and adjacent to the current RoRo freight terminal as per current practice.

## 3.5.3 Roll on Roll off (RoRo) Operations

### 3.5.3.1 Permitted Development

The permitted development included the provision of a RoRo ramp that would be used to allow direct access by freight HGV traffic to/from vessels with suitable vehicle loading ramps. Freight traffic would comprise;

**Unaccompanied** - in this mode the freight trailers are transported on and off the vessel by dedicated port transport tractor units. The trailers are then stored in the southern portion of the terminal area where they are subsequently collected by road going HGVs.

**Accompanied** – in this mode each trailer on the vessel is accompanied by a driver. On disembarkation these vehicles, once processed by the vehicle management system, will drive directly onto the public road network without being temporarily stored in the port area. During embarkation such vehicles will marshal at the port shortly before the vessel is due to depart.



### 3.5.3.2 Proposed Alterations

The proposed alterations make provision for the introduction of a RoRo ramp in the latter stages of the development. In accordance with Condition 4 of the extant permission this will not be made operational until such times as the N28 and Dunkettle road upgrade schemes are completed.

### 3.5.4 Operational Area

The proposed alterations as described in the preceding sections result in an amendment to the extent of;

- the terminal area,
- container storage areas within the overall port operational area
- the extent and location of buildings and ancillary areas.

A comparison of the operational area uses for the permitted development and proposed alterations (including phasing) is provided in Table 3.03.

**Table 3.03 – Comparison of Terminal Operational Areas**

	<b>Permitted Development</b>	<b>Proposed Alterations</b>	
		<b>Phase 1a</b>	<b>Phase 1b</b>
	<b>(ha)</b>	<b>(ha)</b>	<b>(ha)</b>
<b>RTG stacking incl reefers (5 high)</b>	3.86	-	-
<b>Straddle Carrier stacking (3 high)</b>	-	4.68	4.93
<b>Reefer stacking (4 high)</b>	-	0.73	0.73
<b>RMG stacking incl reefers (5 high)</b>	-	-	1.67
<b>Multipurpose Storage Area</b>	4.34	2.91	-
<b>Entrance/Exit, Interchange and Trafficked Areas</b>	4.22	5.97	7.29
<b>Buildings, parking and ancillary areas</b>	0.92	1.28	1.28
<b>Quay Working Area</b>	2.24	1.49	2.23
<b>Total Area</b>	<b>15.58</b>	<b>17.06</b>	<b>18.13</b>

The extent of changes to the port operational area as a result of the proposed alterations is illustrated in Figure 3.10

### 3.5.5 Site Lighting

The proposed amendments to the operational arrangement within the terminal area necessitate the reconfiguration of the permitted terminal high mast lighting. Figure 3.11 illustrates the locations of the high mast lighting as per the permitted development and as per the proposed alterations (shown in the context of the altered internal operational layout). The site lux levels from the proposed alterations to the high mast lighting locations is illustrated in Figure 3.12.

### 3.5.6 Operational Throughput

Although alterations are proposed to the method of internal handling of containers there will be no change to the throughput of the terminal in respect of LoLo, RoRo and general cargo traffic. There is therefore no change in the volume of traffic entering and exiting the terminal from that for the permitted development.

### 3.6 Main Berth and Mooring Dolphins

This section sets out the physical aspects of the proposed alterations to the currently permitted development. Implementation of infrastructure is proposed on a phased basis as described in detail in Section 3.4.

#### 3.6.1 Main Quayside Works

##### 3.6.1.1 Permitted Development

The permitted development included a new 314m Container Berth 1/ Multipurpose Berth and a second additional 200m Container Berth 2. Provision was made at the southern end of the Berth 1/ Multipurpose Berth for the accommodation of a Roll-on Roll-off (Ro-Ro) linkspan bridge with the construction of an associated quay wall outstand. The general layout of the quay structures for the permitted development is illustrated in Figure 3.13.

The method of construction of the permitted quayside works is not specified in detail in the permission granted by An Bord Pleanála. It is anticipated that the berthing facilities will comprise a concrete deck surface supported on steel/concrete piles and the new quay wall will comprise a vertical steel wall tied to a sheet piled anchor wall. The main wall 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 be used.

##### 3.6.1.2 Proposed Alterations

The alterations to the quay comprise a minor modification to the shape of the southern end of berth 1. This is intended to facilitate a phased implementation of the RoRo linkspan (see section 3.6.1.3) and to maximise mooring of vessels in the interim. The southern end of the quay structure is extended by 6.6m along the line of the main berth but the landward edge is reduced in length by 5.2m as illustrated in Figure 3.15. The reconfiguration of the shape of the quay end wall does not result in quay piling and construction activity being any closer to Ringaskiddy village than in the permitted development. Berth 2 is unchanged.

The general arrangement of the quay is illustrated in Figure 3.14.

The proposed alteration will result in a 5.6% increase in the number of tubular steel piles installed in the quay wall construction.

A comparison of the proposed quay wall layout with that for the permitted development is illustrated in Figure 3.15.

##### 3.6.1.3 Phasing of Quay Wall Construction

It is proposed that the quay infrastructure will be constructed in three phases. Phasing is illustrated in Figures 3.02a and 3.02b and further described below.

###### Phase 1a

In Phase 1a, Berth 1 will be constructed without the outstand which accommodates the RoRo linkspan.

Condition 4 of the extant permission specifies that the permitted link-span bridge and berth shall not become operational until such time as the N28 and Dunkettle road upgrade schemes are completed. Phase 1a therefore does not include construction of the link span bridge and associated quay outstand structure. This will be deferred until phase 3 when the N28 and Dunkettle road upgrade schemes have been completed.

The Phase 1a quay arrangement is illustrated in Figure 3.16.

### Phase 1b

In Phase 1b, Berth 2 will be constructed to the North of Berth 1 as permitted.

The Phase 1b quay arrangement is illustrated in Figure 3.16.

### Phase 3

In Phase 3 the quay outstand structure for the RoRo ramp will be constructed. The final general arrangement after completion of Phase 3 is illustrated in Figure 3.14.

## **3.6.2 Mooring Dolphins**

### **3.6.2.1 Permitted Development**

In the permitted development mooring of ships was accommodated on the main quay structure and no mooring dolphins were proposed.

### **3.6.2.2 Proposed alterations**

The phasing of the introduction of the Ro-Ro ramp in order to comply with Condition 04 of the extant permission presents the opportunity for improved utilisation of the entire length of the quay structure for berthing, in the initial stages of development. However the potential utilisation of the berth is limited by the close proximity of the existing ferry terminal mooring dolphins. In order to maximise the efficiency in mooring operations the following alterations are proposed;

#### The removal of two existing mooring dolphins

The alterations include the removal of two existing mooring dolphins at the existing ferry terminal to facilitate the use of the full length of the quay wall for berthing in the initial stages of the development. The dolphins comprise concrete pile caps supported on tubular steel piles. The two mooring dolphins to be removed contain nine piles each, a total of eighteen piles. The piles will be cut at design dredge level and both piles and concrete pile caps will be removed for offsite disposal.

Removal works will be carried out from floating or jack-up plant and this operation will be undertaken approximately 20m further southwards of the area of construction operations for the quay wall as proposed in the permitted development. Such works will include concrete cutting, steel cutting, and concrete breaking using mechanical plant.

Removal of the dolphins will be carried out in the period between September and April inclusive to:-

- avoid interaction with summer ferry terminal operations,
- avoid the breeding tern season
- comply with the seasonal restrictions of the extant permission.

Removal works will be undertaken concurrently with other quay construction activities and will not result in an increase in the overall duration of the works

The dolphins to be removed are identified in Figure 3.17.

#### Construction of three replacement mooring dolphins

Three new mooring dolphins are proposed to be constructed to replace those removed from the ferry terminal. The dolphins are located outside the development footprint for the currently permitted development. The southernmost dolphin is approximately 19m southwards of the extent of the permitted quay construction. The location of the dolphins in relation to the permitted development boundary is illustrated in Figure 3.18.

The proposed dolphins will be of a similar form of construction and scale as those proposed to be removed, comprising concrete pile caps on steel tubular piles. Each dolphin will comprise eight tubular steel piles with a diameter of 914 mm. Concrete pile caps will be approximately 7m x 7m x 2 m

deep. Steel access walkways will be provided from the shore and between the dolphins. The form of construction of the mooring dolphins is illustrated in Figure 3.19.

Construction of the dolphins will use similar construction techniques as those for the main quay wall in the permitted development, namely steel pile installation and concrete construction. Construction will be carried out in the period between September and April inclusive for the same reasons as previously described for the removal of existing dolphins. Overall the period for construction of the dolphins will be in the order of two to three months but these works will be undertaken concurrently with other quay construction activities and will not result in an increase in the overall duration of the construction works.

### **3.6.3 Dredging**

#### **3.6.3.1 Permitted Development**

The permitted development included dredging for both Ringaskiddy East and Ringaskiddy West. Bed conditions comprise uncompacted silts overlying gravel, clay and limestone, depending on location. Dredging is required in all materials including bedrock. Dredging of overburden is to be carried out either by backhoe or trailing suction hopper dredger. Bedrock and other hard strata will most likely be removed by a combination of drilling and blasting, and / or the use of mechanical plant working from a floating or jack-up barge.

The total volumes of dredging for the permitted development are:-

Ringaskiddy East	137,000 m <sup>3</sup> (of which 90,000 m <sup>3</sup> would be disposed of to sea)
Ringaskiddy West	215,000 m <sup>3</sup> (all of which would be disposed of to sea)

#### **3.6.3.2 Proposed Alterations**

To allow the full length of the berth to be utilised for mooring of vessels the dredge pocket for Berth 1 at Ringaskiddy East is proposed to be extended to the South along the full length of the quay wall. Dredging will be to the same depth as that included in the permitted development (-13.0m CD).

The extent of the proposed additional dredging is illustrated in Figure 3.20. The southernmost extent of the proposed additional dredge area is approximately 65 m south of the dredge area for the permitted development.

The additional dredging covers an area of 3750m<sup>2</sup> and approximately 15,000 m<sup>3</sup> of additional material will be generated. This represents, at this location, an increase of approximately 11% on the original dredge quantity and a 17% increase in the volume to be disposed of at sea. The percentages in comparison to the total quantity included in the original EIS for the permitted development (including Ringaskiddy West) are 4% in total dredging and 5% in material to be disposed of at sea. The additional dredging is estimated to add approx. 3 days to the overall duration of dredging activities.

Dredging to the required depths will use similar methods to those considered in the original EIS for the permitted development, namely by backhoe or trailing suction hopper dredger with any rock being removed by a combination of drilling/blasting and mechanical excavation. Any dredged bedrock or other hard strata will be re-used in the construction works.

The disposal of the dredged material will be the subject of a separate application for a Dumping at Sea Permit from the Environmental Protection Agency.

### **3.6.4 Reclamation**

There are no proposed alterations to the extent of reclamation compared to the permitted development.

## **3.7 Buildings and Miscellaneous Structures**

### **3.7.1 Permitted Development**

The permitted development included the following buildings, the locations of which are illustrated in Figure 3.21:-

#### **3.7.1.1 Maintenance Building**

The maintenance building was to be provided for the maintenance and repair of terminal equipment and other port infrastructure. The size of this building was to be 7.82m high x 18.2m wide x 20.5m long.

#### **3.7.1.2 Offices**

Two porta cabin offices were proposed to house port administration staff, welfare facilities and other ancillary activities. Each office was to comprise a small two storey building of prefabricated construction, approximately 5.15m high x 3.80m wide x 12.2m long.

#### **3.7.1.3 Entrance Kiosks**

Security kiosks and associated canopies were to be provided at the entrance and exit gates. Kiosks had dimensions of 3.9m high x 3.40m wide x 8.7m long. Canopies had plan dimensions of 10.8m x 10.8 m with a maximum height of 7.2m.

### **3.7.2 Proposed alterations**

A number of alterations are proposed for the buildings as set out in the following sections;

#### **3.7.2.1 Maintenance Building / Customs Inspection Building**

The proposed change in operating system to straddle carriers means that the permitted maintenance building proposed is no longer fit for the purpose of maintaining the changed port operating equipment. It is therefore proposed to use this building as a customs inspection building. The internal layout of the building has been amended to accommodate this proposed change in use.

The requirement for the internal re-arrangement of the terminal area to accommodate an increased area for entrance and interchange facilities in order to operate the automated gate operating system results in this building being relocated to the south of the terminal site, adjacent to the proposed terminal entrance within Port lands. The proposed position is approximately 67m south of the permitted location. The southern edge of the building extends approximately 3 m south of the permitted terminal boundary. The location of the building is illustrated in Figure 3.22.

Very minor amendments to the overall external dimensions of the building are proposed to accommodate the change in use.

The building is illustrated on Figures 3.22a and 3.22b and on the following drawings;

- 16001-SKE-02-1001 – Customs Inspection Building - Ground Floor Plan
- 16001-SKE-02-2001 – Customs Inspection Building - Elevations

#### **3.7.2.2 Proposed Office and Maintenance Building and Car Park Area**

The proposed alterations include the re-location of the previously proposed maintenance building, office and car parking area from inside the container storage area and the construction of a new office and maintenance building and car park near the entrance to the passenger terminal. The re-location is required to provide area to accommodate an increased entrance and interchange layout to operate the automated gate operating system

The area will be located on Port land to the South of the existing Ferry Terminal access road as illustrated in Figures 3.22 and 3.23. The maintenance building is located approximately 74m (to the centre of the building) southwards of the terminal boundary of the permitted development. The southern boundary of the area is approximately 116m southwards of the terminal boundary of the permitted development

The building will comprise a maintenance workshop and all facilities required for maintenance operations personnel. The building is detailed on Figures 3.23a, 3.23b, 3.23c and 3.23d and on the following drawings;

- 16001-SKE-00-0002 – Site Layout Plan Terminal Office and Maintenance Building
- 16001-SKE-00-1003 – Ground Floor Plan Terminal Office and Maintenance Building
- 16001-SKE-00-1004 – First Floor Plan Terminal Office and Maintenance Building
- 16001-SKE-00-1005 – Roof Plan Terminal Office and Maintenance Building
- 16001-SKE-00-2001 – Elevations Terminal Office and Maintenance Building
- 16001-SKE-00-2002 – Contextual Elevations, Terminal Office and Maintenance Building
- 16001-SKE-00-2003 – Contextual Elevations, Terminal Office and Maintenance Building

The maintenance workshop building will be required to facilitate the maintenance of straddle carriers and will have with an overall height of 22.5m.

The proposed alterations require some minor changes to the existing entrance to the Ferry Terminal check in area.

### **3.7.2.3 Alterations to Entrance Kiosks and Canopies**

The automated gate operating system is at the nucleus of the Vehicle Management System necessary for the implementation of the Ringaskiddy Mobility Management Plan as required under Condition 5 of the extant permission.

The proposed alterations include the relocation of the entrance facilities and amendments to the automated gate operating system elements as set out below;

1. Relocation of entrance facilities – the entrance and exit facilities are proposed to be relocated as described in Section 3.8.2.
2. Removal of entrance canopies – the entrance canopies are no longer required and are removed from the proposed Development.
3. Reduced number of kiosks – The number of kiosks is reduced from three to two
4. Automated gate operating system gantries – In order to facilitate the operation of an automated gate operating system it is proposed to construct two steel gantry structures over the entrance and exit roads to accommodate cameras and signage. Each gantry will be 20 m wide to span across the road and will have a height of 6.55m. The locations of the gantry structures are illustrated in Figure 3.24.

### **3.7.2.4 Refrigerated Container Gantry Structures**

#### Permitted Development

In the permitted development refrigerated containers (reefers) were to be accommodated in the main RTG stacks as illustrated in Figure 3.25.

## Proposed Alterations

It is now proposed to provide separate stacking for the storage of reefers at the location illustrated in Figure 3.25.

Reefer containers will be stacked 4 high (10.4 m in height) and steel gantry structures (8.6 m in height) will be constructed to provide personnel access. A typical reefer gantry structure is illustrated in Figure 3.26.

## **3.8 Entrance and Interchange Area Layout**

### **3.8.1 Permitted Development**

The layout of the entrance and exit area for the permitted development is illustrated in Figure 3.27.

### **3.8.2 Proposed Alterations**

The layout of the entrance and interchange area to the terminal is proposed to be amended to accommodate the proposed Straddle Carrier/RMG operating system, to allow efficient vehicle management and queuing, and to facilitate the automated Gate Operating System that will enable the implementation of the Mobility Management Plan.

The overall layout is illustrated in Figure 3.27.

Alterations are limited to:-

- Relocation of the entrance facilities
- Reconfiguration of the entrance roadway/lanes
- Removal of surface car parking area from within the terminal area. This is proposed to be accommodated at the location of the proposed new maintenance building as described in Section 3.7.2.2.
- Changes to the provision of Kiosks, Canopies and Gantries as described in Section 3.7.2.3.

The revised operating plant circulation area will also require the southern boundary to the terminal /interchange area to be 18m south of the boundary for the permitted development.

## **3.9 Footprint of Development**

The proposed alterations as described in the above sections result in a change in the footprint of the development compared to that included in the permitted development as a result of:-

- The introduction of the mooring dolphins
- The reduced container stack height from five to three containers
- The extension of the southern boundary of the container storage area to accommodate changes to the entrance and interchange area layout
- The movement of the maintenance workshop building, office and car parking area within Port lands which is currently used for the passenger terminal.

The proposed alterations result in a 7% increase in the area of the planning boundary, as compared to the permitted development.

A comparison of the areas for the permitted development and proposed alterations is illustrated in Figure 3.28.