Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | Limerick | London

Waste Licence Application

Bantry Inner Harbour Development Phase 1

ORIGINAL

Attachments

Project No.:	16341
Document No.:	6029
Rev:	A
Date:	March, 2016

Contents

Table of Figures

Table of Tables

Appendices

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
16341	6029	A	23.03.2016	M.O'Shea	P Parle	P Collins	Controlled

Malachy Walsh and Partners, Engineering and Environmental Consultants
Address: Park House, Mahon Technology Park, Bessboro Road, Blackrock, Cork

Attachment A

Attachment A1 Non-Technical Summary

This Non-Technical Summary has been prepared in accordance with Article 12(1)(u) of the Waste Management (Licensing) Regulations S.I. 395 of 2004 (as amended). Sub-articles (a) to (t) of Article 12 are addressed below.

For clarity, the paragraph numbering is in accordance with the numbering of Article 12(1), (a) to (v).

Article 12(1)

(a) General Details

Applicant
The Port of Cork Company,
Custom House Street, Cork
Cork
Tel: 021-4273125
Fax: 021-4276484

Address for Correspondence
c/o Mr. Tim Murphy
The Port of Cork Company
Custom House Street

(b) Planning Authority
Cork County Council

(c) Sanitary Authority
Not Applicable

(d) Location
Name: Bantry Inner Harbour Phase 1 Works
Address: Seafield & Reenrour West
Bantry
County Cork
Tel: 027-53277

Fax: 027-51202

e-mail: tmurphy@portofcork.ie

National Grid Reference E 99040 N 48572
E 99059 N 48466

(e) Nature of the Development
This Licence application relates to an installation for the recovery of dredge material at Bantry in Co. Cork as part of the Inner Bantry Harbour Development Phase 1 project.

The location of the proposed scheme is at Reenrour West and Seafield, Bantry Harbour, in Bantry Town, Co. Cork, Figure A.1. Bantry Town is located at the head of Bantry Bay which is one of the deepest natural harbours in Europe and the longest Bay in Ireland. The town itself has a good size harbour area known as the 'Inner Harbour' which makes up a substantial portion of the towns water front and is a significant backdrop and focal point for the town.

The Port of Cork (Bantry Bay Harbour Commissioners) commissioned the design of a scheme which will provide a sheltered harbour environment and marina with increased water depth

and improved pier facilities to promote fishing and tourism activities in the Bantry area. The scheme will also provide additional and improved recreational and amenity areas for the town. The scheme includes proposals for the beneficial re-use of dredged material.

Phase 1 Scope of Works will comprise:

I. The refurbishment of the existing Town Pier; the construction of a length of Quayside; the construction of an Amenity Area and the installation of Marina and Breakwater type Pontoons,
II. The protection of the proposed Amenity Area using a rock armour Perimeter Engineered Revetment Structure with aggregate core material and geotextile linings,
III. Dredging of an area of the inner harbour to a depth of between -3m and -4m Chart Datum,
IV. The reuse of dredge material as fill within the proposed pier structures and amenity area,
V. The treatment of finer grained dredge material to solidify and stabilise it for use as an engineered backfill and also immobilise and retard any potential contaminants to enable it to be reused as fill material behind the proposed Town Pier, Quayside structures and within the proposed Amenity Area,

FIGURE A-1 SITE LOCATION & ELEMENTS OF PROPOSED SCHEME.

(f) Class of Activity

A waste license is being sought from the EPA for the recovery and treatment of dredged sediments, a portion of which is potentially contaminated non hazardous material. This comes under Class **R5** of the fourth schedule of the waste management act 1996, as amended, the Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials. This is the Primary Activity.

Other Activities that may be undertaken are;

- **R11**, the use of waste obtained from any of the operations numbered R 1 to R 10 whereby the treated dredge material is used as engineering material within the structures and
- **R13** Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of collection' in section 5(1)), pending collection, on the site where the waste is produced) whereby dredge material is stored in treatment cells or placed in transport barge prior to treatment, R5.

(g) Quantity and Nature of the Waste

The seabed within the development area consists of a layer of fine grained material overlying a coarser grained material.

The fine grained dredge material can be divided into two types: potentially contaminated and clean. An analysis of sediment samples taken from the seabed surface indicates that some of the sediments are potentially contaminated, with hydrocarbons and heavy metals including Trybutly Tin (TBT) and Mercury (Hg). It will be necessary to treat both types of fine material before they can be used in the construction as engineered backfill. Both types will need to be dewatered / stabilised to improve their load carrying capacity, and to immobilize any potentially contaminated material and retard its potential leachability.

It is proposed to stabilise and place up to approximately 72,000 tonnes (45,000m^3) of material annually into newly constructed retaining structures as part of the Bantry Inner Harbour Development. Of the 72,000 tonnes of dredged material treated and placed in the structures, 32,000 tonnes (20,000m^3) will be inert coarser grained dredge material and 40,000 tonnes (25,000m^3) will be finer grained dredge material. Based on the pollutants occurring in the top meter of sediment approximately 12,000m^3 (<30% of the total volume) is potentially contaminated non-hazardous material. Dredging works are scheduled from Nov 2016 to March 2017 and for Nov 2017 to March 2018 if necessary.

Analysis of the sediment sampling undertaken for this project in 2009 and 2015 classifies the contaminated dredged material as Non-Hazardous according to the HazWasteOnline Classification Tool which uses chemical thresholds from WM2: Hazardous Waste: Interpretation of the definition and classification of hazardous waste from the EU Waste Framework Directive. The material has been classified with the EWC Code: 17 05 06. Refer to the Hazard Assessment Tool Reports presented as an Appendix 8 - Attachment In the QRA Report.

(h) Raw Materials, Substances, Preparations and Energy

The raw materials apart from the dredge material are:

Aggregate Stone Materials
Cement
Rock armour
Reinforcing steel
Geotextile Membrane Materials
Revetment core material (clean imported aggregate)
Sheet Piles

The following fuels will be used by construction and dredging equipment:
Diesel
Petrol

Hydraulic Oil

Water will be required for dust suppression should it arise. It is estimated that between 8 and 12% cement will be added to the dredge material to solidify and stabilise it. The specific quantities of raw material for the design mix will be determined prior to the mix bench testing stage. No raw materials or fuels will be required during end use, maintenance and aftercare phases.

(i) Plant, Processes and Operating Procedures

It is proposed to use the stabilised dredge material in three locations. (1) as engineering fill behind a rock armoured Perimeter Engineered Revetment Structure (PERS) for the construction of a public amenity area, (2) as engineering fill behind sheet piles pier extension and (3)as engineering fill in and behind a new sheet piled quayside structure which will for provide car park and floating marina landing area.

The plant involved is typical marine construction plant:

- Spud Leg Barge
- Back Hoe Dredger
- Transport Barge
- Long Reach Excavator
- Dump Truck
- Allu Mixer
- Water Bowser
- Sheet Piling Hammer

It is planned that the construction program for Inner Bantry Harbour Phase 1 will take 16 months. Normal working hours for the duration of the construction are 8 am to 6 pm weekdays and 8 am to 1 pm Saturday. Dredging operations are restricted to a window between beginning November 2016 to end of March 2017. The proposed dredging/treatment process is shown in the flow diagram below, Figure A.2.

Further detail on the process and operations of the project is provided in Attachment D.1 and D.2.

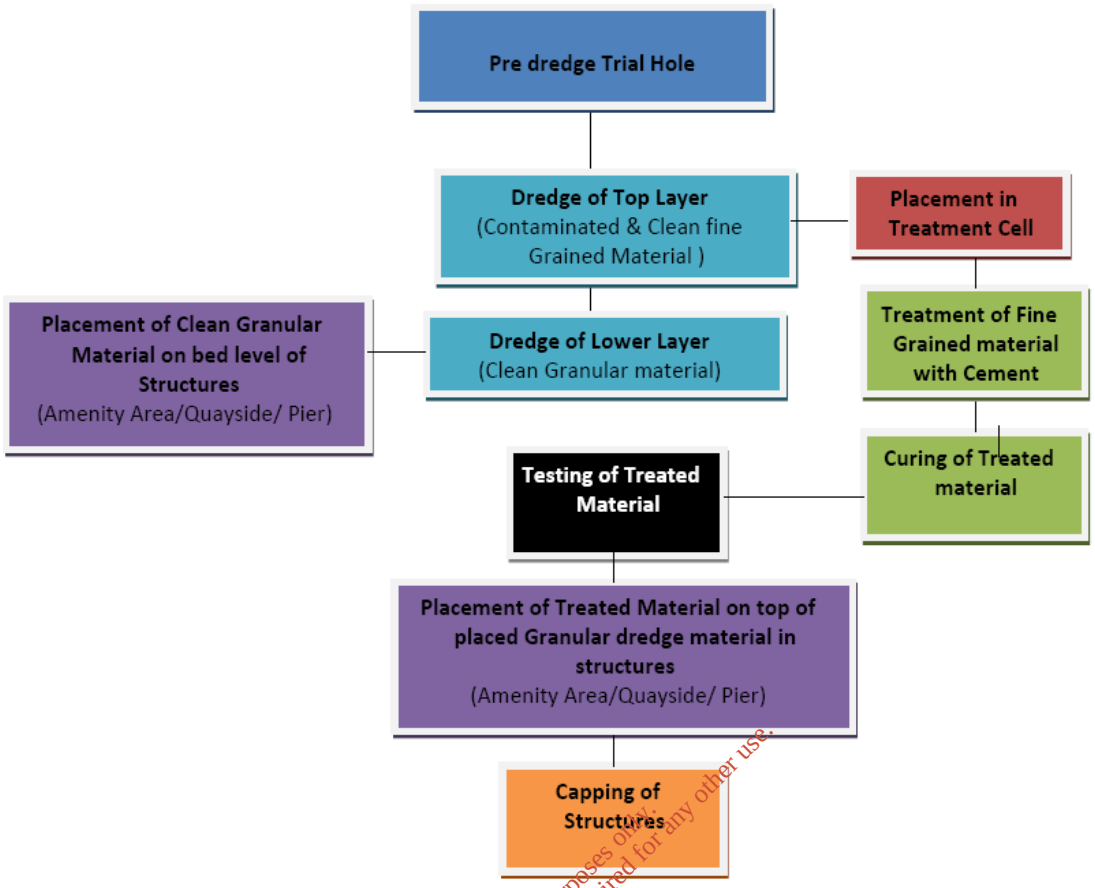


FIGURE A-2 PROCESS FLOW DIAGRAM

(j)Regarding Paragraphs (a) to (g) of section 40 (4) of the Waste Management Act
Section 40 (4) of the Waste Management Act 1996, amended by the Protection of the Environment Act 2003, sets out specific criteria of which the Agency must be satisfied before it will consider the granting of a license. The following statements have been addressed in more detail in each of the Attachments B to L.

Any emissions from the recovery activities in question will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any other enactment

The Treatment and re use of dredge material as detailed in this application and carried on in accordance with such conditions as may be attached to the license, will not cause environmental impact..

The best available technology not entailing excessive costs and best available techniques will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned.
The activity concerned is consistent with the objectives of the relevant waste management plan or the hazardous waste management plan, as the case may be, and will not prejudice measures taken or to be taken by the relevant local authority or authorities for the purpose of the implementation of any such plan.

As this application pertains to the construction/enhancement of Inner Bantry Harbour, the Engineering Management personnel of the Port of Cork Company as applicant is deemed the fit and proper person to hold a waste license.

The Port of Cork Company has complied with the requirements under section 53.

Energy will be used efficiently in the carrying on of the activity concerned.

Any noise from the activity concerned will comply with, or will not result in the contravention of, any regulations under section 106 of the Act of 1992,

(k) Emissions from the Site
The potential emissions arising from the dredging, treatment and placement of material will be, noise, suspended sediments and leachates in surface water. These emissions are discussed in detail in the EIS, the environmental Quantitative Risk Assessment (QRA) Report and in Attachment I of this form.

The construction phase of the proposed development has the potential to give rise to:

- The emission of dust from excavation and construction works and the storage and movement of materials,
- Construction vehicles, generators etc., may give rise to carbon dioxide and nitrous oxide emissions. However the level of emissions will be insignificant compared to national greenhouse gas emissions.
- Dredging and placement of fill has potential to release suspended sediment and contaminant leachate, however both the EIS and the environmental QRA have shown that this will have a negligible impact on the surrounding environment

(l) Effects of Emissions
There will be no negative impacts from the emissions.

(m) Monitoring and Sampling Points
The control measures and monitoring strategy of the potential emissions has been developed as part of the waste license to ensure all risks are suitably mitigated. Further details on the type frequency of monitoring is available in Attachment F of the Licence application form and also in the accompanying QRA Report. To ensure all monitoring and mitigation measures are implemented, the contractor will employ an environmental officer.

There are proposed monitoring points:

- AA-01- Dust emission at Western boundary of Quayside Reclamation
- AA-02- Dust emission at Western boundary of Amenity Area
- SW- A01 – surface water emission at the mouth of the inner harbour entrance
- SW – A02 – surface water emission at nearest mussel farm
- SW – M01 – surface water emission at adjacent to Dredge works
- N-01 – noise monitoring point 1 at Maritime Hotel
- N-02 – noise monitoring point 1at Buildings adjacent to Harbour View
- N-03 – noise monitoring point 1 at Building adjacent to proposed amenity area

(n) Arrangements for Prevention, Minimisation and Recovery of Waste Arising from the Activity
As all the dredged sediment will be re-used as fill material the volume of waste material that will arise from the dredge treatment activity is anticipated to be low. It is expected to be mainly, tyres, glass, plastics and metals that have been discarded in the harbour basin. These materials will be segregated from the dredged sediments and sent off site for appropriate recovery or disposal. .

(o) Arrangements for Off-site Treatment or Disposal of Wastes
As the expected volumes of waste required to be taken off-site are low, this will be undertaken by contractor KWD, who are in possession of an appropriate waste collection permit. This waste will be brought to an authorised treatment facility in possession of a waste facility permit or waste license for recovery or recycling, or in the case of disposal, to an authorised waste licensed landfill facility

(p) Measures including Emergency Procedures for Unauthorised or Unexpected Emissions
A draft Environmental Liabilities Risk Assessment is included in Attachment J and Appendix 9 - Attachment J for further discussion and agreement with the Agency.

(q) Closure and Restoration
A draft Closure Plan is submitted to the Agency for agreement and can be found in Attachment K.

The proposed licenceable activity is as an integral part to the redevelopment works for Bantry Harbour and to the management of dredge material. Upon completion of the required dredging activity, treatment of the material dredged, construction of the planned pier and amenity area, the activity will be fully completed and will cease

(r) Related to landfilling of waste and is not relevant to this development

(s) European Communities (Control of Major Accident Hazards involving Dangerous Substances Regulation 2000
Dangerous substances will not be generated during the waste activity as per

(t) Council Directive of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances.
There will be no discharge to groundwater, as all proposed waste activities take place in the foreshore where groundwater has been identified by the site investigations to be at depth (~7m below ground level) and isolated from the works by naturally occurring low permeability deposits and/or bedrock. There will be no groundwater use and it will not be affected.

(tbis) Main alternatives
Alternatives to reusing the treated dredge material within the construction works were considered. The removal of the material to landfill was considered as an alternative. The closest suitable licensed facility is over 200Km away from the site, in line with the principles of Self Sufficiency and Proximity this option was not deemed viable. In addition, the option of dumping at sea was considered, but in consultation with the Marine Institute, the contaminated dredge material was not considered suitable for management in this way.

(v) Describe how the waste hierarchy in Section 21A of the Act is applied
The waste hierarchy, as outlined in Section 21A of the Act, is applied as follows:

TABLE A-1 WASTE HIERARCHY

Waste Hierarchy	Activity
Prevention	Not possible as material has to be dredged as part of project.
Preparing for Re-use	Not considered applicable to the proposed development
Recovery	Treatment of finer grained dredge material with cement to stabilise and solidify for recovery as engineered backfill with potential contamination immobilised and retardation. The placement of the treated engineered backfill material behind and into the various structures

Other Recovery (including energy recovery)	A small amount of waste items (tyres/other debris?) are expected to be encountered recovered during the dredging activity that will be removed from site and which may be managed through other recovery processes in appropriate facilities
Disposal	A small amount of waste items (debris) will be disposed of offsite during the dredging activity

Attachment A.2

This attachment includes the documents as required by the waste licence review application form & Article 12(4) of S.I. 395 of 2004, as amended.

The following documents are attached as follows:

Attachment B.1
A copy of such plans (appropriately scaled and no larger than A3 size), including a site plan or plans and location map or maps, and such other particulars, reports and supporting documentation as are necessary to identify and describe, as appropriate
the position of the notice in accordance with article 7,
the point or points from which emissions are made or are to be made, and
the point or points at which monitoring and sampling are undertaken or are to be undertaken.

Attachment B.3
Relevant Planning documentation as per the requirements of S.I. 282 of 2012, are included.

Attachment B.6.1
A copy of the relevant page of the newspaper(s) in which the notice in accordance with Article 6 has been published.

Attachment B.6.2
A copy of the text of the notice or notices erected or fixed in accordance with Article 7.

Attachment B

Attachment B1

The following information is provided in this attachment:

a) Certified Copy of the Certificate of Incorporation or Memorandum and Article of Association;
b) the Companies Registration Number from the Companies Registry Office; and
c) a list of the Company Directors.

Attachment B.1 contains the Drawing No. 16341-7001 Rev A Ownership Plan. The site boundary line in red shoes the site ownership boundary.

NUMBER

262368

Certificate of Incorporation

I hereby certify that

PORT OF CORK COMPANY

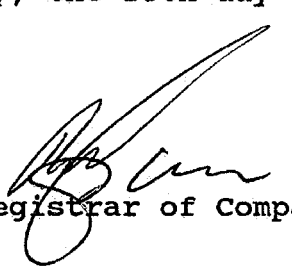
is this day incorporated under

the Companies Acts 1963 to 1990

and that the company is limited.

Given under my hand at Dublin, this

Friday, the 28th day of February, 1997



For Registrar of Companies

Directors

John Mullins
Chairman

Brendan Keating
Chief Executive

Helen Boyle

Brian Cantwell

Noel Cregan

Dave Doolan

Dominic McEvoy

Paul Mulvihill

Printed from : http://www.PortOfCork.ie/index.cfm/page/directors

Reenrour Point

Old Railway Pier

BANTRY HARBOUR

N 99040.957
E 48572.581

N 99059.031
E 48466.242

Pier

Car Park

Harbour Road

Mud

Hotels

Hotel

Cinema

Reenrour House

Railway Cottages

Hall

School

Museum

Fire Station

Cork Co Co

BM 3.07

WOLFE TONE SQUARE

Toilet

G.S. Station

Tower Street

Blackrock Road

Blackrock Heights

Car Park

3.3
3.7
3.0
2.2
2.7

Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are In metres related Ordnance Datum Malln Head.
3. Drawings are not to be scaled.

Legend

- Adjacent Lands Leased By Port Of Cork From Cork County Council
- Lands Owned By Port Of Cork Company (To LWM In Harbour)
- Lands Owned By Port Of Cork Company When Constructed
- Site Notice Location

0 20 40
Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: SITE OWNERSHIP PLAN

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:2000	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

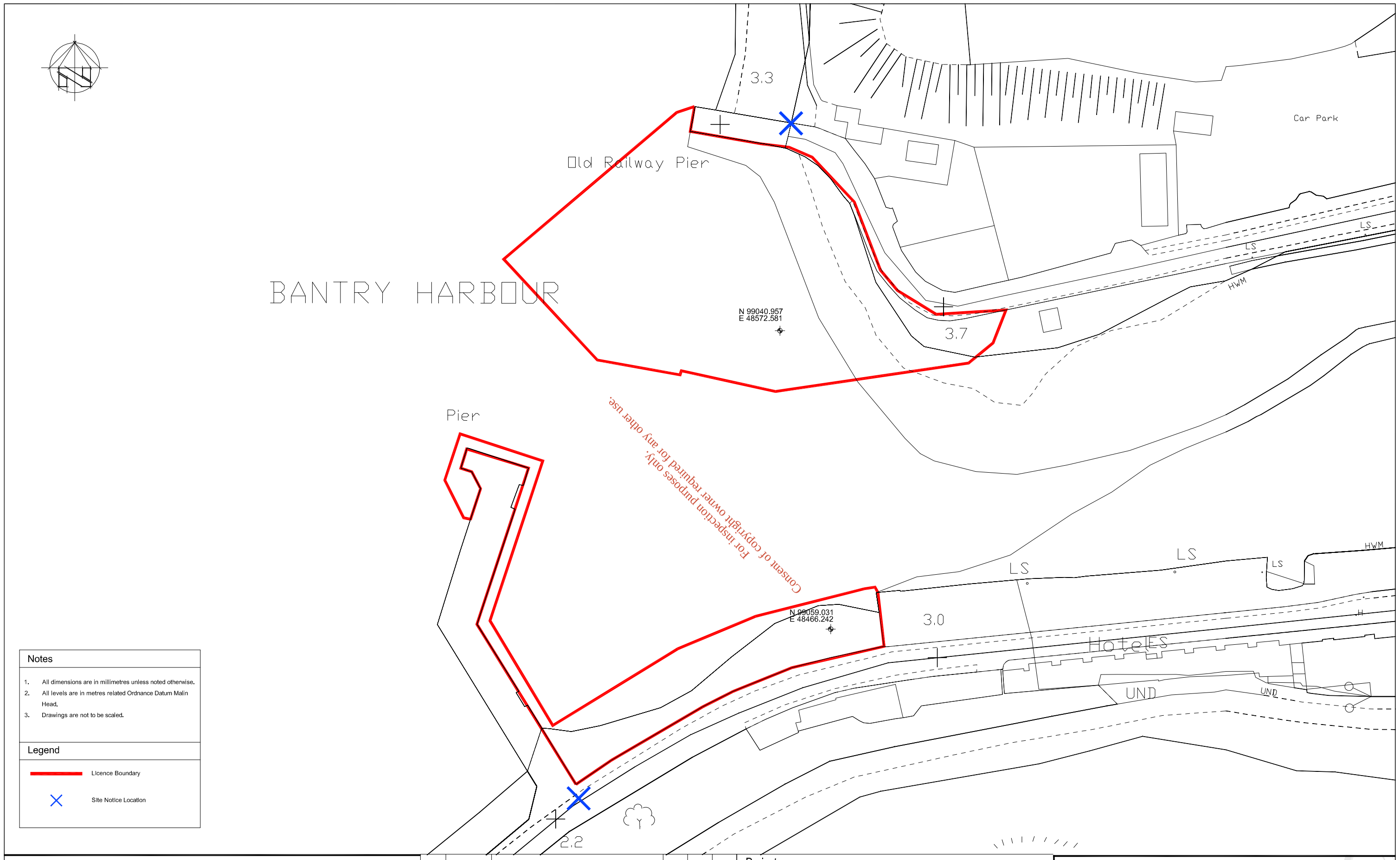
Drg. No. 16341-7001

Rev. A

Attachment B2

The following drawings are included in Attachment B.2:

- Drawing No. 16341-7002 Rev A Site Plan
- Drawing No. 16341-7003 Rev A Site Location Map incl. overground Services shows the site location with overground services shown within 500 m of the site boundary.
- Drawing No. 16341-7004 Rev A Site Services Plan incl. Underground Services shows the underground services within 250 m of the site boundary.



Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.

Legend

Licence Boundary

Site Notice Location

0 12.5 25

Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: SITE PLAN

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:1250	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

Drg. No. 16341-7002

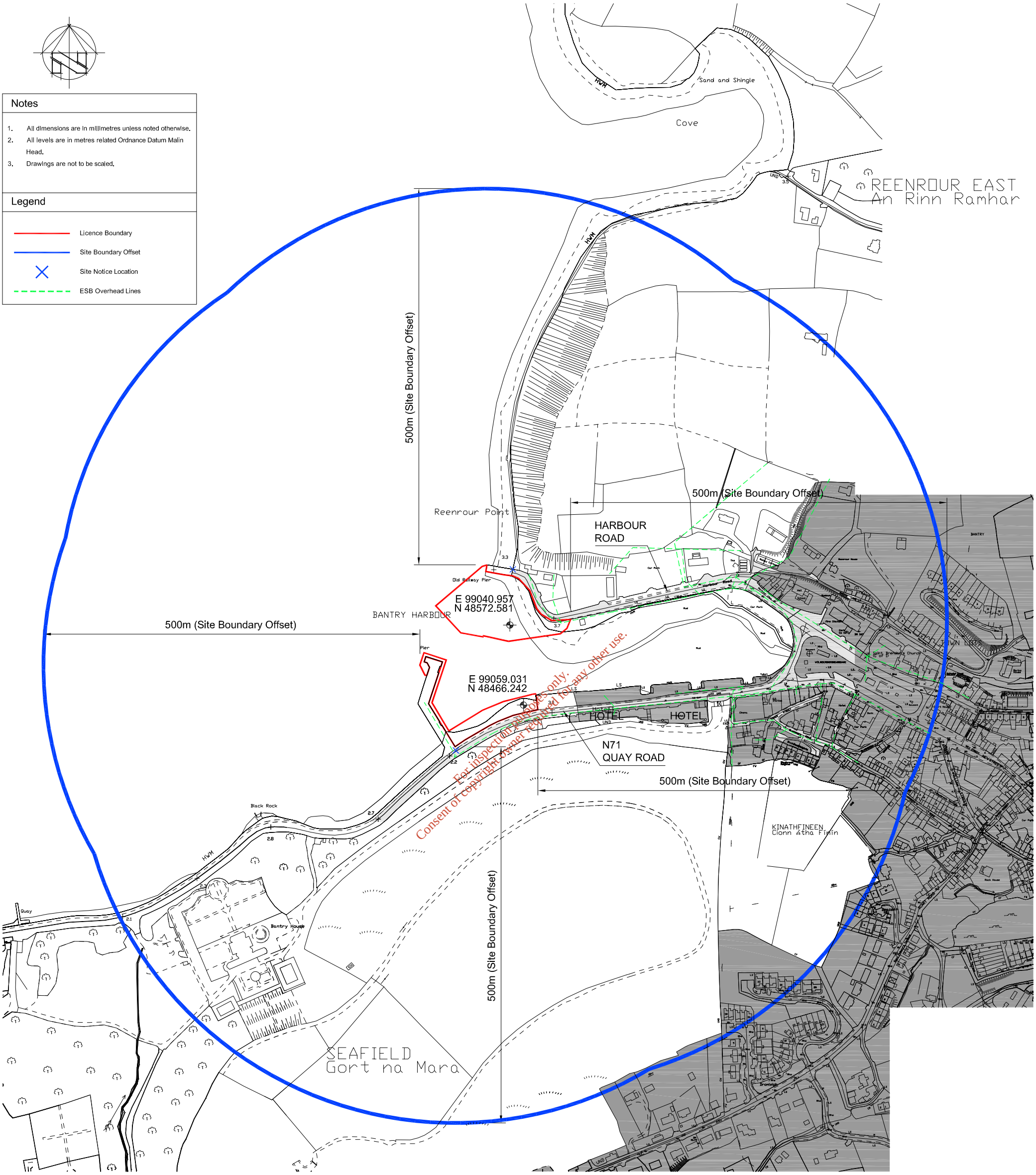
Rev. A

Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.

Legend

- Licence Boundary
- Site Boundary Offset
- Site Notice Location
- ESB Overhead Lines



0 50 100
Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

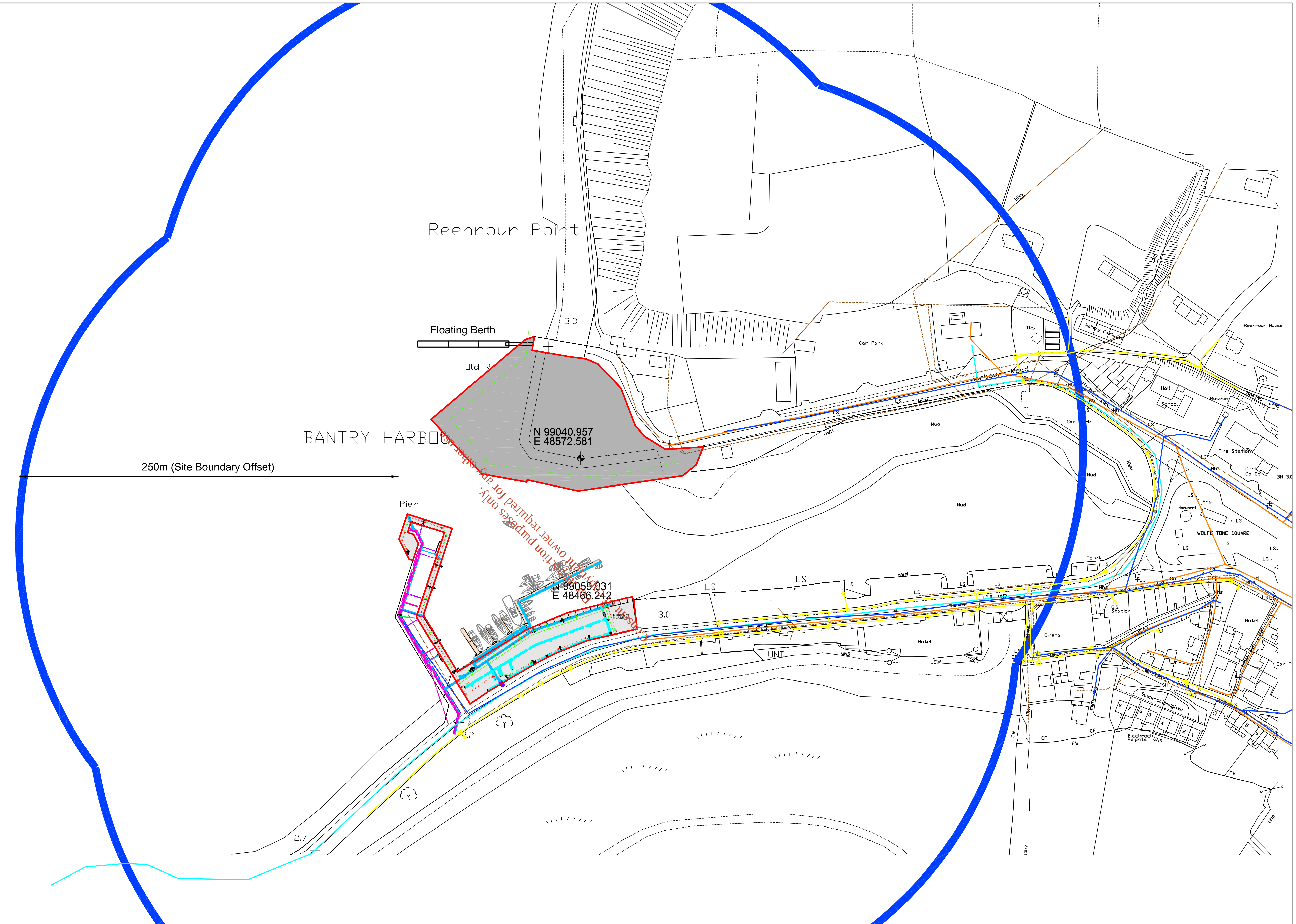
Project: BANTRY INNER HARBOUR DEVELOPMENT
PHASE 1

Title: SITE LOCATION MAP
INCLUDING OVERHEAD POWER CABLES

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:5000	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

Drg. No. 16341-7003
Rev. A



Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.

Legend

- Licence Boundary
- Exisiting Foul
- Exisiting Watermain
- Exisiting Electrical
- Exisiting Process
- Proposed Watermain
- Proposed Process
- Proposed Stormwater
- Proposed Land Drain
- Proposed Foul
- Proposed LV Electrical Ducts
- Proposed ELV Electrical Ducts
- Existing ESB Overhead Lines
- Existing Eircom
- Existing Watermain
- Existing Wastewater Rising
- Existing Wastewater Gravity
- Existing Wastewater Gravity

Reference Drawings

16341-7005	Site Services Plan - Pier, Including Underground Services
16341-7016	Proposed & Existing Services On The Pier, Quayside And Amenity Area

Map Reproduced From Ordnance Survey Ireland
By Permission Of The Government.
Licence Number EN 0015716
OSI Sheet No. 6654-B

0 25 50
Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: SITE SERVICES PLAN (INCLUDING UNDERGROUND SERVICES)

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:2500	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

Drg. No. 16341-7004 Rev. A

Attachment B. 3 Planning Authority

(d) Planning granted
The following information is provided in Attachment B.3:

- A copy of Planning permission granted for the site in 2013 (12/00735), including planners final report.
- A copy of the letter to the planning authority informing them of the Waste Licence Application.
- The EIS prepared to accompany this planning application and is attached as part of Appendix 8 - Attachment I.
- Foreshore consent FS006437 - Port of Cork Company have also applied to the to the Department of the Environment, Community and Local Government (DECLG) for foreshore consent (FS006437). All statutory and public observations have be responded to and final conditions of this consents application have been issued by the DECLG and accepted by Port of Cork on the 3rd March 2016.
- An Appropriate Assessment Stage 1 Screening and Stage 2 NIS have been undertaken on a precautionary basis as part of this application and are attached in Appendix 1 - Attachment B.

C O R K C O U N T Y C O U N C I L
Planning & Development Acts 2000 – 2010

Bantry Bay Harbour Commissioners,
C/O Sinead Henry RPS Consulting Engs,
74 Boucher Road,
Belfast,
BT12 6RZ

Planning Register No: 12/00735

Application by: Bantry Bay Harbour Commissioners

Of: C/O Sinead Henry RPS Consulting Engs, 74 Boucher Road, Belfast, BT12 6RZ

On: 03/12/2012, as amended on 04/06/2013, as amended on 12/06/2013

For: Permission for the development of a 230 berth marina within Bantry Inner Harbour along with enabling works, required at associated neighbouring sites.

The works associated with this scheme include:

Within Bantry Inner Harbour
- **Dredging of harbour sediments to provide navigable water depths**
- **Temporary treatment area for contaminated dredge material**
- **Treatment and re-use of contaminated dredged material as fill material for reclamation**
- **Land reclamation at Railway Pier, adjacent to Town Pier and adjacent to Wolfe Tone Square**
- **Widening of Town Pier and Extension to Pier Head**
- **Breakwater and Open Pile Quay construction**
- **Improvement works to quay wall along Fishing Docks and in front of Maritime Hotel**
- **Revetment construction along northern embankment of Inner Harbour**
- **Carparking and landscaped amenity area**
- **Associated street and pier lighting**
- **Provision of pontoons and marina infrastructure.**

Cove and Beicin Strand
- **Placement of approx 79,500m3 of uncontaminated dredged material at Cove and approx 2,000m3 along Beicin Strand as part of a beach renourishment scheme.**
- **The construction of two beach retention groynes at the entrance to Cove to retain placed dredged material.**

Abbey
- **Dredging of approx 25,000m3 of contaminated material from outer harbour approaches**

- **Treatment of material and reuse as fill material for the extension of the existing hardstanding area westwards**
- **Sides of reclaimed area to be protected by sloping rock armour revetments.**
- **Extended hardstanding area to be used for boat storage**
- **Associated lighting**

At: Bantry Inner Harbour, The Cove and Beicin Strand, North of Bantry Harbour, Foreshore North of Abbey Site, South West of Bantry, Bantry, Co. Cork

Further to Notice dated the 18/07/2013 Cork County Council hereby conveys a grant of **Permission** for the application described above subject to the conditions set out in the schedule attached to the said Notice dated 18/07/2013 of its intention to grant **Permission**

Signed on behalf of Cork County Council

Bernie Ryan

Bernie Ryan
DATE: 29/08/2013

NOTE FOR GUIDANCE OF DEVELOPERS

A grant of Planning Permission or Permission Consequent on the grant of Outline Permission does NOT of itself empower a person to carry out a development unless that person is otherwise legally entitled to do so. Unless otherwise stated or unless it is revoked a Permission or Permission Consequent on the Grant of Outline Permission is valid for a period of five years.

Any development which takes place prior to the payment of a financial contribution required by any of the conditions attached to a Permission or Permission Consequent on the grant of Outline Permission will be unauthorized until compliance with the condition or conditions.

Please note that there is an onus on developers to ensure that there is no danger to the public as a result of the proposed development.

Important Notice for Developers – Conditions Precedent

The enclosed grant of permission may not automatically entitle you to commence the authorised development. This is because many permissions contain "Conditions Precedent" i.e. conditions which must be complied with before development commences. (Such conditions usually contain the phrase 'before development commences' and may require further details to be submitted to and agreed with the Planning Authority). If there are such conditions on your permission please read on.

1) **Early Submission Of Details**

   Where compliance proposals are required by condition you should make them as far in advance of your anticipated commencement date as possible. This is to enable adequate time for the Planning Authority to consider and, when satisfactory, agree the details. Such proposals may need to be revised before agreement can be reached or, in the absence of agreement, may need to be referred to An Bord Pleanala. These potential delays to starting a development can be mitigated by early submission of proposals in the first instance.

   These is no statutory timeframe for responding to such compliance proposals and on an ongoing basis the Planning Authority will be dealing with other priorities including current Planning Applications with statutory decision deadlines. **Therefore submit as early as possible and do not commence development until agreement of the Planning Authority has issued in writing.**

2) **Development Commenced In Advance of Compliance Proposals/Agreements**

   Any development commenced in advance of full compliance with such conditions (including conditions requiring financial contributions, bonds, securities) is unauthorised and leaves a developer liable to **enforcement proceeding** and **heavy penalties**. Simply submitting a proposal may not in itself be sufficient compliance if the condition also requires the Agreement/Approval of the Planning Authority. This will also apply where the Planning Authority becomes aware that a development is about to start (e.g. Commencement Notice) and conditions precedent have not been complied with.

3) **Submission Should Be Addressed As Follows:**

   Compliance with Conditions
   Planning Department West, Norton House, Skibbereen, Co. Cork.

The above information is intended for your assistance and guidance in avoiding a situation of unauthorised development and the Planning Authority wishes you every success with the development.

Cork County Council, Planning Department 2013

APPLICATION NO.	00735/12
APPLICANT	Bantry Bay Harbour Commissioners
DESCRIPTION	Permission for the development of a 230 berth marina within Bantry Inner Harbour along with enabling works, required at associated neighbouring sites. The works associated with this scheme include: Within Bantry Inner Harbour • Dredging of harbour sediments to provide navigable water depths • Temporary treatment area for contaminated dredge material • Treatment and re-use of contaminated dredged material as fill material for reclamation • Land reclamation at Railway Pier, adjacent to Town Pier and adjacent to Wolfe Tone Square • Widening of Town Pier and Extension to Pier Head • Breakwater and Open Pile Quay construction • Improvement works to quay wall along Fishing Docks and in front of Maritime Hotel • Revetment construction along northern embankment of Inner Harbour • Carparking and landscaped amenity area • Associated street and pier lighting • Provision of pontoons and marina infrastructure. Cove and Beicin Strand • Placement of approx 79,500m3 of uncontaminated dredged material at Cove and approx 2,000m3 along Beicin Strand as part of a beach renourishment scheme. • The construction of two beach retention groynes at the entrance to Cove to retain placed dredged material. Abbey • Dredging of approx 25,000m3 of contaminated material from outer harbour approaches • Treatment of material and reuse as fill material for the extension of the existing hardstanding area westwards • Sides of reclaimed area to be protected by sloping rock armour revetments. • Extended hardstanding area to be used for boat storage • Associated lighting
LOCATION	Bantry Inner Harbour, The Cove and Beicin Strand, North of Bantry Harbou Foreshore North of Abbey Site, South West of Bantr Bantry, Co. Cork
DUE DATE	06/08/2013

Applicants responded to the request for Additional information on the 04/06/2013. The following items of additional information were requested:

It is noted that the applicants made changes to the initial application in so far as they have changed the location of the dewatering of the dredged material from the inner harbour. Initially the dewatering was to take place in the public car park this has now however been moved to two other locations within the overall site boundary. Applicants re-adverti
sed this change in the application on the 12/06/2013 as significant additional information as deemed by the planning authority on receipt of the initial response.

Consultations

External

- **NRA**–No objections as per initial submission
- **Dept. Of Arts, heritage & the Gaeltachta**. –No objections

Technical reports

- **Area Engineer** – no objections subject to conditions.
- **Specialist Engineer report -** No further objections subject to inclusion of conditions.
- **Environment Officer** – No objections subject to conditions.

Submissions
None

The following items of additional information were requested by the Planning Authority

1. The applicant is requested to provide greater details of the proposed site for the contaminated dredge material treatment process including the following;

a) details of the time scale of the dredging activity at the site. The dredging operation should be in the shortest time scale possible.
b) details of all plant and machinery at the dredge treatment site.
c) details of any chemicals or reagents used in the dredge treatment process.
d) details of measures mitigate or reduce any noise nuisance from the dredge treatment site and the site works in general.
e) details of measures to mitigate, reduce or eliminate any odour from the project.
f) details of any temporary storage sites for dredge materials and measures to control water pollution from the area. Also details of time any dredge material will be in temporary storage.
g) details of measures to prevent reduce or eliminate any water pollution from the site activities e.g surface water runoff, dredge runoff etc.
h) details of the procedure for transferring dredge material from the harvesting area to the final reclamation area including details of pollution control, odour control, noise control, cleanup of any spills etc.

Prior to preparing a response and submitting further information, the applicant should contact and discuss the details with John Earley, Cork County Council Environment Section at 028 40708 in relation to Item No 1 above.
Response and assessment: The Environment Officer has no further objections to the proposed subject to conditions. This is considered acceptable.

2. It is noted that the proposed treatment of the three old existing fishing docks along the southern quay wall is considered to be inappropriate and the applicants are thus requested to amend the proposed placing of a coffer in front of them and essentially cutting them off from use. The existing old fishing dock should be incorporated into any revised design the slipways are unique features and thus shall be preserved from impacts from the proposed works.

Response and assessment: The applicants have responded by indicating that the old fishing quays will remain, the proposed coffer will be constructed along the southern quay wall between the entrances to the fishing docks with the top level of the capping beam flush with the existing level of the fishing docks. This is considered acceptable.

3. Concerns have been raised as to the potential impact the dredging of the inner harbour will have on the existing inter tidal aquatic marine habitat, and that further investigation into mitigation measures should be incorporated. Applicant is requested to indicate mitigation measures to prevent total loss of inter tidal habitat.

Response and assessment: Applicants have had discussions with the IFI and have agreed that biodiversity information boards will be erected. The applicants have submitted a letter indicating their agreement with this.

4. Clarification is required as to whether it is proposed to provide access to drinking water for boats using the harbour/marina. If this is proposed, details should be provided of proposed controls on access and usage and anticipated demand with relevant calculations.

Response and assessment: no objections to the proposed based on the engineer report

5. The proposed temporary use of the community car park for the treatment of the dredge material is of concern, having regard to the potential loss of parking. The applicant should submit proposals for alternative car parking arrangements. In this regard, the applicants should consult with both the Senior Engineer, Mr.Niall O'Mahony and the Area Engineer, Ms. Ruth O'Brien prior to formally responding to this item.

Response and assessment: The applicants have now decided to move the location of the dewatering to two other locations within the site boundaries thus not having any impact on the parking provisions within the town.

6. The applicants shall clarify whether the proposal would impact on the existing large capacity storm water outfall from the wastewater pumping station which currently discharges into the Inner Harbor.

Response and assessment: no objections from the engineer subject to condition.

Conclusion

The proposed development is considered to be acceptable the applicants have adequately responded to the request for additional information. The essential role of Bantry in supporting employment and tourist related infrastructure is recognised in its designation as a 'primary hub' in the 'Marine Leisure Infrastructure Strategy for the Western Division of Cork Council' (2007) and in the objectives of the Bantry Electoral Area Local Area Plan, 2011. The proposal would accord with two specific objectives in the Bantry LAP including Section 1.2.11 wherein it is stated "the development of a marina and the future use of the railway pier site will play an important role in the provision of marine and mixed use developments around the harbour which in turn improve the tourism and employment potential of the town". Zoning Objective X-02 further provides for the redevelopment of the Inner Harbour for a mix of uses including recreational, amenity, tourist and marina related uses.

Conclusion

Grant

Conditions/Reasons

No.	Condition	Reason
1	The proposed development shall be carried out in accordance with plans and particulars lodged with the Planning Authority on 03/12/2013 and as amended by way of significant additional information submitted and received on the 04/06/2013 save where amended by the terms and conditions herein.	In the interests of clarity.
2	Archaeological Monitoring and specific site scrutinisation. All dredging and dumping works to be fully archaeologically monitored. Close scrutiny shall be given to	In the intrests of the propoer planning and sustainble development of the area

	particular areas where potential cultural material may be located, in particular: • Area where borehole BH15 was investigated. • The Cove where anomalies M3-M5 are located and that may represent a linear feature. • Inner harbour where anomalies 15-20 are located and may represent buried cultural material or artefacts. • Abbey Strand where the remnant of the red brick was recovered. A suitably qualified archaeologist with underwater archaeological experience and experience in marine dredging works to carry out all archaeological works. It is advised that a dive and detection licence be in place, in tandem with the excavation/monitoring licence to ensure that if potential archaeology is impacted during the course of the work and dive inspection becomes necessary, there is no delay in undertaking such an inspection. The monitoring archaeologist shall have the power to have dredging works suspended should potential cultural material be impacted and works in the immediate area shall remain in suspension until the area has been archaeologically inspected/investigated. A detailed method statement shall accompany the monitoring licence application, and it shall include a finds retrieval strategy that incorporates spreading and metal detection of dumped material to allow the best opportunity for artefact recovery.	
3	Archaeological Recording, Relocating of objects and detailed assessment/investigation.	In the intrest of the proper planning and sustainable development of the area

	As previous, the Underwater Archeological Impact Assessment identified a number of new features and commented upon known features within the confines of the areas to be developed, in particular: • At the Cove/Newtown (ADCO 1 & 2): two escarpments that may be boat landing areas or hards were identified that may be impacted by the proposed beach replenishment works. These two features shall be fully archaeologically recorded in advance of any works in this area. This shall include a drawn and descriptive record, supported by photographic and geo-reference survey. All effort shall be made to avoid any direct impact on these features. • Inner harbour/Reenrour West (ADCO 4): Buried timber exposed in sands to be revealed to determine its nature and extent; this to be done through archaeological test excavation in advance of any works in this area. Samples shall also be taken to try to determine its date. • Inner harbour/Town Lots (ADCO 19, 20 & 21): it is stated that the old slipways will not be impacted by the proposed works. As highlighted in the Underwater Archeological Impact Assessment, the slipways are unique features and thus shall be preserved from impacts from the proposed works. • Inner Harbour/Town Lots (ADCO 17): the anchor identified in this area, though apparently of modern date, to be archaeologically recovered and removed to a safe area in advance of works. This can be done by an archaeologist during the course of the recording works being undertaken of the slipways in the immediate environment.	

	• Inner Harbour/Town Lots (ADCO 12 & 13): main south pier to be fully archaeologically recorded in advance of all works. This to include a drawn and descriptive record, supported by photographic and geo-reference survey and all quay furniture, fixtures, fittings and features that are due to be concealed by the proposed works to be archaeologically recorded in detail. • Inner Harbour/Town Lots (ADCO 14): Eroded stump of timber to be exposed and recorded to determine its nature and extent; this to be done through archaeological test excavation in advance of any works in this area. Samples shall also be taken to try to determine its date • Inner Harbour/Town Lots (ADCO 15, 16 & 18) South quay wall, culvert and iron shackle to be archaeologically recorded in detail in advance of its concealment by the proposed works. • Abbey Strand (ADCO 23): the identified ship's timber to be archaeologically recovered and relocated to a safe area, following full recording and descriptive survey.	
4	Connection shall be made to public water supply to the satisfaction of the Planning Authority. Full details of the watermains layout and water demand calculations shall be submitted to and agreed with the Planning Authority prior to commencement of the development.	To ensure satisfactory water supply to serve the development.
5	Water supply shall be metered to the Planning Authority's satisfaction.	In the interests of water conservation
6	The developer shall provide, at his/her own expense, a 110mm watermain from the public watermain at the Rope Walk (L-	To ensure satisfactory water supply to serve the development.

	4715) to connect to the existing watermain at the Abbey to the satisfaction of the Planning Authority.	
7	Any damage caused to the nearby public road by construction traffic during development works shall be made good by the Council at the expense of the developer.	In the interests of road safety.
8	The developer shall carry out a survey of the condition of the public road network which will be used as a haulage route for deliveries to the site and any culverts which run under the public roads along that route. The extent of the route to be surveyed shall be agreed with the Planning Authority, prior to the carrying out of the survey. Any damage caused to these culverts during the construction phase shall be repaired immediately by the developer to the satisfaction of the Council.	To protect the local infrastructure.
9	No alterations shall be made to the footpath or public road, without consultation with Area Engineer.	In the interests of public safety.
10	An application for a road opening licence shall be made to Cork County Council prior to any excavation taking place on the public road.	In the interests of public safety.
11	The main surface water culvert which runs under Wolfe Tone Square and discharges to the Inner Harbour shall be protected during and after dredging works to prevent scouring at the mouth of the culvert. Details of protecttion proposals shall be submitted to the Planning Authority, prior to the commencement of development.	In the interest of preservation of the main storm water culvert.
12	The developer shall notify an Garda Siochana and Cork County Council of any positive traffic control and any locations where works are being carried out on the public road shall be signed with advance warning signs in accordance with 'Guidance for the Control and Management of Traffic at Roadworks'.	In the interest of public safety.

13	The 'fishermans' docks shall be preserved in accordance with the plans and particulars submitted as part of the furthe information submitted and received on the 04/06/2013.	In the interest of historical preservation.
14	Prior to commencement of development the applicant shall submit for approval by Cork County Council a revised berthing layout in the vicinity of the stormwater overflow pipe to ensure proper operational and maintenance duties of the main pump station and to minimise the impact of the storm overflow on the berthing walkway and berthing bays.	To ensure proper operational and maintenance duties.

Kate Killian

Kate Killian
16/07/2013

APPLICATION NO.	00735/12
APPLICANT	Bantry Bay Harbour Commissioners
DESCRIPTION	Permission for the development of a 230 berth marina within Bantry Inner Harbour along with enabling works, required at associated neighbouring sites. The works associated with this scheme include: Within Bantry Inner Harbour • Dredging of harbour sediments to provide navigable water depths • Temporary treatment area for contaminated dredge material • Treatment and re-use of contaminated dredged material as fill material for reclamation • Land reclamation at Railway Pier, adjacent to Town Pier and adjacent to Wolfe Tone Square • Widening of Town Pier and Extension to Pier Head • Breakwater and Open Pile Quay construction • Improvement works to quay wall along Fishing Docks and in front of Maritime Hotel • Revetment construction along northern embankment of Inner Harbour • Carparking and landscaped amenity area • Associated street and pier lighting • Provision of pontoons and marina infrastructure. Cove and Beicin Strand • Placement of approx 79,500m3 of uncontaminated dredged material at Cove and approx 2,000m3 along Beicin Strand as part of a beach renourishment scheme. • The construction of two beach retention groynes at the entrance to Cove to retain placed dredged material. Abbey • Dredging of approx 25,000m3 of contaminated material from outer harbour approaches • Treatment of material and reuse as fill material for the extension of the existing hardstanding area westwards • Sides of reclaimed area to be protected by sloping rock armour revetments. • Extended hardstanding area to be used for boat storage • Associated lighting
LOCATION	Bantry Inner Harbour, The Cove and Beicin Strand, North of Bantry Harbou Foreshore North of Abbey Site, South West of Bantr Bantry, Co. Cork
DUE DATE	06/08/2013

Senior Planner's Report

I note reports on file, in particular the reports of area planner and Senior Executive Planner.

Environmental Impact Assessment

An EIS accompanies the current proposal. I am satisfied with the submitted document. I note that a decision was deferred to allow deficiencies in the proposal to be addressed.

The proposal would provide a badly-needed facility for boat users in the Bantry area and would improve the general amenity of the inner harbor. I also note the potential economic spin-offs that would spring form the development, including job creation.

The site is not located within a designated Natura 2000 site or pNHA.

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The archaeological implications of the proposal, including the underwater archaeological impact assessment have been assessed.

The deficiencies identified in the EIS, as originally submitted, have been addressed in the response to the FIR.

Contributions

I have discussed with the Senior Engineer (Coastal) and with John Draper, Water Services.

There are no permanent structures providing on-shore toilet/washing/showering facilities etc; there are no local road implications – the site abuts a National road. Consequently no contributions for roads or foul sewer are deemed necessary or appropriate. No contribution deemed necessary for amenity purposes – the development is itself an amenity, and given its shoreline location no requirement for a contribution for surface water disposal.

I discussed the issue of water supply contributions with John Draper: there is a significant requirement, imposed by condition, to provide local water supply infrastructure; the usage of water supply will be metered; the likely usage of water by boats, having regard to average berthing occupancy and the non-use by motor boats/day-sailing boats etc, will be relatively insignificant.

Development contributions are not deemed to be appropriate.

Permission is recommended subject to all attached conditions.

Kevin Irwin

Conclusion

Grant Application

Conditions/Reasons

No.	Condition	Reason
1	The proposed development shall be carried out in accordance with plans and particulars lodged with the Planning Authority on 03/12/2013 and as amended by way of significant additional information submitted and received on the 04/06/2013 save where amended	In the interests of clarity.

	by the terms and conditions herein.	
2	Archaeological Monitoring and specific site scrutinisation. All dredging and dumping works to be fully archaeologically monitored. Close scrutiny shall be given to particular areas where potential cultural material may be located, in particular: • Area where borehole BH15 was investigated. • The Cove where anomalies M3-M5 are located and that may represent a linear feature. • Inner harbour where anomalies 15-20 are located and may represent buried cultural material or artefacts. • Abbey Strand where the remnant of the red brick was recovered. A suitably qualified archaeologist with underwater archaeological experience and experience in marine dredging works to carry out all archaeological works. It is advised that a dive and detection licence be in place, in tandem with the excavation/monitoring licence to ensure that if potential archaeology is impacted during the course of the work and dive inspection becomes necessary, there is no delay in undertaking such an inspection. The monitoring archaeologist shall have the power to have dredging works suspended should potential cultural material be impacted and works in the immediate area shall remain in suspension until the area has been archaeologically inspected/investigated. A detailed method statement shall accompany the monitoring licence application, and it shall include a finds retrieval strategy that incorporates spreading and metal	In the intrests of the propoer planning and sustainble development of the area

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6	The developer shall provide, at his/her own expense, a 110mm watermain from the public watermain at the Rope Walk (L-4715) to connect to the existing watermain at the Abbey to the satisfaction of the Planning Authority.	To ensure satisfactory water supply to serve the development.
7	Any damage caused to the nearby public road by construction traffic during development works shall be made good by the Council at the expense of the developer.	In the interests of road safety.
8	The developer shall carry out a survey of the condition of the public road network which will be used as a haulage route for deliveries to the site and any culverts which run under the public roads along that route. The extent of the route to be surveyed shall be agreed with the Planning Authority, prior to the carrying out of the survey. Any damage caused to these culverts during the construction phase shall be repaired immediately by the developer to the satisfaction of the Council.	To protect the local infrastructure.
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	any locations where works are being carried out on the public road shall be signed with advance warning signs in accordance with 'Guidance for the Control and Management of Traffic at Roadworks'.	
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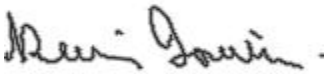

Kevin Irwin
17/07/2013

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork ◡ Tralee ◡ Limerick ◡ London

Park House | Mahon Technology Park | Bessboro Road | Blackrock | Cork | Ireland
T 021 4536400 | F 021 4536450 | Email: info@mwp.ie | Web: www.mwp.ie

Ref: **MOS/16341**

29th March 2016

Mr. Kevin Irwin

Planning Department

Cork County Council

Norton House, Skibereen,

Co. Cork.

Re: Bantry Inner Harbour Development Phase 1

Dear Kevin,

In accordance with Articles 6 and 7 of the Waste Management (Licensing) Regulations 2004, and as per the Third and Fourth Schedules of the Waste Management Act 1996, as amended, we hereby wish to notify the planning department, that the Port of Cork Company are making an application to the EPA for a Waste Licence for the Stabilisation/Solidification of the contaminated marine sediments and recovery of treated sediments for beneficial reuse within the Bantry Inner Harbour Development Phase 1 area.

The nature of the Bantry Inner Harbour Development Phase 1 works will comprise; the refurbishment of the existing town pier; the construction of a length of quayside; the construction of an amenity area and the installation of marina and breakwater type pontoons; the protection of the proposed amenity area using a rock armour revetment and geotextile linings; dredging of an area of the inner harbour to a depth of between -3m and -4m Chart Datum; the reuse of dredge material as fill within the proposed structures; the stabilisation/solidification treatment of fine grained dredged marine sediments and recovery of the treated sediments for beneficial reuse in creating an amenity area, backfilling the town pier extension and creating a new quayside carpark area within the Bantry Inner Harbour Development Phase 1 works area.

Dredged material will be temporarily stockpiled within the development areas prior to placement and in-situ stabilisation/solidification using specialist attachment(s) to tracked excavator plant. The management of dredge spoil material and its reuse as fill comprise the waste activity at the relevant locations. Approximately 45,000m3 of potentially contaminated and clean dredge spoil material will be managed as part of the works.

The classes of activity and nature of the Waste Licence, in accordance with the Third Schedule or Fourth Schedule to the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011, are as follows:

R 5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

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R11 Use of waste obtained from any of the operations numbered R 1 to R 10.

R13 Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)".

A copy of the Waste Licence Application, the EIS, and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be inspected on the Agency's website or inspected at or obtained from the headquarters of the Environmental Protection Agency

Environmental Protection Agency,
Johnstown Castle Estate,
County Wexford.

It will also be available to view at the following location:

Port of Cork Company,
Custom House Building,
Cork

(Viewing hours 9.00am to 4.00pm Monday to Friday, excluding public holidays).

Yours sincerely,

Michael O'Shea

For Malachy Walsh and Partners

c.c.

Attachment B.6.1

Newspaper Advertisement & Site Notices for Waste Licence Application

This attachment contains the text of the site notice and the newspaper notice (the complete newspaper in which the site notice was placed in the case of the original waste licence review application and a copy of the newspaper page containing the notice in the case of copies of the review application).

The location of the site notices on site are shown on 16341-7003 Site Location incl. Overground Services, see Attachment B.2. One site notice is located on the Town Pier and one located on Railway Pier.

Historian and 'Irish Examiner' contributor **T Ryle Dwyer** fondly remembers his mother Margaret, who had a long and eventful life

Memories of my mother

ALTHOUGH born and reared in the United States, Margaret Dwyer settled in Ireland with her two young sons in 1948. She felt Tralee would be an ideal place to raise the two boys on her own, especially as her American war widow's pension amounted to three times the Irish average industrial wage at the time.

It is common now for people to migrate here from other countries, but in 1948 nearly all the migration was in the other direction. Thus she became a phenomenon and, as such, was introduced to Éamon de Valera and Seán Lemass.

As a youngster I noticed at the end of any war movie, as the men would be coming home, my mother would inevitably have tears in her eyes. It is always disconcerting for a child to see a parent crying, so my brother and I learned not talk about the war, or ask about our father. Hence it was not until much later that I learned much about him.

In January 1996 while covering the opening of the State Papers for the *Irish Examiner*, I wrote about the disastrous Allied raid on Dieppe in August 1942. It involved some 6,000 Allied troops — 5,000 of whom were Canadians. The German Legation in Dublin had warned Germany that troops were massing on the east coast of England for a landing on the continent, but the British were reading the German reports from Dublin.

"The Allies sacrificed the men at Dieppe in order to protect the greatest secret of the war — the fact that they had broken most of the German codes," I concluded.

"If the landing had been called off, the Germans might have become suspicious about the security of their messages."

I found my mother crying over what I had written. I knew she had been an overseas telephone operator in New York, and she told me that she had put up calls to Ottawa from distraught Canadian forces in Britain about their men being slaughtered at Dieppe. She thought at the time this was part of a massive Allied invasion of Europe — in effect, what would become D-Day almost two years later. She thought it had gone horribly wrong, but she could tell nobody.

For days she was upset at the news, and my grandmother kept asking her what was wrong, but she would not say. My grandmother possibly thought it had something to do with the fact that my mother was engaged to marry my father on the other side of the country the following month.

My mother told me that she had never talked to anyone about the calls to Ottawa until that night more than 53 years later. She also told me that she had talked to US president Franklin D Roosevelt and UK prime minister Winston Churchill in setting up telephone calls that she had to monitor.

The Germans could have been listening in too, so the two leaders were very circumspect in their conversation. The operator, my mother, had to listen in to give the caller time credit for anything that had to be repeated due to atmospheric conditions.

My parents got married in Seattle, Washington, on September 21, 1942. It was a tiny wedding consisting of just five people in total, — the bride and groom, two of my father's fellow officers as witnesses, and the Catholic chaplain, who performed the ceremony in the large Seattle cathedral.

Afterwards they spent the wedding night in the Olympic Hotel, where Bob Hope and Frances Langford were staying before setting off next day for Alaska at part of a United Services Organisation tour of military bases. As my parents were going up to their room, they shared an elevator with Hope and Langford.

Langford's signature song was her great hit 'I'm in the Mood for Love'. In his memoirs, Bob Hope noted that the biggest laugh he ever heard was at one of their military concerts when Langford began signing, "I'm in the mood for love..."

A soldier in the audience jumped up and shouted, "You've come to the right place, honey!"

One can imagine the banter with Hope and Langford on the elevator, but all my mother would say was that Bob Hope was very funny in the lift.

Most of what I learned about my parents' relationship was as a result of writing my book, *Across the Waves*, which relied heavily on their wartime correspondence. The first letter that my father received from my mother while he was at the front in France in 1944 informed him that she was pregnant again. He wrote back to her on the back of the letter and followed this practice with all of her letters.

"I am writing these on your letters so that we can save them for Ryle to know what we were doing and thinking during these unusual days," he wrote. "I think some of them will give him something to think about. Don't you?"

He had fought across France and invaded Germany in November 1944 with the 90th Division of the US Army, but it was withdrawn to Belgium during the Battle of the Bulge in December 1944. On January 30, 1945, he wrote his last letter from Luxembourg, mentioning that they were about to go back to Germany.

"We are almost ready now to finish up this war," he concluded before signing off.

Next day his regiment crossed the Our river into Germany, where he was killed within a matter of hours.

While writing *Across the Waves* I learnt that my mother shared a desk for three of her four years in high school in New York with a girl named Judy Tuvim. They sat two to a desk. My mother graduated at 17 while Judy was three years younger than her, but she was a brilliant student with a photographic memory, the very antithesis of the characters she later portrayed as an actress.

Judy became famous as an actress under the stage name of Judy Holliday. In 1951 she won the Oscar for the Best Actress for her role as Billie Dawn, the dumb blonde bimbo in the movie *Born Yesterday*. She also won a Tony award for a similar role on stage as Ella Peterson in the Broadway hit musical *Bells are Ringing* in 1957. Her brilliant career was tragically cut short when she died of cancer in 1965.

As my brother and I went into secondary school my mother became very involved in the Rose of Tralee Festival and the promotion of tourism in Tralee. She became the festival's first lady president and interacted with Jack Lynch, Liam Cosgrave, Garret FitzGerald, Charles Haughey, and Albert Reynolds.

Margaret Dwyer obviously made a big impression, because some businessmen headhunted her to work as catering manager on the set of *Playboy of Western World* in Inch, and later as sales manager of the Mount Brandon Hotel, Tralee. She had no experience for either job but they had confidence in her.

She never seemed overawed by anybody.

In August 1974 while leaving a cemetery in Skibbereen with two fellow directors of the Cork-Kerry Tourism company Ivernia, she stopped to speak to somebody.

Her colleagues Florence O'Connor and Arthur J O'Leary walked on a short distance. O'Connor later told me that they both asked each other if she really realised to whom she was speaking.

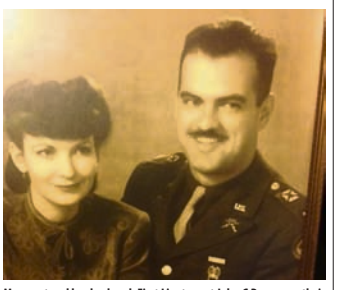
"Oh, thanks be to God, you walked on," she said on rejoining them. "I couldn't introduce you. I know him well, but I can't remember his name."

"Jack Lynch, taoiseach," they told her with a laugh.

He was actually leader of the opposition at the time, but she had met him on several of occasions as taoiseach. She would always have said that was really a testament to Lynch's famed common touch.

Margaret Dwyer with her honorary citizenship of Tralee, which she was presented with to mark her work on the development of the town. Margaret moved to from the US to Ireland in 1948, which saw her introduced to the likes of Éamon de Valera and Seán Lemass.

A passport photograph from 1948 of Margaret Dwyer with her sons, 4 year old Ryle (left) and 3 year old Sean.



Margaret and her husband, First Lieutenant John G Dwyer, on their wedding day.

Margaret Dwyer stands by with Brendan O'Reilly and the 1971 Rose of Tralee, Linda McCravy from Miami. Picture: Dominick Walsh

Irish Cement defers tyre plan

Jimmy Woulfe
Mid-West Correspondent

Plans by Irish Cement to burn used tyres, instead of coke fossil fuel, at its Limerick plant, have been been deferred.

The company wants to switch to dry waste material to save on costs and secure the future of the plant, which employs 80 people, at Mungret, on the outskirts of the city.

The company lodged planning last month. However, this was withdrawn yesterday.

A spokesman said that, in recent days, the company had noted that the planning application had not been made available for public inspection, due to a procedural matter.

The company spokesman said: "We have engaged with Limerick City and County Council to allow this procedural issue to be resolved."

He said the company was fully committed to switching to alternative energy sources to secure the future of the plant, and intended to resume the planning process when the current issue had been resolved.

A spokesman for Irish Cement said it would shortly be lodging a planning application with Limerick City and County Council for the replacement of fossil fuel with alternative fuels and raw materials, to improve the sustainability of their operations.

The Limerick site is Ireland's oldest cement plant, having commenced operations 77 years ago.

The Irish Cement spokesman said: "Its operation has been sustained by continuous investment in new technologies and processes. "

After the recent period of reduced demand, production is, once again, on the increase at home and abroad for cement.

"This fuel-replacement programme will be key to sustaining this growth," said Castlemungret plant manager, Pat Robinson.

"Based on experience in other cement plants, in Ireland and throughout Europe, the opportunity to reduce our dependence on imported fossil fuels will prove critical to our ability to operate competitively, and sustain jobs at Irish Cement Limerick, into the future."

In making cement, the kiln is heated to more than 1,400C, higher than the 1,100C a volcano reaches.

Thousands of tonnes of used tyres will be ferried to the plant, along with shredded plastics, which waste-disposal companies cannot process.

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE

Notice is hereby given that the Port of Cork Company, having its principal offices at Custom House Building, Cork, Co. Cork are making an application to the EPA for a waste licence in relation to the Bantry Inner Harbour Development Phase 1 works at 2 no. locations in Bantry Harbour, Bantry, Co. Cork, being (1) a location adjacent to Town Pier (National Grid Ref: 99027E 48464N, Seafield townland) and (2) a location adjacent to Railway Pier (National Grid Ref: 99012E 48618N , Reenrour West townland).

The nature of the Bantry Inner Harbour Development Phase 1 works will comprise; the refurbishment of the existing town pier; the construction of a length of quayside; the construction of an amenity area and the installation of marina and breakwater type pontoons; the protection of the proposed amenity area using a rock armour revetment and geotextile linings; dredging of an area of the inner harbour to a depth of between -3m and -4m Chart Datum; the reuse of dredge material as fill within the proposed structures; the stabilisation/solidification treatment of fine grained dredged marine sediments and recovery of the treated sediments for beneficial reuse in creating an amenity area, backfilling the town pier extension and creating a new quayside carpark area within the Bantry Inner Harbour Development Phase 1 works area.

Dredged material will be temporarily stockpiled within the development areas prior to placement and in-situ stabilisation/solidification using specialist attachment(s) to tracked excavator plant. The management of dredge spoil material and its reuse as fill comprise the waste activity at the relevant locations. Approximately 45,000m3 of potentially contaminated and clean dredge spoil material will be managed as part of the works. The classes of activity to which this application relates, in accordance with the Fourth Schedule to the Waste Management Acts 1996 to 2011, are as follows:

Fourth Schedule

R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

R 11 Use of waste obtained from any of the operations numbered R 1 to R 10.

R 13 Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

The principal activity will be R5.

An EIS and NIS will be submitted to the EPA to accompany this application. A copy of the waste licence application, the EIS and NIS, and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be available for inspection on the Agency's website and be available for inspection or purchase from the headquarters of the Environmental Protection Agency, Johnstown Castle Estate, County Wexford.

It will also be available to inspect at the principal offices of the Port of Cork Company, Custom House Building, Cork, Co. Cork during normal working hours.

Family avoids injury after bomb fails to explode

Eoin English

A family escaped serious injury after a viable pipe bomb thrown at their home failed to explode.

A number of homes were evacuated in the Mayfield area on the northside of Cork city in the early hours of yesterday after the device was found outside a house in the Shannon Lawn estate.

Gardaí yesterday expressed concerns after the incident, describing the use of a pipe bomb-type device as a serious escalation of a dispute.

Supt Mick Comyns said gardaí are keeping an open mind on the motive for the attack and are following several lines of enquiry. "This is a serious development though. If this device exploded, it had the potential to cause serious injury or worse," he said.

Gardaí were due yesterday to speak to family members who live in the targeted home, while detectives conducted door-to-door enquiries in the estate.

Supt Comyns appealed to anyone who saw anyone or anything suspicious in the Shannon Lawn area between midnight on St Patrick's Day and 4am yesterday to contact gardaí at Mayfield. The alarm was raised around 3.30am and when gardaí arrived at the scene, they found the improvised explosive device on ground to the front of the house.

The family reported hearing a noise or a bang outside their home about 90 minutes earlier which leads detectives to believe the device may have been thrown at the house earlier. About a dozen homes were evacuated and gardaí requested the services of an army bomb disposal team which arrived on scene at 5.12am.

Ordnance officers assessed the suspect device and determined that it was viable. While its fuse had not been lit, the device contained enough explosive material to cause serious injury or death if it had exploded. The device was removed to a secure military location for deconstruction and examination.

Items of evidential nature have been handed over to gardaí for forensic examination. The scene was declared safe at 7.10am and residents were cleared to return home.

Supt Comyns appealed to anyone with information to contact gardaí in confidence on 021 455 8510.

A pipebomb was thrown at 31 Shannon Lawn just after midnight, resulting in the surrounding houses being evacuated.

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE

Notice is hereby given that the Port of Cork Company, having its principal offices at Custom House Building, Cork, Co. Cork are making an application to the EPA for a waste licence in relation to the Bantry Inner Harbour Development Phase 1 works at this location, adjacent to Town Pier, at Bantry Harbour, Bantry, Co. Cork.

The nature of the Bantry Inner Harbour Development Phase 1 works will comprise; the refurbishment of the existing town pier; the construction of a length of quayside; the construction of an amenity area and the installation of marina and breakwater type pontoons; the protection of the proposed amenity area using a rock armour revetment and geotextile linings; dredging of an area of the inner harbour to a depth of between -3m and -4m Chart Datum; the reuse of dredge material as fill within the proposed structures; the stabilisation/solidification treatment of fine grained dredged marine sediments and recovery of the treated sediments for beneficial reuse in creating an amenity area, backfilling the town pier extension and creating a new quayside carpark area within the Bantry Inner Harbour Development Phase 1 works area.

Dredged material will be temporarily stockpiled within the development areas prior to placement and in-situ stabilisation/solidification using specialist attachment(s) to tracked excavator plant. The management of dredge spoil material and its reuse as fill comprise the waste activity at the relevant locations. Approximately 45,000m^3 of potentially contaminated and clean dredge spoil material will be managed as part of the works. The classes of activity to which this application relates, in accordance with the Fourth Schedule to the Waste Management Acts 1996 to 2011, are as follows

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The principal activity will be R5.

An EIS and NIS will be submitted to the EPA to accompany this application. A copy of the waste licence application, the EIS and NIS, and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be available for inspection on the Agency's website and be available for inspection or purchase from the headquarters of the Environmental Protection Agency, Johnstown Castle Estate, County Wexford.

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APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE

Notice is hereby given that the Port of Cork Company, having its principal offices at Custom House Building, Cork, Co. Cork are making an application to the EPA for a waste licence in relation to the Bantry Inner Harbour Development Phase 1 works at this location, adjacent to Railway Pier, at Bantry Harbour, Bantry, Co. Cork.

The nature of the Bantry Inner Harbour Development Phase 1 works will comprise; the refurbishment of the existing town pier; the construction of a length of quayside; the construction of an amenity area and the installation of marina and breakwater type pontoons; the protection of the proposed amenity area using a rock armour revetment and geotextile linings; dredging of an area of the inner harbour to a depth of between -3m and -4m Chart Datum; the reuse of dredge material as fill within the proposed structures; the stabilisation/solidification treatment of fine grained dredged marine sediments and recovery of the treated sediments for beneficial reuse in creating an amenity area, backfilling the town pier extension and creating a new quayside carpark area within the Bantry Inner Harbour Development Phase 1 works area.

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It will also be available to inspect at the principal offices of the Port of Cork Company, Custom House Building, Cork, Co. Cork during normal working hours.

Attachment *B.7 Type of Waste Activity*

In accordance with the Third Schedule or Fourth Schedule to the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011, it is proposed to carry out the following classes of activity at the facility:

Waste Recovery Operations, in accordance with the Fourth Schedule of the Waste Management Act 1996 as amended

TABLE B-1 WASTE HIERARCHY

R5	**Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.** Stabilisation/Solidification of all finer grained dredge material using ordinary Portland cement for use as engineered backfill. This process will also immobilise any contamination and retard it leachability from the re-used sediments..
R11	**Use of waste obtained from any of the operations numbered R 1 to R 10.** Placement of Stabilised/solidified dredge material as per R5 into structures as engineered fill
R13	**Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)".** Placement of dredge material into transport barge and treatment cells prior to treatment as described in R5 above.

R5 is the principal activity.

Attachment C

Attachment C.1 Technical Competence and Site Management

Site Management Staff

Port of Cork Company (Applicant)

Henry Kingston, Senior Engineer, Port of Cork Company. (Class 1 Marine Engineer / Lead Auditor OHSAS 18001 & 14001)

Tim Murphy, Project and Development Engineer, Port of Cork Company. (B E Civil Engineering)

JoAnn Salmon, Safety and Systems Manager, Port of Cork Company. (B E Civil Engineering)

Finbarr Kearney, Environmental Officer, Port of Cork Company. (Lead Auditor ISO14001)

Resident Engineer, Port of Cork Company (to be appointed)

Malachy Walsh & Partners (Employers Representative during Construction)

Dr. Michael O'Shea, Malachy Walsh, Consulting Engineer. (B. Eng, M Eng Sc, PhD. C. ENG MIEI)

BAM (Building Contractors)

Seamus O'Sullivan, BAM, Project Engineer. (B Eng - Civil Engineering)

Brian Abbott, Company Environmental Coordinator (BA (Hons) Environmental Science)

Alan Mullins, Site Health, Safety & Environmental Officer – B Sc. Health & Safety

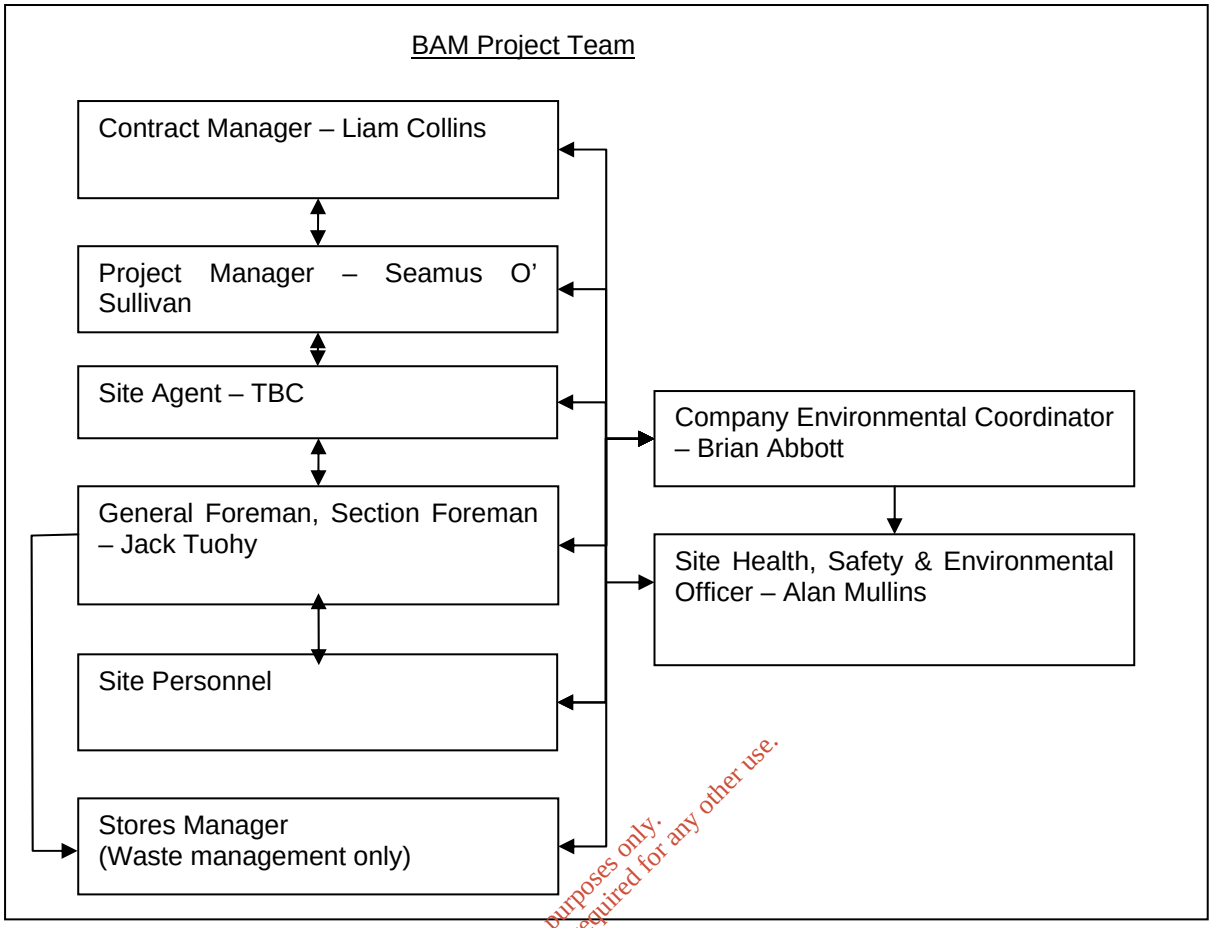


FIGURE C-1 BAM PROJECT TEAM

The dredge treatment operation will be approved by the EPA and will be carried out according to the licence issued by the EPA.

The works will be carried out by BAM Civil under the on-site supervision of Seamus O'Sullivan, Project Engineer, BAM.

The process will be overseen on behalf of the Port of Cork Company by the Resident Engineer who will be on site for the duration of the process. He / she will report directly to the Port of Cork Company Project and Development Engineer and the Senior Engineer and he / she will also report to Malachy Walsh Consulting Engineers representative.

The site will be visited frequently during the processing period by the Port of Cork Project and Development Engineer and Senior Engineer as well as Malachy Walsh's Engineer responsible to ensure compliance with the Licence.

Environmental site audits will be carried out throughout the project and particularly during the commencement and period of dredge material processing by Port of Cork Systems and Environmental staff.

The Port of Cork Environmental Management System ISO 14001 is certified under BS EN ISO 14001:2004. The current certificate, copy attached, is valid until 14th August 2017.

The certification is reviewed annually by Bureau Veritas, with an intermediate audit due in August 2016 and a renewal audit due in August 2017. This is submitted as an evidence of the Port's current system of compliance with Environmental requirements and best practice

and as an example of the future operational compliance which will be adopted during the Bantry project to ensure compliance with all statutory licenses which will pertain to this project.

The Port of Cork is also certified under the International Code for the International Port Safety and Environmental Protection Management (IPSEM) Code. This is a referenced document in the ISO 143001 Environmental Management System and details all approved operational procedures for the Port as well as documenting a change management procedure. The current certification of compliance is valid until 4th November 2020, subject to annual verification by an external third party (Bureau Veritas). A copy of the current certificate is attached.

Bam Ltd are certified under ISO 14001 and their systems will ensure that their CMP and the works will be compliant with the EPA Licence as well as being contractually obliged to do so under the client's requirements in this contract.

IPSEM Code

CERTIFICATE of COMPLIANCE

N°. LDR0 /2015/ 0001/IPSEM

Issued under the provisions of Bureau Veritas International Code for the Port Safety and Environmental Protection Management to :

PORT of CORK

THIS IS TO CERTIFY that the Quality, Safety and Environmental Protection Management System of the Port has been audited and that it complies with the requirements of the Bureau Veritas International Code for the Port Safety and Environmental Protection Management (IPSEM) Code.
This Certificate is issued in respect of Operations and Maintenance for the :

City Quays, Tivoli Container Terminal, Ringaskiddy Ro- Ro Terminal, Sean Lemass Ringaskiddy Deepwater Terminal, Cobh Cruise Terminal Pilot Launch, Tug, VTMIS and Multi-Cat Operations

This certificate of compliance is valid until 4th November 2020, subject to periodical verification.

Issued at Newcastle on the 26TH of November 2015

BUREAU VERITAS

BUREAU VERITAS
PHILLIP ROBSON
SSOM/CSOM

BUREAU VERITAS
Certification

PORT OF CORK COMPANY

CUSTOM HOUSE
CUSTOM HOUSE STREET
CORK
IRELAND

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

Standards

BS EN ISO 14001:2004

Scope of certification

THE SERVICES PROVIDED AND ACTIVITIES UNDERTAKEN BY THE PORT OF CORK COMPANY IN RESPECT OF THE OPERATIONS AT CITY QUAYS, TIVOLI INDUSTRIAL AND DOCK ESTATE, RINGASKIDDY DEEPWATER BERTH & FERRY TERMINAL AND COBH CRUISE LINER TERMINAL.

Certification cycle start date:	**15 AUGUST 2014**
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	**14 AUGUST 2017**
Original certification date:	**17 AUGUST 2012**
Version 1, Revision date:	**15 AUGUST 2014**

Certificate No. UK9000016

Ken Smith
Managing Director

UKAS MANAGEMENT SYSTEMS
008

Certification body address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.
Local office: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

To check this certificate validity please call: +44 (0) 207 550 8998

Attachment C.2 Environmental Management System

The client, Port of Cork Company and the contractor BAM are certified under ISO 14001 Environmental Management System.

This is an externally audited system which ensures that the company practices are carried out in compliance with the standards as set out in the system. A key requirement of the standard is regulatory compliance and an obligation to carry out all works in accordance with Environmental legislation and any licenses that apply. In t is case the EPA license will form part of the 'Legal and Other Requirements' within the ISO system and both companies will thereby commit to following the terms of the license.

Attachment C.3 Hours of Operation

a) Proposed hours of operation.

The hours of operation/construction will be limited to 8am to 6pm weekdays with Saturday working from 8am to 1pm.

(b) Proposed hours of waste acceptance/handling.

Dredged material will be deposited and treated during the operating hours noted between November 2016 to March 2017

(c) Proposed hours of construction and development works at the facility and timeframes.

Dredging operations will be undertaken during a windows from start of November 2016 to end March 2017 and from November 2017 to March 2018 if necessary.

(**d) Any other relevant hours of operation expected**

No

Please see Appendix 2 - Attachment C for the project programme.

The programme is indicative of undertaking all the dredging and treatment within the first dredge window November 2016 to March 2017. If this is not achieved due to delayed start of dredging for example, then the programme be altered to reflect this situation..

Attachment D

Attachment D.1 Infrastructure

D.1.a Site security arrangements including gates and fencing

Bam will fence off the site using hoarding and herras fencing and there will be a site entrance to the new Quayside reclamation area which will have a secure gated entrance that will be locked each evening. There will be another site entrance to the new amenity area which will also have a secure gated entrance which will be locked every evening. Bam will also have a site compound which will be located on the existing town pier and a herras fence will be erected around the compound and this will have a secure access/egress point. All works areas will be appropriately segregated from the pier users and members of the public. During the dredging operation all plant involved in the dredging will be located within the site confines. All dredged spoil will be transported to its destination by sea using floating plant.

All marine plant will be moored at a location agreed with the Harbour Master and will be accessed using boats which will carry the operators to and from shore.

D.1.b Designs for site roads

Not Applicable

D.1.c Design of hard-standing areas

The two principal areas where hard standings will be required are the temporary causeway to enable the construction of the new quayside area and also the rock revetment core to enable the construction of the new amenity area.

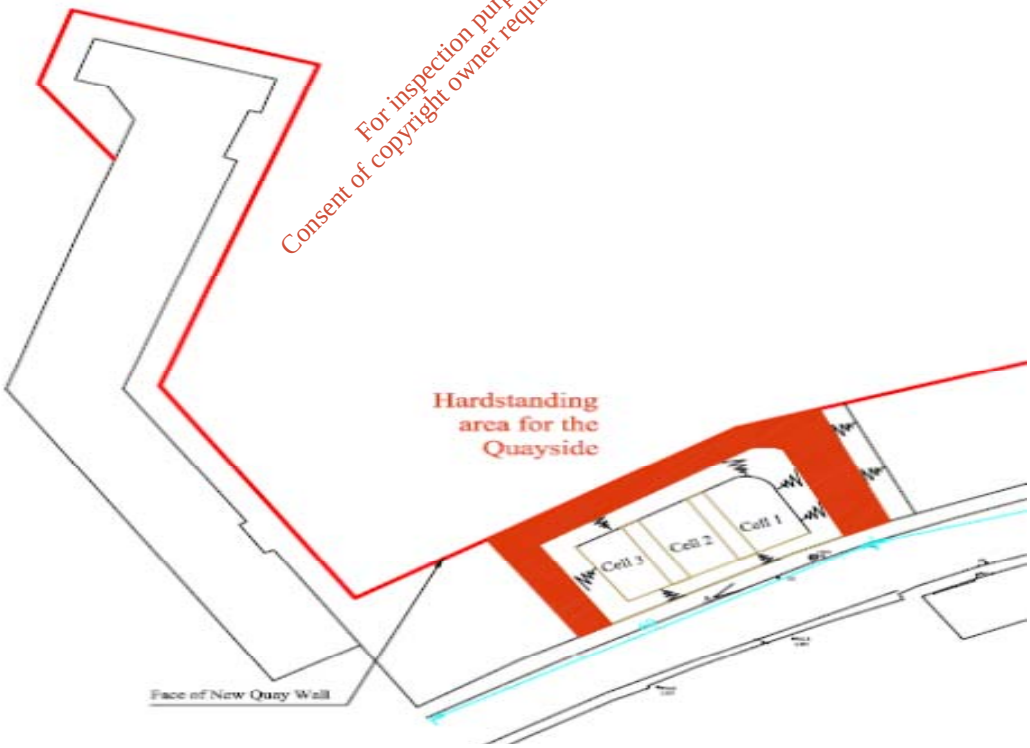


Figure D-1 Sketch showing hardstanding area at the Quayside

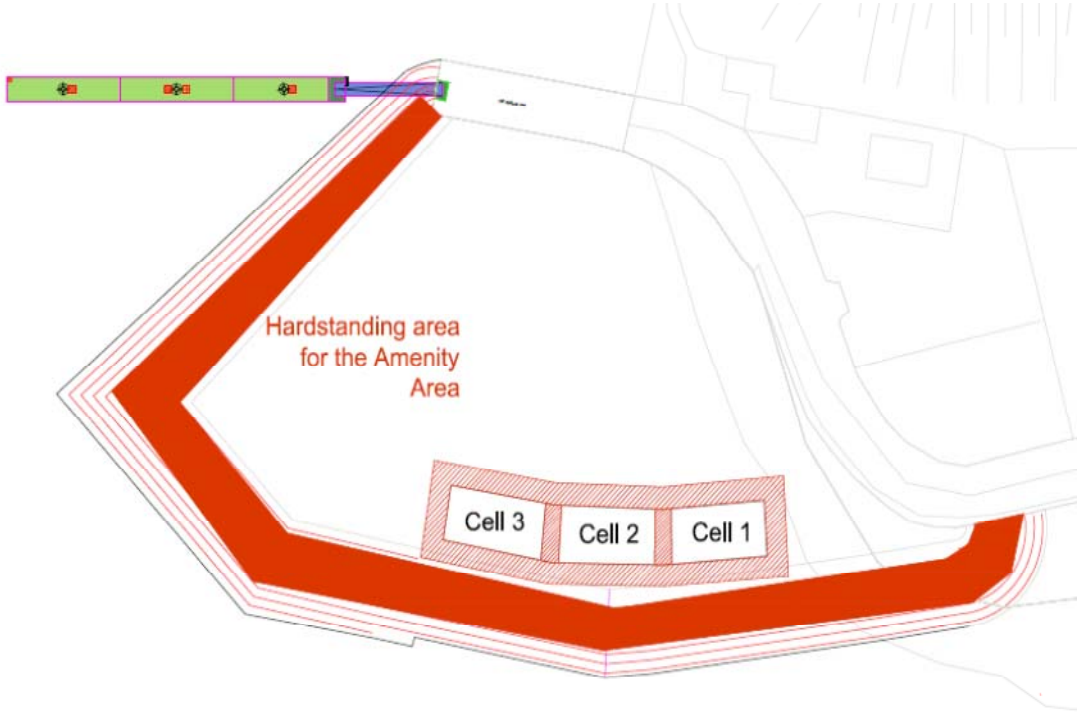


FIGURE D-2 SKETCH SHOWING HARDSTANDING AREA AT THE AMENITY AREA

The hard standing areas will be constructed of quarry run rock material and will be lined with geotextiles and anti-erosion geogrids to prevent any erosion of the hard standing areas. The hard standing will be compacted during their construction and CBRs will be carried out to verify their suitability to support the heavy plant that will traffic them during the construction works.

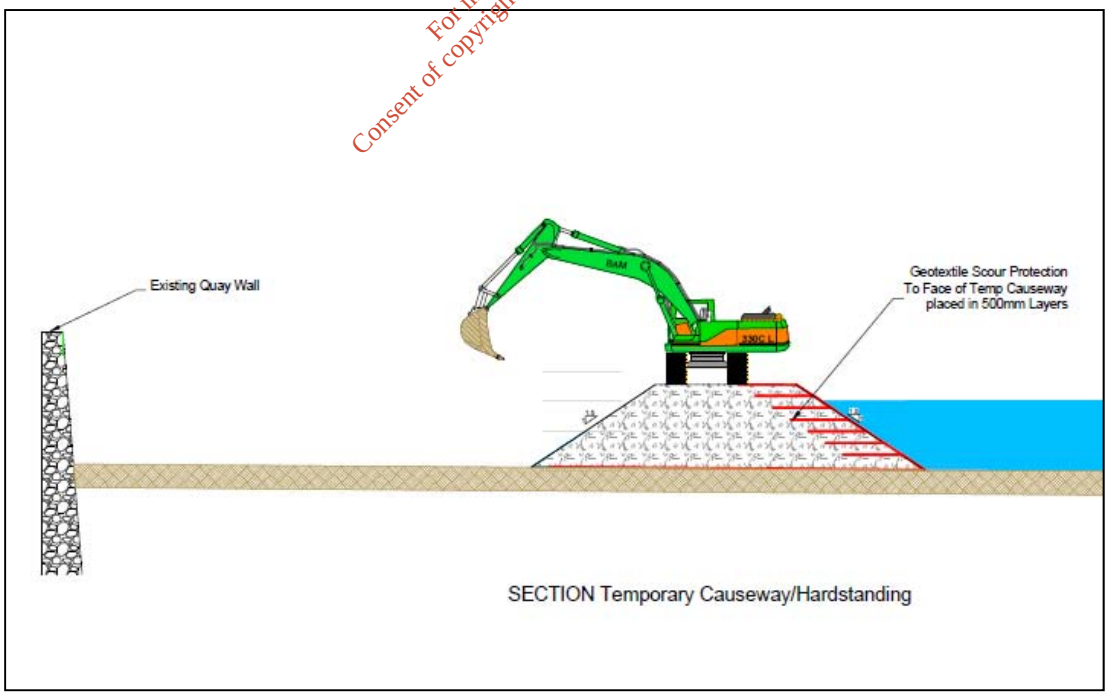


FIGURE D-3 TEMPORARY CAUSEWAY FOR THE QUAYSIDE RECLAMATION

D.1.d Plant

The main plant involved in the dredging operation will be as follows:

- ACN 5 Floating Barge, Figure D-4
- 2 No dump/transfer barges
- 2 No workboats
- 1 Safety boat
- 2 No longreach excavators
- 1 No Allu mixer and feeder
- Cement silos
- 1 Site dumper

FIGURE D-4 ACN5 WITH A LONG REACH EXCAVATOR

D.1.e Wheel-wash

All dredged spoil is to remain on site and will only be transported by sea, any plant involved in the land based activities such as the long reach excavator, the Allu mixer and power feeder and the cement delivery trucks will be cleaned using a power washer prior to leaving the site. A designated wheel wash area will be provided at the quayside area and at the amenity area. The wheel wash runoff will be directed into a designated settlement lagoon. As the vehicles will remain within the site confines for the entirety of the works, no hydrocarbon build up is expected in the wheel wash. Once the run off has settled the silt will be stabilised and used as fill in either the amenity area or the quayside. The clean water from the wheel wash will be allowed to permeate through the amenity area or quayside area.

FIGURE D-5 WHEEL WASH

D.1.f Laboratory facilities

Slump testing will be carried out on the stabilised material to verify and record that the material is no longer viscous or running. The stabilised material will be unloaded and deposited cell by cell. At least 5 slump tests will be carried out per cell. The slump testing will be carried out adjacent to the cells where the material has been treated.

The automatic sampling buoys will be in place along with daily water sampling taking place. The water samples will be stored in a refrigerator in the site compound and will be collected and tested as required. The storage vessels and the optimum storage conditions will be agreed with the testing laboratory prior to the works commencing.

D.1.g Design and location of fuel storage areas

Large volumes of fuel required for the larger items of plant will not be stored on site so as to eliminate the risk of fuel spillages. All large items of plant on site will be fuelled every second day by a delivery truck which will visit the site. The re-fuelling of the marine plant which will be involved in the dredging operation will take place at the head of the existing pier. Drip trays and spill kits will be provided with all machines so as to avoid any fuel run off.

The small tools and small items of plant such as pumps, generators etc will require more regular refuelling. The small quantities of fuel required for these items will be stored in an on-site hazardous chemicals stores, which will be in double bunded tanks only.

FIGURE D-6 TYPICAL BUNDED FUEL STORAGE AREA

D.1.h Waste quarantine areas

In the event of irregular or unexpected waste such as debris from fishing boats or items which have fallen off the existing pier arising from the dredging operation they will be separated at source by the excavator which is carrying out the dredging. The waste will be removed from the dump barge and will be stored in a general waste skip which will be placed on the ACN 5 barge. This skip will allow the waste to be kept completely separate and will allow it to be inspected and dealt with through removal offsite using an approved, fully permitted waste disposal contractor.

FIGURE D-7 TYPICAL WASTE SKIP WHICH WILL BE USED TO QUARANTINE ANY WASTE

D.1.i Waste inspection areas

As stated above in section D.1.h a waste skip will be located on the ACN 5 barge so as to allow any unexpected waste arising from the dredging to be separated and quarantined at source prior to it being brought to the unloading area adjacent to the quayside or the amenity area. This skip will also act as the waste inspection area where the waste can be examined and disposed of using an approved, fully permitted waste disposal contractor.

D.1.jTraffic control

A dedicated Traffic Management Plan (TMP) has been developed for the overall project and in included in Appendix 3 - Attachment D

D.1.k Sewerage and surface water drainage infrastructure

Please see environmental procedure EP-10 Surface Water Control in Appendix 3 - Attachment D.

Sewerage not applicable.

D.1.l All other services

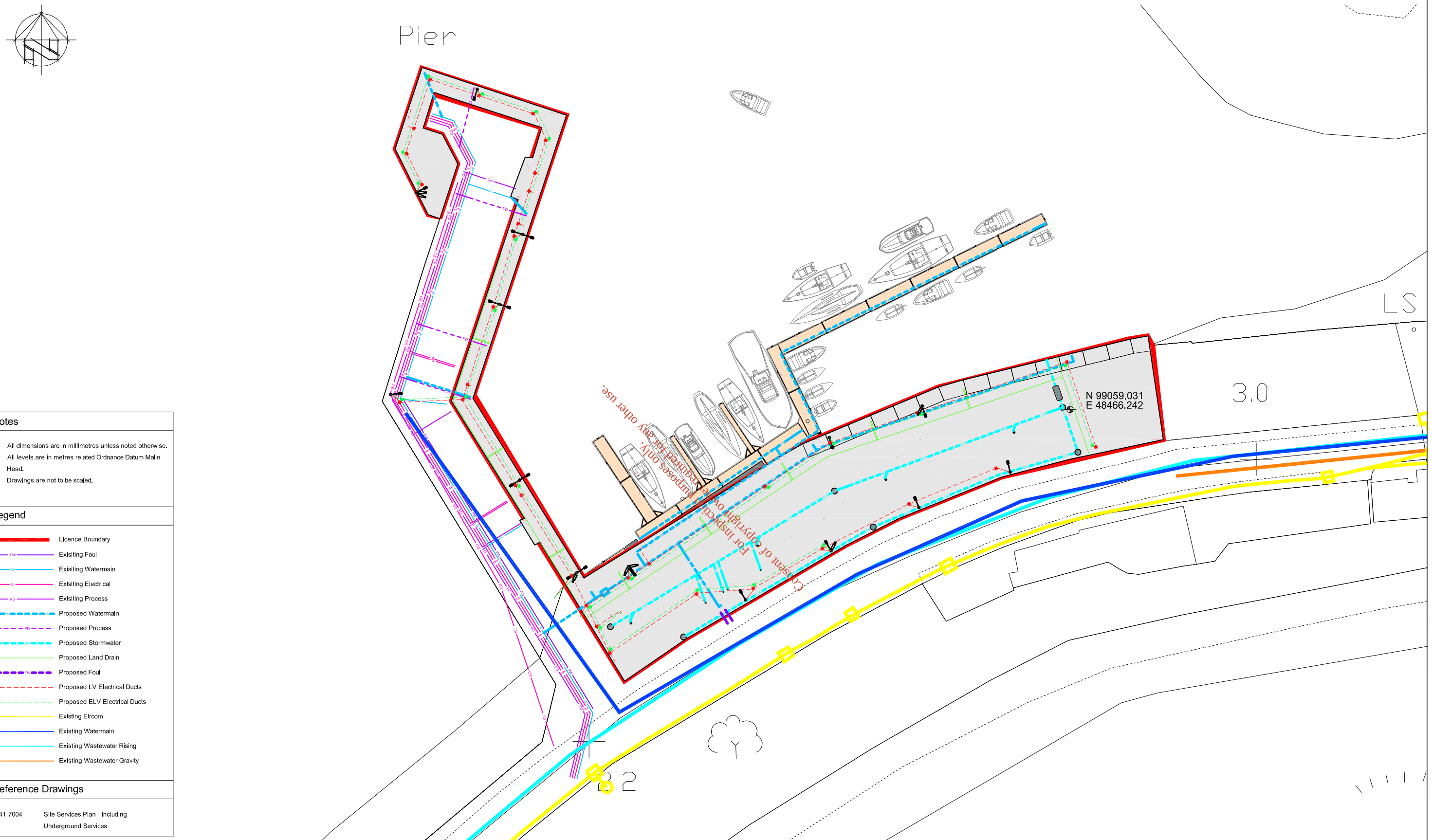
Please see Services drawing 16341-5005

Electrical Supply
During construction, power will be required for certain operations and site lighting. This will be provided by a connection to 35Kva on the Dredging Barge and by 100Kv generators within the site boundary to run powertools. The Site compound will be mains connected. All generators will be diesel fuelled and placed in drip trays.

Lighting
During construction, lighting of temporary working areas and site compounds during periods of darkness maybe required. This will be minimised where possible. Portable lighting units will be used and positioned in such a way as to minimise glare and potential to impact on the local community in particular sensitive visual receptors and ecology of the area. The contractor will be implementing

D.1.m Plant sheds, garages and equipment compound

The main compound area for the project will be located adjacent to the amenity area. The area is a secure, walled and tarred area. The site compound is approximately 600m2 in area.



Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.

Legend

- Licence Boundary
- FW — Exisiting Foul
- W — Exisiting Watermain
- E — Exisiting Electrical
- PD — Exisiting Process
- W — Proposed Watermain
- PD — Proposed Process
- SW — Proposed Stormwater
- Proposed Land Drain
- FW — Proposed Foul
- Proposed LV Electrical Ducts
- Proposed ELV Electrical Ducts
- Existing Eircom
- Existing Watermain
- Existing Wastewater Rising
- Existing Wastewater Gravity

Reference Drawings

16341-7004	Site Services Plan - Including Underground Services

Map Reproduced From Ordnance Survey Ireland
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Licence Number EN 0015716
OSI Sheet No. 6654-B

0 7.5 15
Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: SITE SERVICES PLAN - PIER (INCLUDING UNDERGROUND SERVICES)

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:750	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

Drg. No. 16341-7005

Rev. A

FIGURE D-8 SITE COMPOUND LOCATION

The main servicing and maintenance of the machinery will take place off site, any minor repairs will be carried out by mobile repair companies such as Pirtek or Finnings. In the event of an item of plant or machinery breaking down it will be removed from site and a replacement will be mobilised to site. This will eliminate to need for garages or plant sheds on the project. The plant will be stored on site for the duration of the project and will be locked and secured each night and at the weekends.

D.1.n Site accommodation

The site accommodation will be located in the area highlighted above in section D.1.m, the site accommodation will consist of steel containers ranging from 20ft to 40ft in length. The cabins will have power and also contain heaters. Adequate welfare facilities such as a canteen, drying room and toilets will be provided as part of the site accommodation. A local connection to the existing services such as ESB, water and sewerage will be applied for from Cork County Council and the appropriate service providers. Site accommodation will also be provided on the ACN 5 barge for the operative involved in the dredging and marine based activities, a canteen, toilet and drying room will be provided so as to ensure that the operatives do not have to return to the main compound.

FIGURE D-9 TYPICAL SITE COMPOUND SET UP WHICH WILL BE USED ON THE BANTRY PROJECT

D.1.o A fire control system, including water supply

Apex fire will be employed to ensure that there are adequate fire control measures in place for the site accommodation and facilities. Apex will visit the site once the accommodation has been set up will supply the necessary fire extinguishers, fire blankets etc that will be required to ensure that there is an adequate fire control system in place. All large items of plants such as excavators, barges and workboats will have their own fire extinguishers with them at all times. Regular emergency drill will be carried out to ensure that all operative on site are informed and trained on the correct actions to take in the event of a fire.

There are several water hydrants located on the existing pier, these hydrants will be used in the event of a fire which requires water.

D.1.p Civic amenity facilities

Not Applicable

D.1.q Any other waste recovery infrastructure

Not Applicable

D.1.r Composting infrastructure

Not Applicable

D.1.s Construction and Demolition waste infrastructure

The Proposed activity can be classified as Construction waste and is covered in section D.2. Other wastes generated in the C&D processes are detailed in the Construction Waste Management Plan Appendix 3 - Attachment D.

D.1.t Incineration infrastructure (if applicable).

Not Applicable

D.1.u Any other infrastructure

Not Applicable

Attachment D.2 Facility Operation

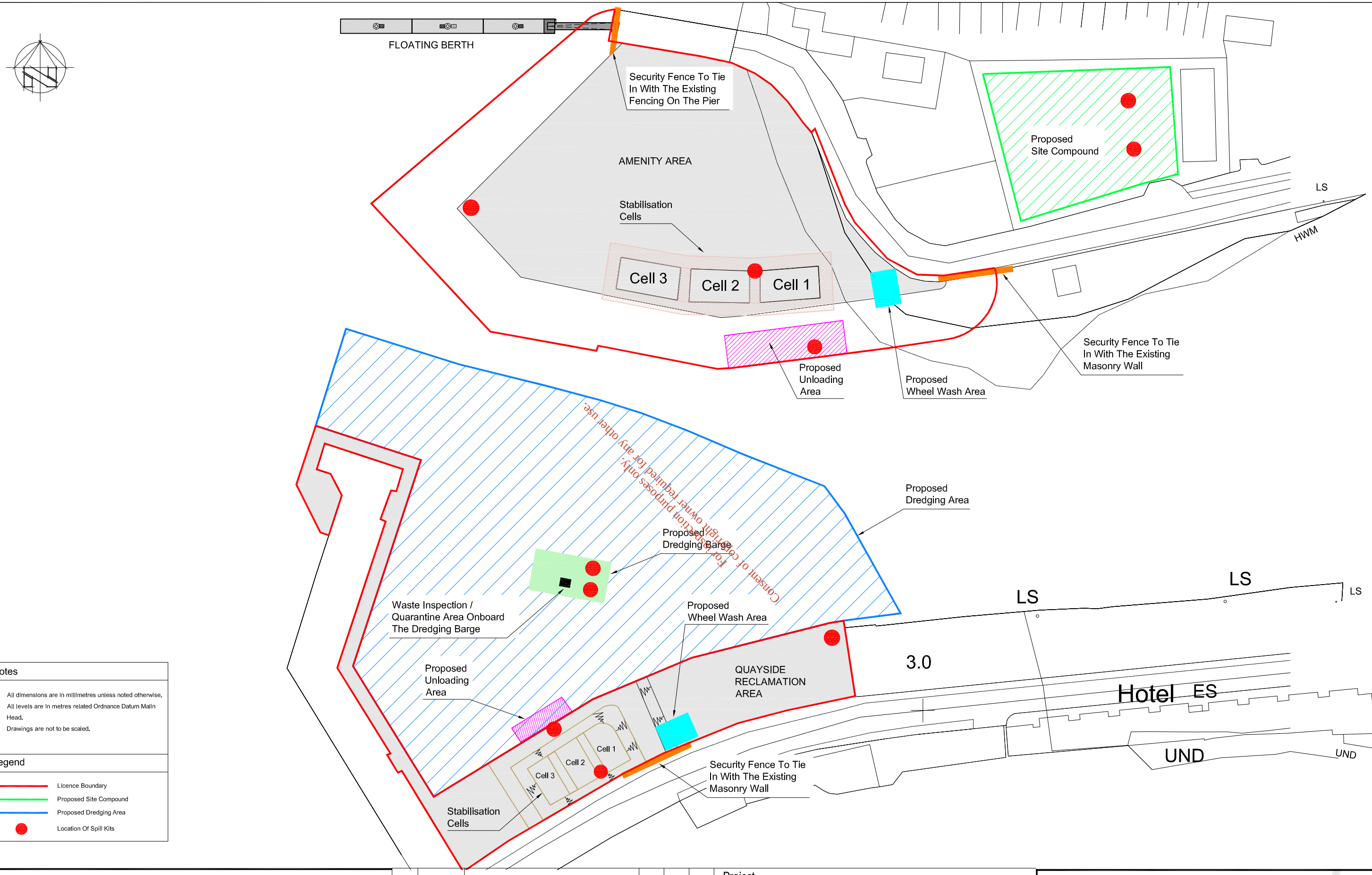
The following drawings are included and referenced in this attachment:

16341 - 7006 Proposed Contractors Site Layout

16341 -7007 Dredge Excavation and Deposition Monitoring Plan

16341 – 7008 Amenity Area Treatment Phasing

16341 – 7009 Quayside Area Treatment Phasing



Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.

Legend

- Licence Boundary
- Proposed Site Compound
- Proposed Dredging Area
- Location Of Spill Kits

0 10 20
Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

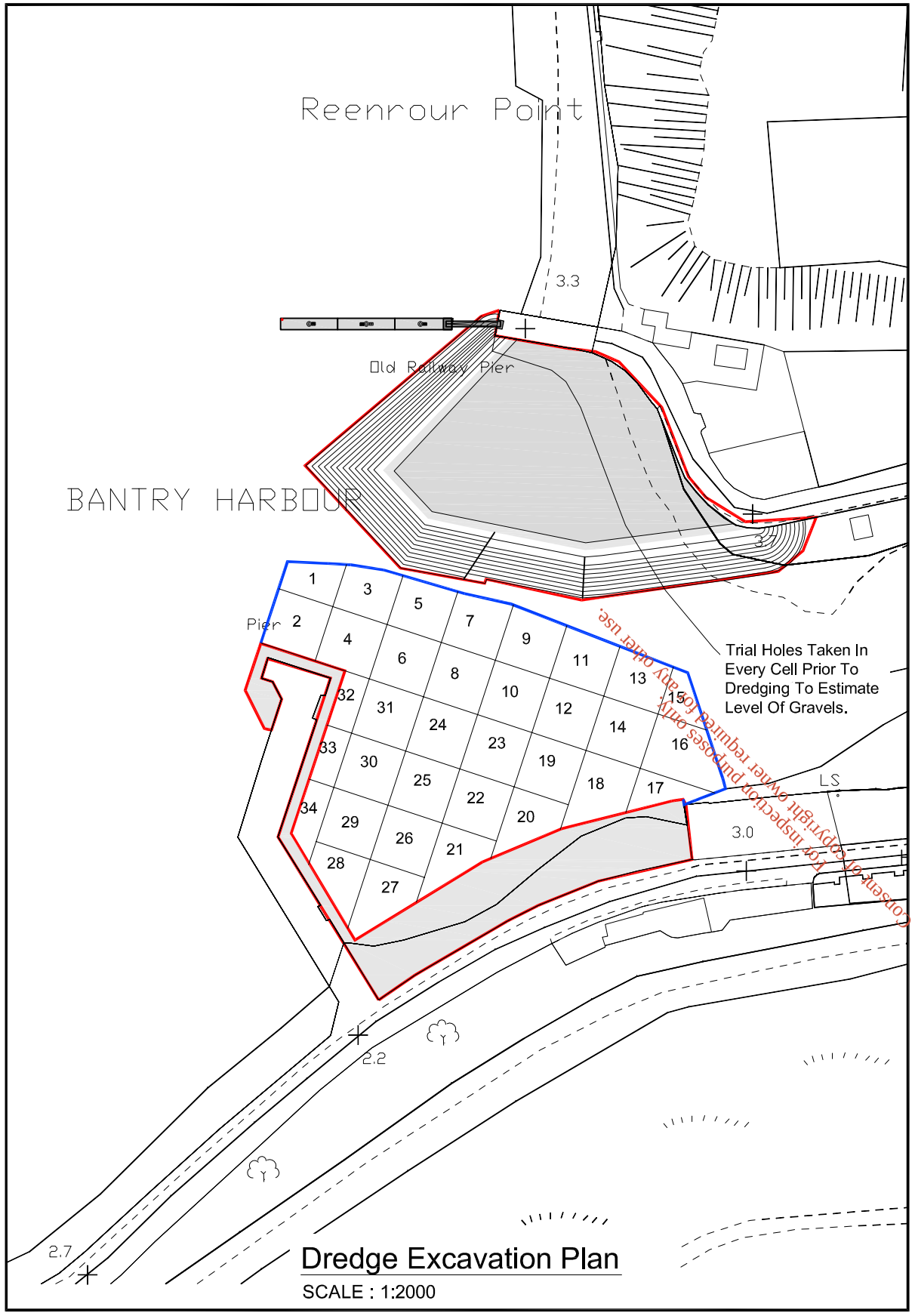
Title: PROPOSED CONTRACTORS SITE LAYOUT

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:1000	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

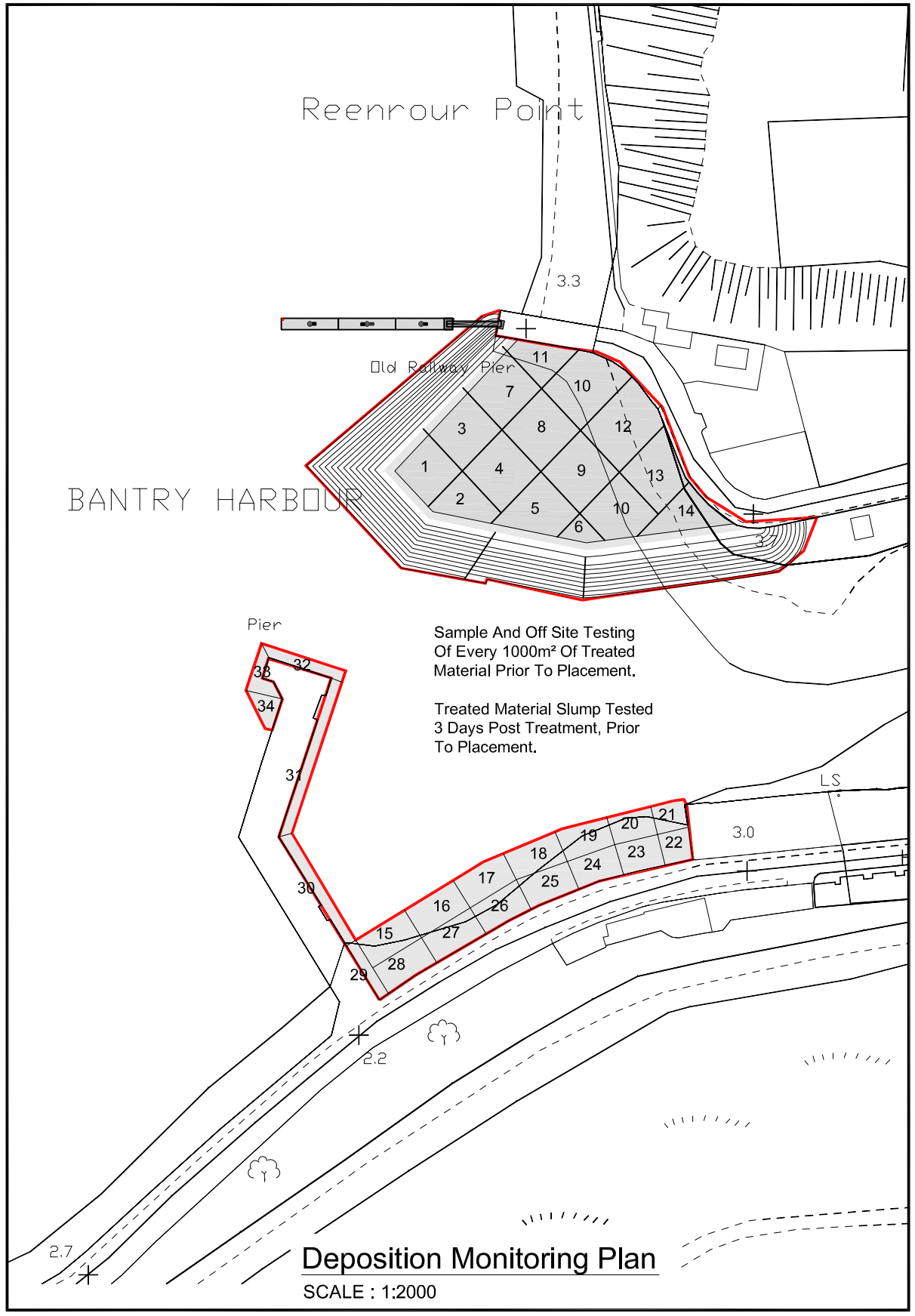
Drg. No. 16341-7006

Rev. A



Dredge Excavation Plan

SCALE : 1:2000



Deposition Monitoring Plan

SCALE : 1:2000

Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.

Legend

Licence Boundary

Dredge Footprint

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: DREDGE EXCAVATION AND DEPOSITION MONITORING PLAN

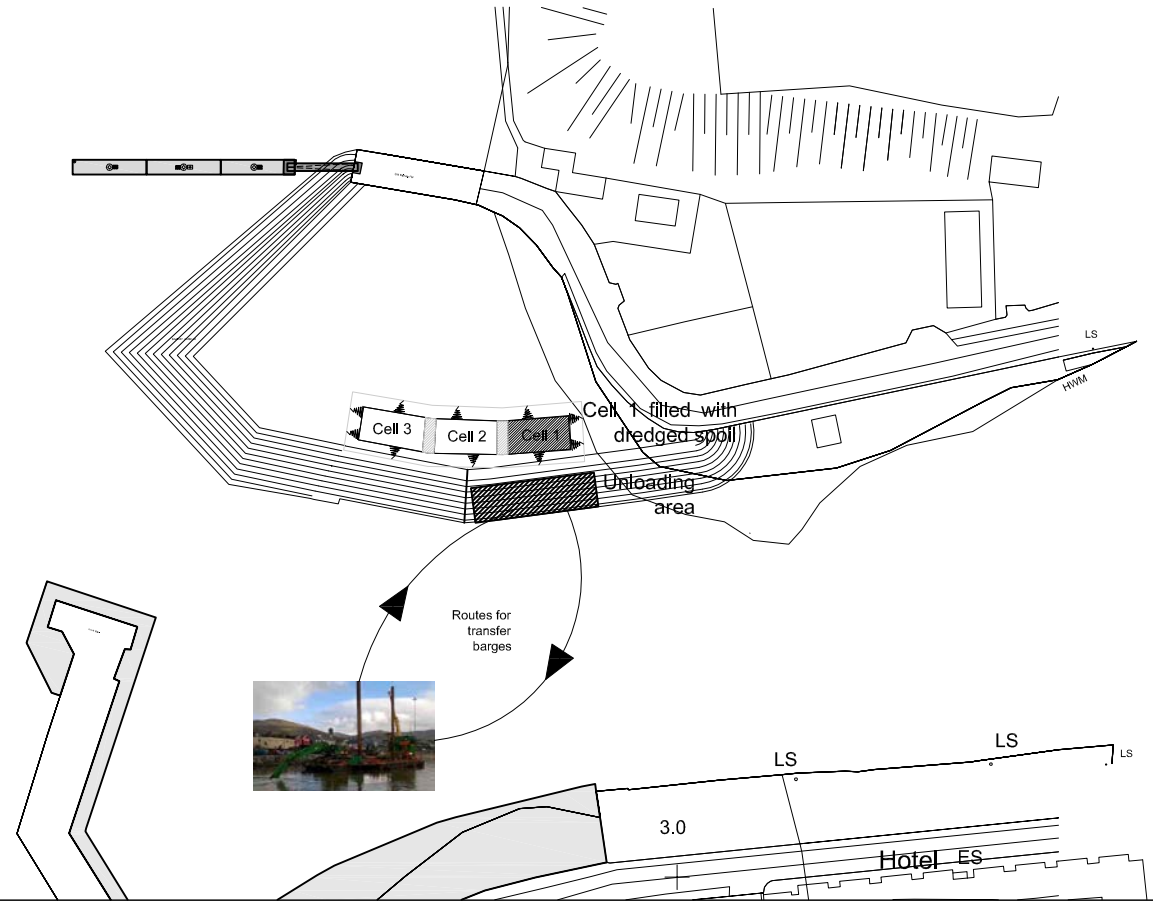
Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:2000	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

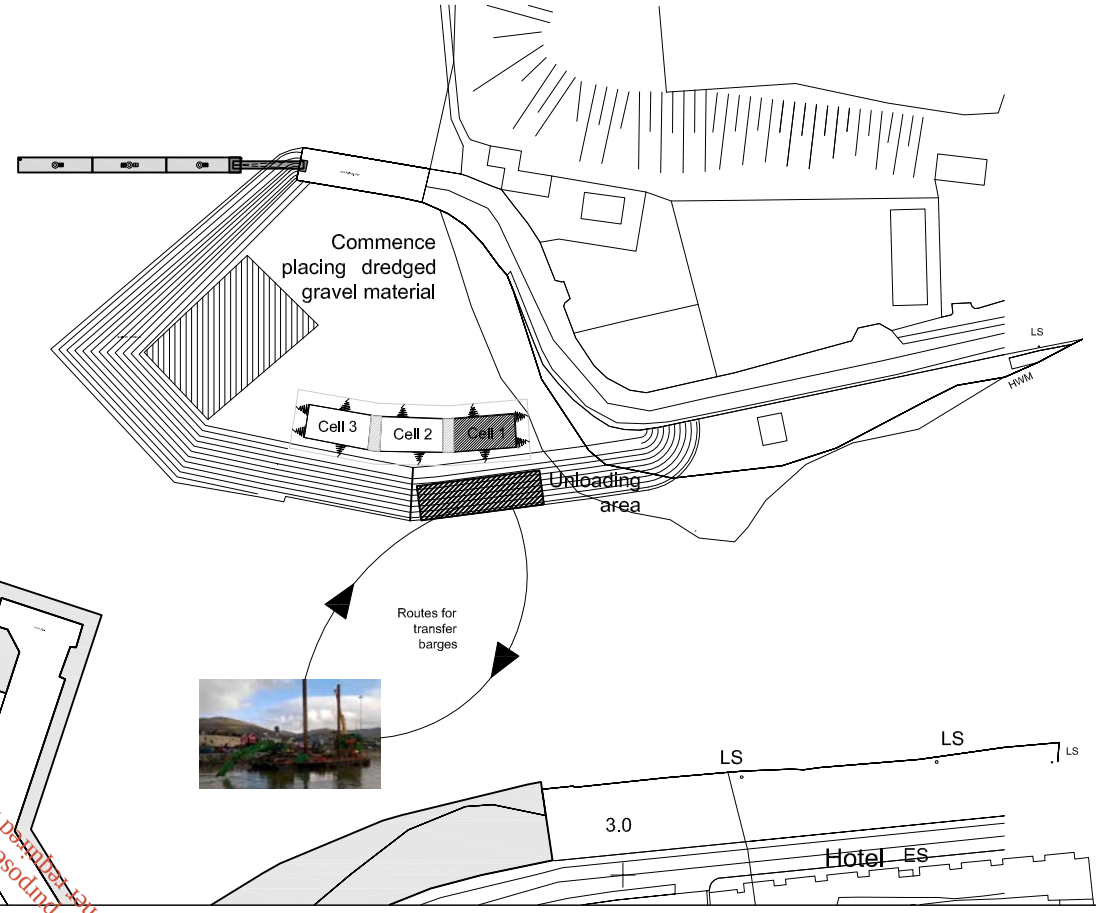
Drg. No. 16341-7007

Rev. A

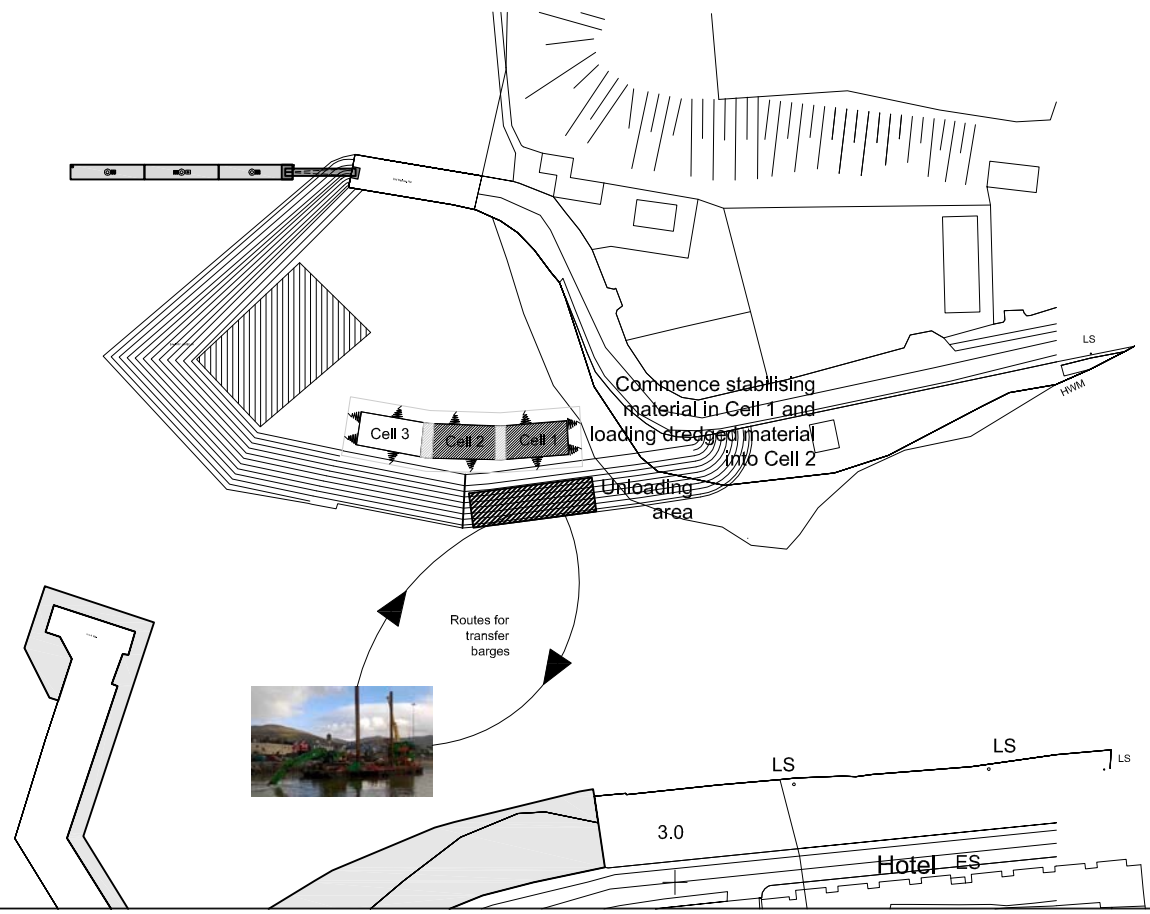
Phase 1



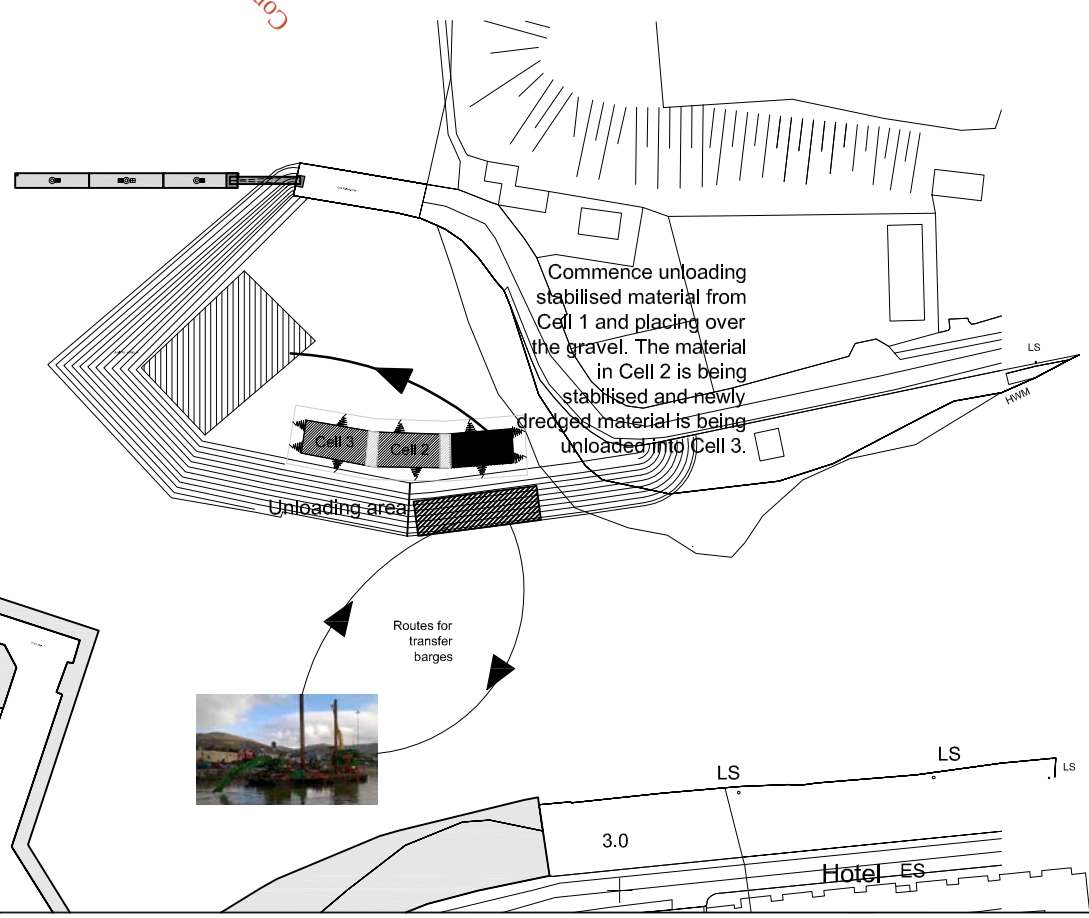
Phase 2



Phase 3



Phase 4



Notes

1. All dimensions are In millimetres (UNO)
2. Drawings are not to be scaled.
3. All levels are to Ordnance Datum Malin Head unless otherwise noted.
4. Conversion for Malin Head to Chart Datum ; 0.00m ODM = 2.18m CD.
5. Schematic Drawing for Information Purposes Only.

Legend

Reference Drawings

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Project: Bantry Inner Harbour Development
Phase 1

Title: Inner Harbour Development
Amenity Area Treatment Phasing

Client: Port of Cork

Malachy Walsh and Partners
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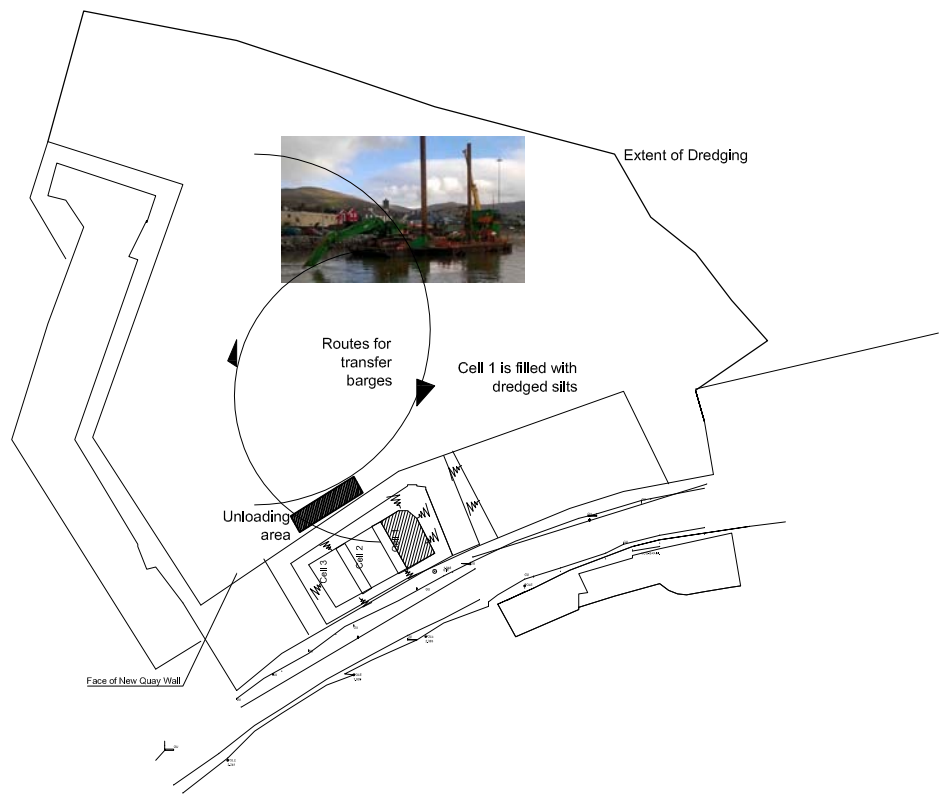
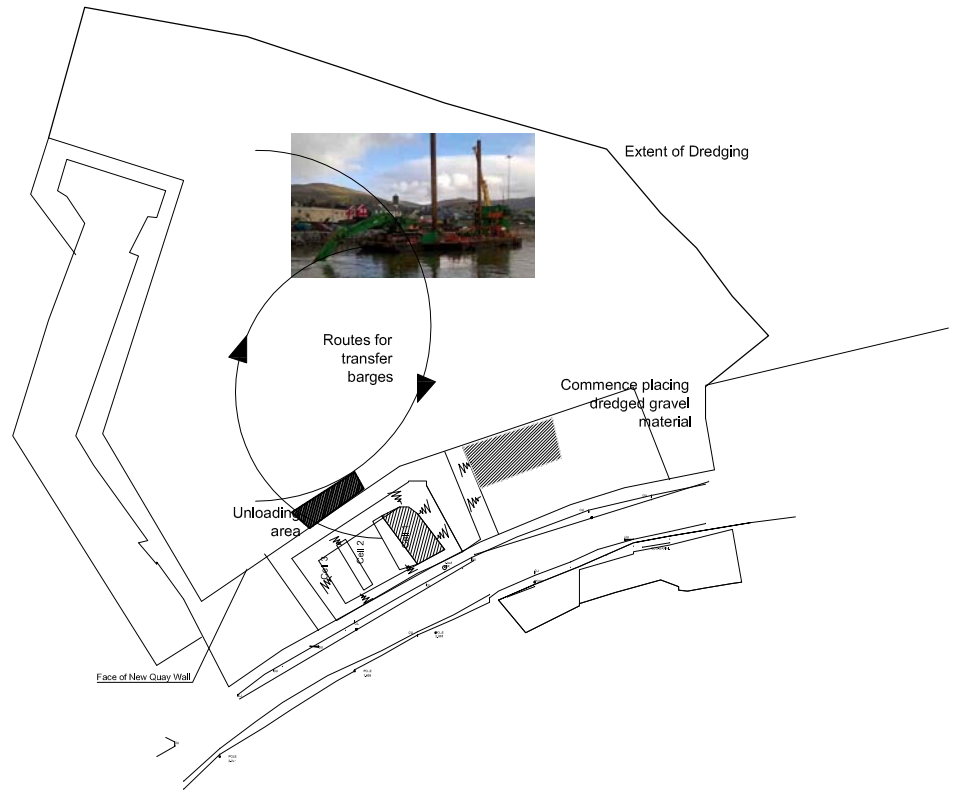
Scales (A1)	NTS		Drg. No.	Rev.
Drawn	MOS	03.02.16	16341-7008	A
Ch'd(D.O.)	PP	03.02.16		
Ch'd(Eng.)	PP	03.02.16		
Approved	PC	03.02.16		

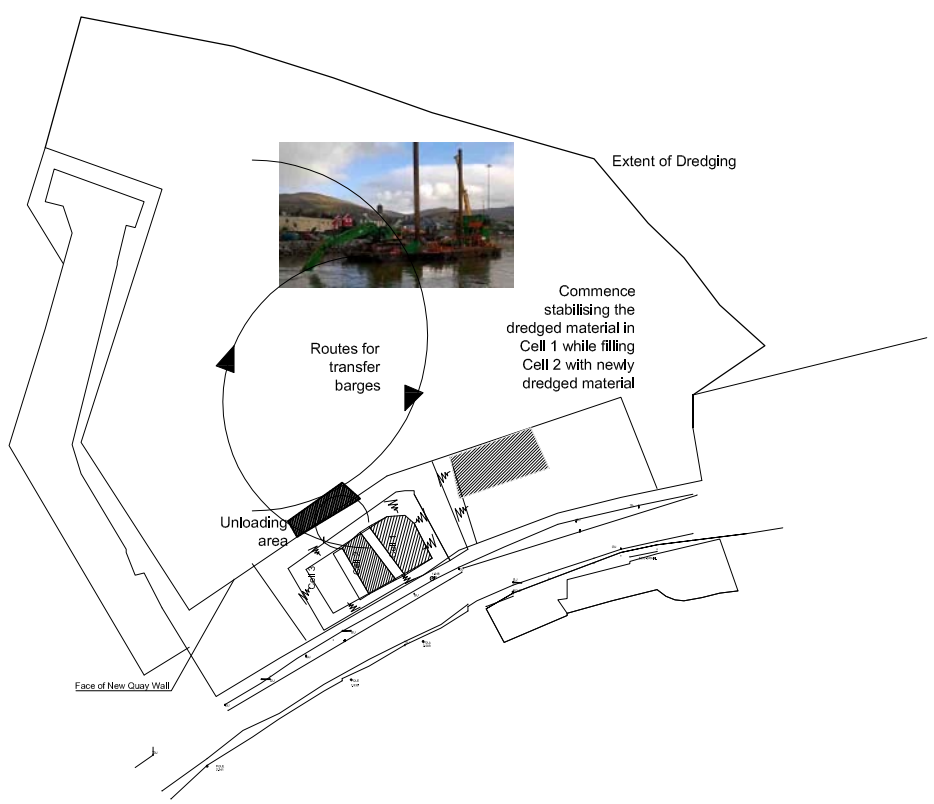
Phase 1



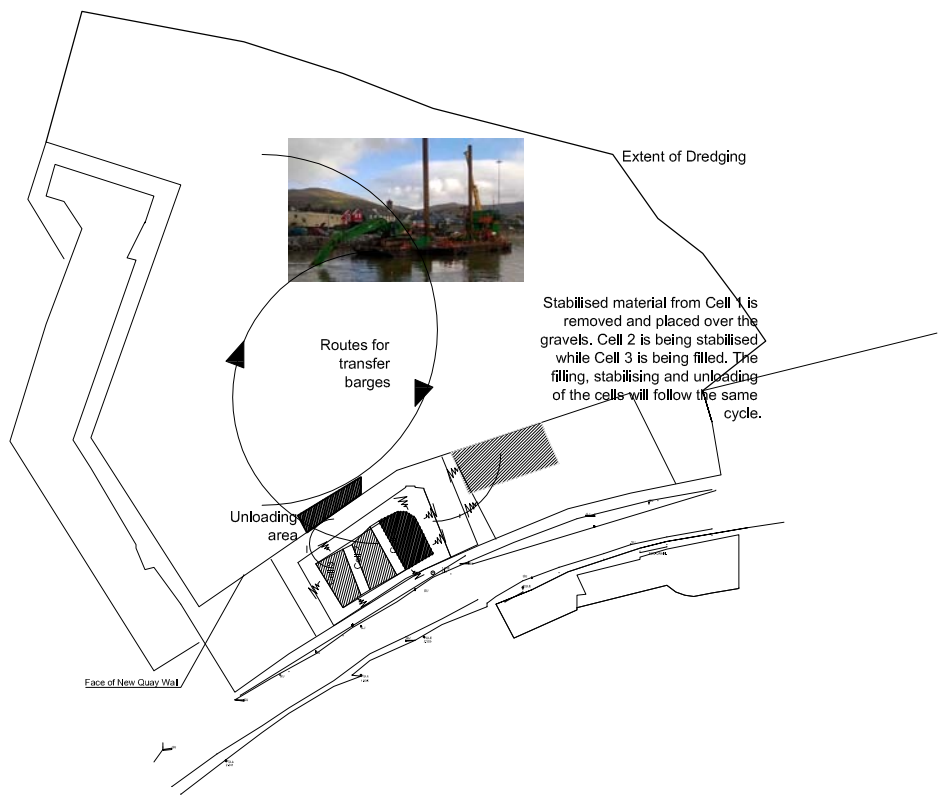
Phase 2



Phase 3



Phase 4



Notes

1. All dimensions are in millimetres (UNO)
2. Drawings are not to be scaled.
3. All levels are to Ordnance Datum Malin Head unless otherwise noted.
3. Conversion for Malin Head to Chart Datum ; 0.00m ODM = 2.18m CD
4. Schematic Drawing for Information Purposes Only

Legend

Reference Drawings

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Project: Bantry Bay Inner Harbour Development Phase 1

Title: Inner Harbour Development Quayside Area Treatment Phasing

Client: Port Of Cork

Malachy Walsh and Partners
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Scales (A1)	NTS		Drg. No.	Rev.
Drawn	MOS	Feb. 2016	16341-7009	A
Ch'd(D.O.)	PC	Feb.2016		
Ch'd(Eng.)	PC	Feb.2016		
Approved	PC	Feb. 2016		

The overall volume of dredge material to achieve the required dredge depths is estimated to be 45,000m3.

Of this overall volume, it is estimated that

- 12,000m3 is potentially contaminated finer clay, silt and sand material (from 0 to 1.0m)
- 13,000m3 is clean finer grained clay, silt and sand material
- 20,000m3 is clean coarser grained sandy gravelly material

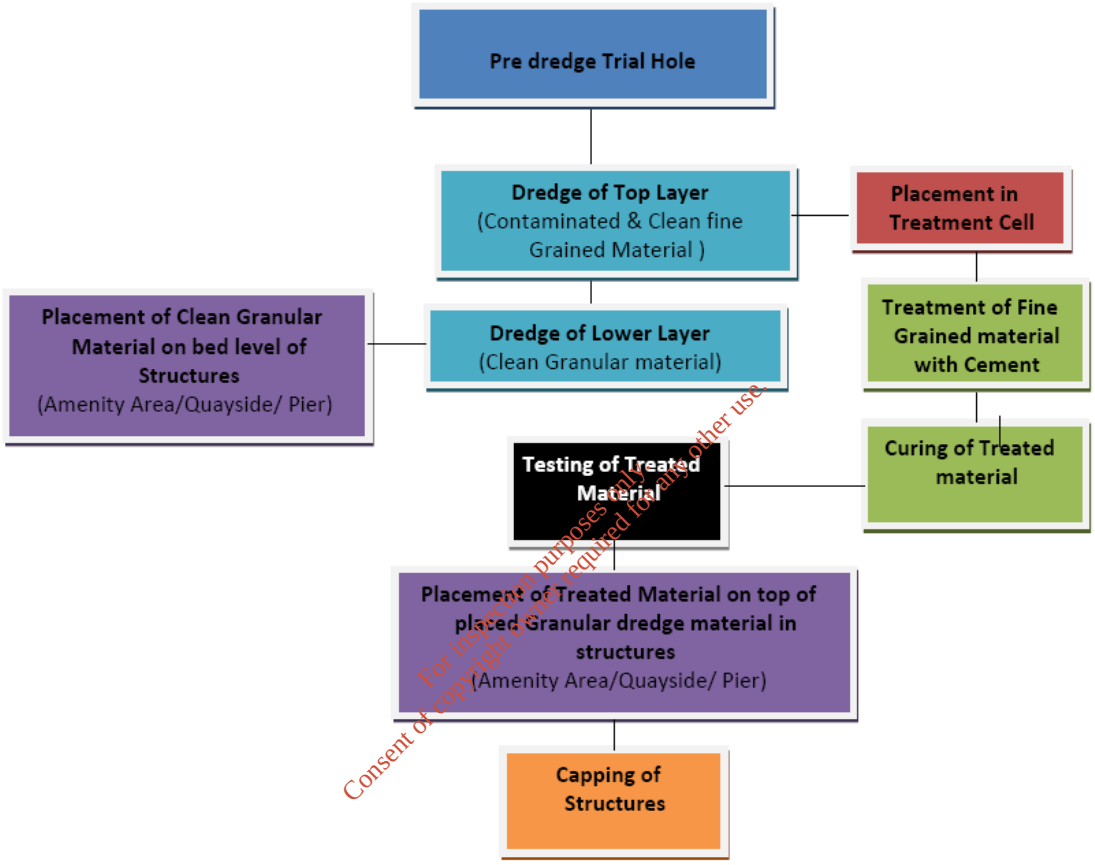


FIGURE D-10 FLOW DIAGRAM OF DREDGE/TREATMENT PROCESS

Methodology and Sequencing of Dredging

Because of constraints relating to storage and treatment of the dredged fine material it will be necessary to sequence the dredging of this material in line with the construction amenity area revetment.

There are three basic types of material to be dredged. Contaminated fine, clean fine and coarse grained. Analysis of borehole data shows that the material is stratified/layered with contaminated fine material overlaying clean fine material overlaying clean granular material. These will be dealt with differently.

The extent of the dredging area has been clearly defined and can be seen on the drawing 16341-7007.

In order to allow the efficient and accurate monitoring of the dredge material a grid system will be set up which will be correlated to the Irish National Grid system. Each grid will be

numbered and the grid system will be uploaded on to the GPS system which will be on-board the long reach excavator which will be carrying out the dredging. The on-board computer will have a graphical representation of the position of the excavator and thus the operator will know at all times the location of the machine and from what grid number the excavator is dredging from. Please see the below screen shot of the on-board GPS system that will be used in Bantry which allows the operator of the machine to know his location at all times. This will facilitate the monitoring and recording of the dredge spoil arising from the operation.

FIGURE D-11 SCREEN SHOT OF THE ON-BOARD GPS COMPUTER WHICH WILL ALLOW ACCURATE MONITORING AND RECORDING

The machine operator and the barge master will be responsible for monitoring and recording the dredged material coming from each individual grid. The date, time and type of material will be recorded so that there will be a complete record of all material dredged. The quantity of material coming from each grid will be recorded based on the number of dump barges filled from each grid. Each barge will be numbered as the shift progresses barge number 1 will be filled at the start of the day and the numbering will proceed in sequential order throughout the day. This numbering will enable the records from the dredging to be correlated to the records from the unloading/stabilisation areas.

Treatment & Placement

The material as it is being dredged will be loaded into the barges which will allow the spoil to be transferred to either the quayside or the amenity area. As per Drawing no 16341-7008 to amenity area and as per Drawing no16341-7009 to Quayside and Pierside This will allow the material to be unloaded and placed in the stabilisation cells. For the cleaner uncontaminated gravel material it will be placed directly into position as it will not require stabilising. Again the areas where the material is being deposited will be broken up into grids as per the drawings 16341-7007 and this will allow the accurate recording of the where the material is being

placed. For the material which requires stabilising prior to placing this will again be recorded. This system will allow the dredged material to be fully traceable from the location it has been dredged from to the location it is being finally placed. The dates and times of the dredging, treatment and deposition of the material will also be accurately recorded.

As mentioned above once the material is excavated from the barge it will be placed in cells constructed behind the quay extension and amenity areas PERS where any water collected during the dredging operation can drain away prior to the material being stabilised. The water draining from the dredge material will naturally filter through the permeable geotextile in the base of the settlement cell and into the area behind the PERS. The PERS will limit the tidal connectivity to the open water of the inner harbour as well as preventing any wave action or currents from entering the amenity area and coming into direct contact with any treated engineering fill material that has already been placed behind.

Once the material has dewatered it will be treated using cement stabilisation. Stabilisation is required so that the material can be incorporated into the permanent works as engineered backfill and so that any potential contaminants are bound and leaching potential reduced. All treated materials will be tested against the Hazwaste online tool and the WAC parameters. See Attachment E for further details.

It is estimated that based on an initial trial that the ratio required for treatment and solidification/ stabilisation is between 8% to 12%, the actual ratio will be determined on site by trial mixes. The stabilisation design mix will be offered to the engineer for approval prior to the full scale dredging programme proceeding. Bam have engaged the services of specialist geotechnical engineers AGL Consulting Ltd., to review all geotechnical matters.

To mix the cement through the wet dredge material the contractor will mount an Allu PMX500 power mixer to a 35 ton excavator, figure D-12. This is a rotating agitator mixing which will feed and mix the cement from Allu PF7+? power feeder with Allu DAC system into the dredge material, the attachment is powered by the hydraulics of the excavator. The agitator will be lowered into the cell of dredge material and the cement added through the agitator. The agitator then mixes the cement through the dredge material ensuring the mix is homogeneous throughout. The material is then for a sufficient period for the chemical reaction between the water and cement to take place. Once the moisture content of the material is reduced to the required levels and has solidified enough to pass the onsite slump test it will be placed into the permanent works. Further details on methodology can be found in MS02-3 in Appendix 3 – Attachment D.

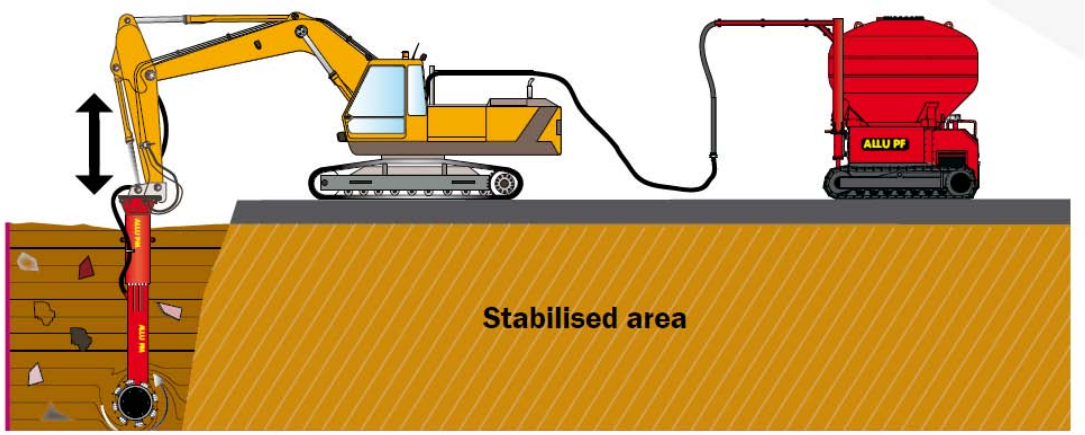


FIGURE D-12 ALLU STABILISATION/SOLIDIFICATION TREATMENT SYSTEM

Main Alternatives

The assessment of alternatives is informed by the process undertaken as part of the EIS preparation where the main alternatives considered were:

1. **Disposal of the Contaminated Dredged Spoil** at Sea Disposal of dredged spoil at sea is a traditional method of disposal of material if no alternative uses can be found for it as part of the proposed development. In order to be allowed dispose of material at sea under a Dumping at Sea Permit, the material must be within specified guidelines for chemical quality. Extensive testing of the material to be dredged was carried out and the results were discussed with the Marine Institute. Based on the level of contamination in the upper layers of the harbour, the Marine Institute responded as follows: “Based on the Guidelines for Suitability of Dredged Material for Dumping at Sea, the uppermost material would not be considered suitable for dumping at sea”. Dumping at sea was then ruled out as an option for disposal of the contaminated sediments from Bantry Harbour.

2. **Transport Contaminated Sediment Off-site for treatment and disposal** Offsite treatment of the dredged material can be carried out wherever facilities are available at the most cost effective rates. Options considered for off-site treatment were as follows:

Remove contaminated material to treatment facility in Ireland and then dispose to landfill

There are several waste management companies within Ireland who specialise in the treatment of contaminated soil in dedicated facilities, such as Enva (Portlaoise, Co. Laois), Indaver (Dublin, Co. Dublin) and Rilta (Rathcoole, Co. Dublin). Contaminated soil is transported to such facilities where it is then suitably treated, repackaged and made available for disposal. The closest suitable treatment centre to Bantry is the Enva facility at Portlaoise, approximately 240km away.

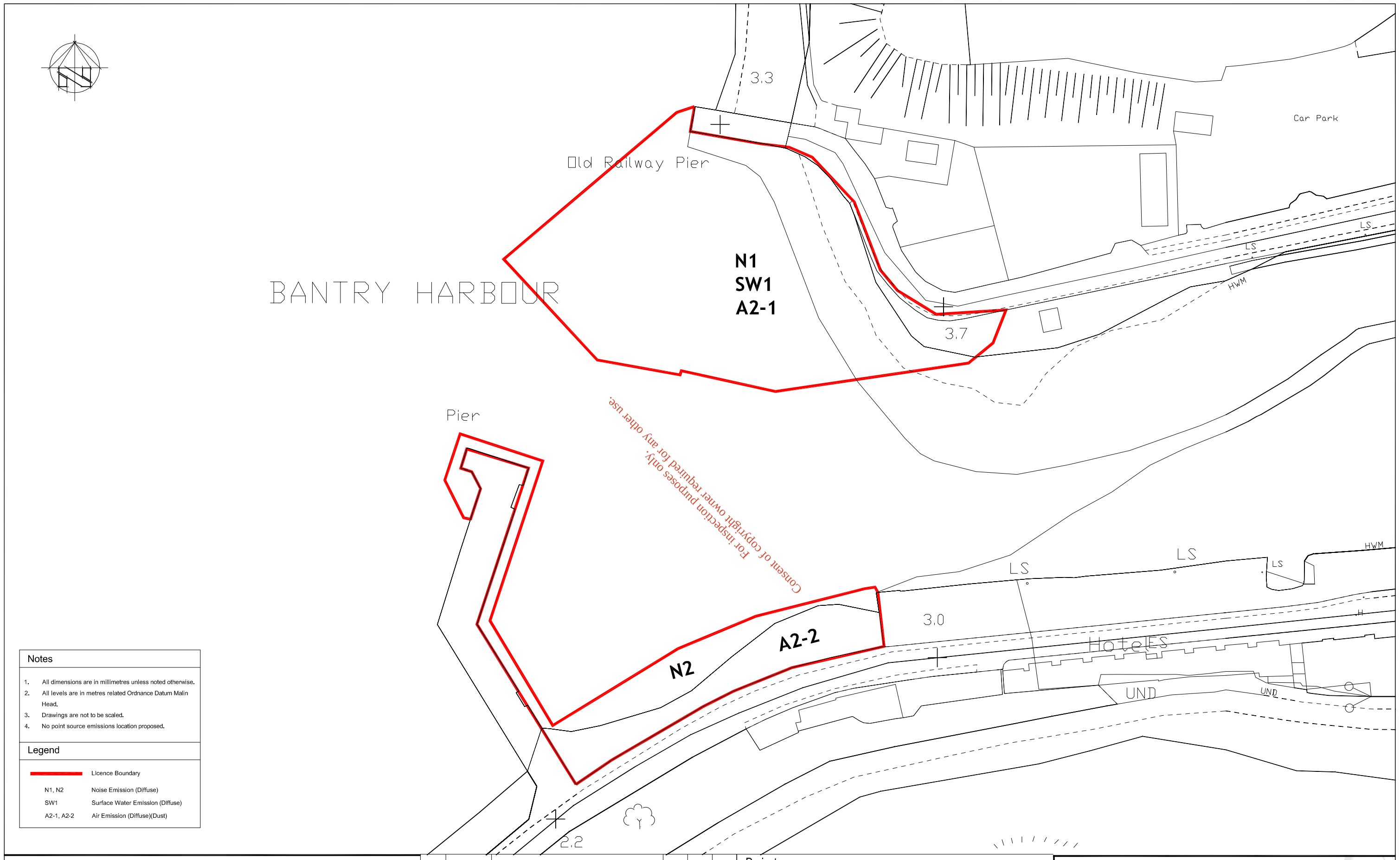
Remove contaminated material to hazardous landfill in mainland Europe

A further option is the direct export of spoil off site to a hazardous landfill site in mainland Europe provided that the volumes of soil are significant enough to warrant the use of barges. Transfer of spoil outside of Ireland is classed as a Trans-Frontier Shipment (TFS). All TFS licenses in Ireland are granted subject to the discretion of the National TFS Office of Dublin City Council.

Attachment E

The following drawings are included and referenced in this attachment:

- 16341-7010 Emission Plan



Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.
4. No point source emissions location proposed.

Legend

	Licence Boundary
N1, N2	Noise Emission (Diffuse)
SW1	Surface Water Emission (Diffuse)
A2-1, A2-2	Air Emission (Diffuse)(Dust)

0 12.5 25
Scale (m)

Rev.	Date	Description	by	ch'd	app
A	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: EMISSIONS PLAN

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:1250	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

Drg. No. 16341-7010

Rev. A

Attachment E.1 Emissions to Atmosphere

Fugitive Dust

There is a potential emission of dust from the drying out of the top layer of treated material in Amenity area prior to the placement of Geotextile and topsoil capping layers. As the Phase 1 development is over a smaller area of the entire site as examined in the original EIS the potential impacts as discussed in the EIS are much less. Furthermore there is a significant reduction in material to be dredge in Phase 1 compared to the site area considered in the overall scheme.

Please see Appendix 8 - Attachment I EIS section 5.4.1.1 further analysis of Dust Emissions during the construction Phase. A description of the existing Air Quality is given in Section 5.3.1 of the EIS.

Attachment E.2 Emissions to Surface Waters

Emissions may occur as a result of

- Suspended Solids from Dredging and placement of dredge material in the structures, rainwater run off/seepage and leaching both during and after treatment
- Potential diesel fuel spillages from the use of plant and machinery on site and/or failures of storage containment or refuelling activities have the potential to cause emissions.
- Potential loss of chemicals, such as Portland cement, during storage or use in the mixing process have the potential to cause both surface water and dust emissions.

The assessment of Suspended Sediment Emissions around the active dredge area have been completed in the project EIS, Appendix 8 –Attachment I and QRA, Apendix 4 – Attachment E. They conclude that the source of potential contamination during dredging is short lived due to dilution and dispersion in the open harbour water and settlement of the sediment. Potential heavy metal contaminates such as lead, mercury and TBT are 'relatively dense' and settle out of suspension quickly. Active dredging works tend to be short in duration and the emission of suspended sediments is transient.

Detailed tidal modelling work completed for the EIS (Section 15) indicated that tidal currents in the area are very low (in the region of 0.0 – 0.2 m/s), with very little difference between neap and spring conditions. Tidal flow patterns are typically dominated by meteorological and wave induced conditions, incurring significant eddying. The model was run for a complete typical month of tides and results indicated that the tidal flow velocities around the entrance area of Inner Bantry Harbour are very low, (EIS Section 15.2.2.2).

The EIS modelling of potential sediment plumes identifies that they would not migrate far from the active dredge area, (Section 15.4.3).

An assessment of the potential sediment dispersion was modelled as part of the EIS (Section 15.4.4) and it was calculated the potential mobilisation of soluble mercury contamination would not be at concentrations above the required Surface Water EQS or Shellfish EQS values during the work.

As part of the QRA the range of potential contaminants were assessed for potential sediment dispersion, following the same methodology as used in the EIA, (as described in Section 15.4.4 of the EIA - RPS 2012), using the maximum soil concentration identified during the completed site investigation works. Refer to Table 6 of the QRA.

These worst case scenario calculations identified that there was potential for average Tributyl Tin concentrations to be elevated just above (i.e., in the order of 2.12 to 2.3 x10-6), the annual average EQS value for marine waters in the dredge sediments in the immediate area of the dredging work. All other analyte concentrations were below their respective EQS values. Only a proportion of any potential contamination will go into the aqueous phase due to sorption; subsequent dilution effects would reduce Tributyl Tin concentrations below the AA EQS values almost instantaneously within the inner harbour waters.

The assessment of emissions to surface waters from the fine grained dredged un-treated and treated material is also addressed in the QRA. Modelling of the potential leachability in un-treated sediments indicates that elevated emissions of total chromium, copper and mercury above the average EQS could arise in the sediment pore water. A modelled tidal prism dilution factor for untreated material behind the perimeter engineered revetment structure

(PERS) at the proposed amenity area indicates that the diluted average concentrations will be below the relevant EQS for all parameters. Refer to Table 7 in the QRA.

Modelling of the potential emissions to surface water from the treated dredge was assessed in the QRA by applying a partition coefficient (K/d) for each potentially polluting element. The stabilisation and solidification (S/S) of the sediment increases the partition coefficient value and the results indicate that even prior to the dilution factor being applied the potential for leachate emissions to arise is negated by the S/S process and retardation of the potential pollutants. Refer to Table 8 of the QRA.

Rain water runoff in the work areas will be allowed drain into the areas to be backfilled – behind the pile structures on the quayside and behind the PERS in the amenity area and no particular emission point or environmental risks from this strategy has been identified.

Proper house keeping, site management and emergency response procedures will reduce the potential impact of accidental emissions of fuels/oils and/or chemicals from the works area.

In conclusion - the emissions to surface waters from the works are diffuse as opposed to point sources and no elevated concentrations contaminates of concern have been identified to pose risks any potential environmental receptors.

Attachment E.3 Emissions to Sewer

Not Applicable - No Point Source Emissions to Sewers

Attachment E.4 Emissions to Groundwater

Not Applicable – See Section 8 of the EIS –Attachment I , for Assessment - The proposed development is not anticipated to have an impact to the groundwater as there is no connectivity with the groundwater and it will not involve any abstraction of groundwater.

Contingency measures are in place in the unlikely event of any chemical or fuel/oil spills as is best practice in all harbour developments.

Attachment E.5 Noise Emissions

Potentially noisy activities during the works are listed in Table E 5. These works will be undertaken within the site boundary. The construction phase noise levels have been predicted assuming that there will be intermittent noise levels of approximately 80 - 85 dB LAeq at 10m from the source.

The hours during which the noise emissions will be made will be limited to 8am to 6pm weekdays with Saturday working from 8am to 1pm. Construction activities will be short term and temporary. The noise and vibration impact at this stage of the project development will not be significant on the nearest residential properties. The primary sources of noise and vibration associated with the contract have been identified as follows in table D-1

TABLE E-1 CONSTRUCTION PLANT

Activity	Plant	Noise Level (dB L_{Aeq}) at 10m
Demolition / Site clearance / Excavation / Removal of waste/rubble	Bulldozer	80
	Excavator	82
	Lorries (drive by)	70
	HGV and tippers	84
Rock Breaking	The Noise level generated during rock breaking, possibly using explosives, will depend on the type and amount of explosive and / or the machinery used. The resultant noise would also be modified by water depth although to what degree is unknown.	
Piling	Hydraulic Piling	89
	Vibratory Piling	88
	Large Rotary Bored Piling	83
	Continuous Flight Auger Piling	79
Dredging	Ship chain bucket	96
	Digging out river bed: Tracked Excavator Water Pump	85
	Loading dredged aggregates: Wheeled Loader	84
Foundations	Compressor	81
	Water Pump	80
	Concrete Pour	86
	Place and vibrate concrete cycle	80
	Cement Mixers	74
Steel Erection	Large crane operations	86
	Articulated lorry	70
Concrete Frame	Large crane operations	86
	Place and vibrate	80
General Construction Works	Surfacing	85
	Internal fit/ bricklaying	70
Road works/landscaping	Surfacing/rolling	76 - 86
Infilling/ Levelling	Dump truck	82
	Wheeled excavator/ Loader	76
	Dozer	80

A detailed description of the Noise Emissions and mitigation measures during the construction phase is provided Chapter 6 of the EIS- Appendix 8 - Attachment I and Section 8.2 of the Contractors Environmental Management Plan Appendix 2 - Attachment C and Environmental Procedure EP-09 and EP-23- Appendix 4 - Attachment E.

TABLE E-2 NOISE EMISSIONS

Activity	Predicted "Worst – Case" Construction Noise Level dB $L_{Aeq, 1\ hour}$ at noise sensitive receivers			
	@ 50m	@ 100m	@ 150m	@ 200m
Demolition / Site clearance / Excavation / Removal of waste/rubble	72	64	60	57
Dredging	73	65	61	57
Hydraulic Piling or	74	66	62	58
Vibratory Piling or	73	65	61	57
Large Rotary Bored Piling or	68	60	56	52
Continuous Flight Auger Piling	64	56	52	48
Foundations	73	66	61	58
Steel Erection	71	63	59	56
Concrete Frame	71	64	60	56
General Construction Works	70	62	58	55
Road works/landscaping	64	56	52	48
Infilling/ Levelling	69	62	57	54

Attachment E.6 Environmental Nuisances

Bird Control and Vermin Control

It is not anticipated that any significant bird control measures will be required at the site other than ensuring all canteen waste generated by construction works is stored in an enclosed/covered skip prior to off- site removal.

It is not anticipated that any significant vermin control measures will be required at the site other than possibly around the waste storage area. Details of proposed control measures can be found in Section 8.7 of the Contractors EMP.

Dust Control

Dust control measures are detailed Chapter 9 (Air Quality and Climate) of the accompanying EIS –Appendix 8 - Attachment I and mitigation is dealt with in Section 8.3 of the Contractors EMP- Appendix 2 - Attachment C and Environment Procedure EP-08 Appendix 4 - Attachment E .

Fire Control

The appointed Contractor will be required to have adequate fire control and emergency response measures in place prior to construction. Such measures will be contained in the Construction Environmental Management Plan (CEMP) – Appendix 2 - Attachment C.

Litter Control

During construction litter will be addressed through the contractors waste management plan for the site and also Environment Procedure EP-19- Appendix 2 - Attachment C

Traffic Control

The mobilisation and demobilisation of construction plant and the delivery of materials will generate the majority of traffic associated with the proposed project as described in Chapter 13 (Roads and Traffic) of the EIS-Appendix 8 - Attachment I. The Contractors TMP in Appendix 3 - Attachment D outlines the proposed designated haul route and access point to the Inner Harbour areas where construction is occurring.

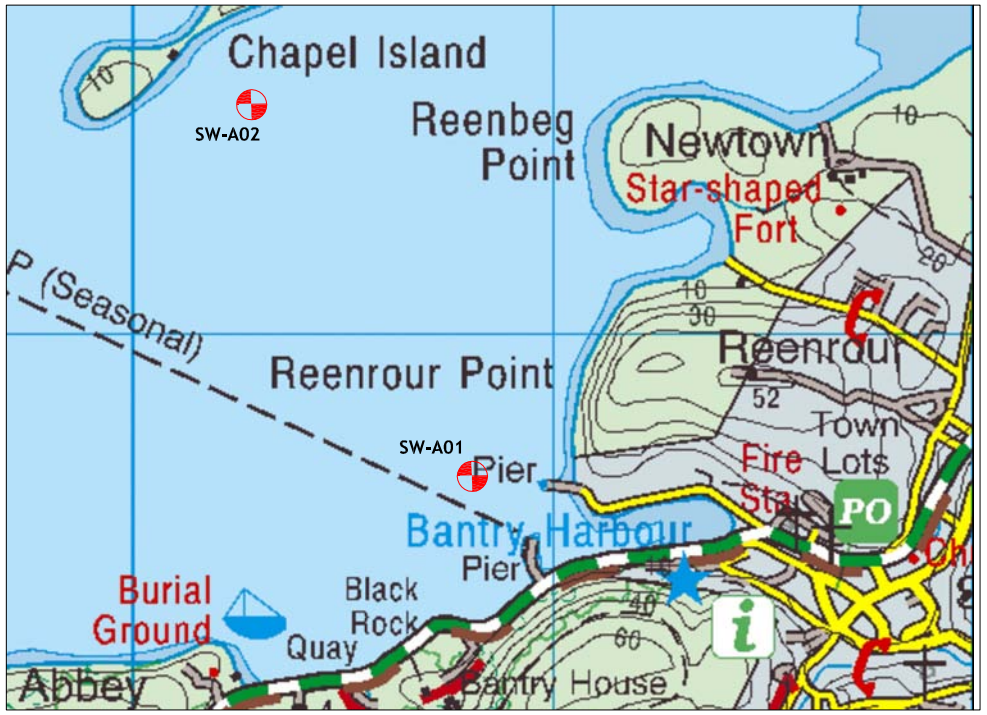
Road Cleansing

The contractor is required to ensure that all local roads, including the access road to the site, are maintained and kept clean as far as is reasonably practicable. This shall be achieved by providing a jet spray wheelwash and sufficient hard standing area for parked vehicles and sufficient length of hard standing between the wheel wash facility and the site entrance to ensure that there is maximum removal of soil material prior to exiting the site.
In addition to this the Contractor shall be required to employ road sweepers to ensure local roads are kept clean and free of debris which may have originated from the site. This is detailed in the contractors TMP- Appendix 3 - Attachment D and also in Section 7.1 of the Contractors EMP – Appendix 2 - Attachment C

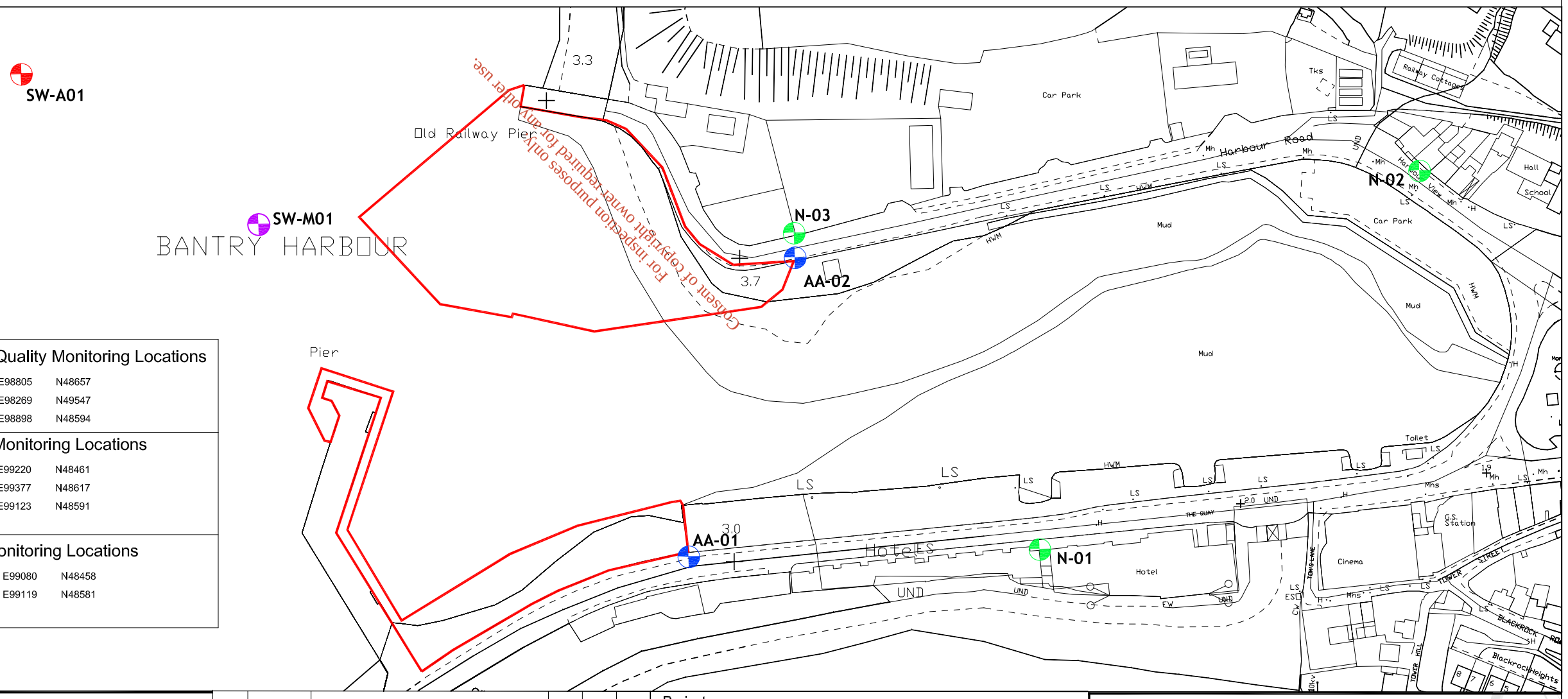
Attachment F

The following drawings are included and referenced in this attachment:

- Drawing No. 16341-7011 Proposed Monitoring Locations.



Baseline Water Quality Monitoring Outer Harbour (NTS)



Notes

1. All dimensions are in millimetres unless noted otherwise.
2. All levels are in metres related Ordnance Datum Malin Head.
3. Drawings are not to be scaled.
4. No point source emissions location proposed.

Legend

- Licence Boundary
- SW-A01, SWA02 Water Quality Monitoring Automatic Locations
- SW-M01, Water Quality Monitoring Manual Location
- N-01, N-02, N-03 Noise Monitoring Location
- AA-01, AA-02, Dust Monitoring Location

Water Quality Monitoring Locations

SW-A01	E98805	N48657
SW-A02	E98269	N49547
SW-M01	E98898	N48594

Noise Monitoring Locations

N-01	E99220	N48461
N-02	E99377	N48617
N-03	E99123	N48591

Dust Monitoring Locations

AA-01	E99080	N48458
AA-02	E99119	N48581

0 20 40
Scale (m)

Rev.	Date	Description	by	ch'd	app
B	11.03.16	ISSUED FOR WASTE LICENCE	BMP	MOS	PP
A	07.03.16	ISSUED FOR INFORMATION	BMP	MOS	PP

Client: PORT OF CORK

Project: BANTRY INNER HARBOUR DEVELOPMENT PHASE 1

Title: MONITORING PLAN

Malachy Walsh and Partners
Engineering and Environmental Consultants
Cork | Tralee | London | Limerick

Scales (A3)	1:2000	
Drawn	MOS	Jan. 2016
Checked	PP	Jan. 2016

Drg. No. 16341-7011

Rev. B

Attachment F.1 Treatment, Abatement & Control Systems

To Atmosphere

The following dust control measures are to be undertaken as per the EMP - Appendix 2 - Attachment C.

Dust Control Measures

The generation of dust particles shall be minimised on site through the implementation of the following measures:

Minimising the area of disturbed ground and the time for which ground is disturbed, by retaining vegetation and topsoil where possible and replacing topsoil and reseeding as soon as possible after work is completed;
Damping down haul roads with water bowsers as required during windy and/or dry conditions;
Providing stabilised site access at site entry points;
Placing aggregate or other stabilising material on heavily travelled haul roads;
Employing road sweepers to remove dust from public roads;
Cleaning footpaths and gutters with hand brooms and shovels;
Damping down temporary stockpiles during windy and/or dry conditions;
Damping down material when crushing rock during windy and/or dry conditions;
Ceasing operation during extremely windy and/or dry conditions when other measures are not effective.

To Surface Water

The dredge activity assessment of Suspended Sediment Emissions around the active dredge area has been completed in the project EIS and QRA. They conclude that the source of potential contamination during dredging is short lived due to dilution and dispersion in the open harbour water and settlement of the sediment. Potential heavy metal contaminates such as lead, mercury and TBT are 'relatively dense' and settle out of suspension quickly. Active dredging works tend to be short in duration and the emission of suspended sediments is transient.

Detailed tidal modelling work completed for the EIS (Section 15) indicated that tidal currents in the area are very low (in the region of 0.0 – 0.2 m/s), with very little difference between neap and spring conditions. Tidal flow patterns are typically dominated by meteorological and wave induced conditions, incurring significant eddying. The model was run for a complete typical month of tides and results indicated that the tidal flow velocities around the entrance area of Inner Bantry Harbour are very low, (EIS Section 15.2.2.2). The EIS modelling of potential sediment plumes identifies that they would not migrate far from the active dredge area, (Section 15.4.3).

The calculation of the rate of potential contaminated leachate from treated dredge material based on modelling and trial results are detailed in the QRA Report – Appendix 4 - Attachment E. They indicate that while there are potentially elevated levels in water around the dredging activity and in the pore water of the dredged sediments in the short term these will be immediately diluted to below detectable concentrations with dispersion into the waters of the inner harbour. The potential for leachate to arise from the treated material in the longer term will be negated by the stabilisation and solidification of the material and placement of the material behind impermeable sheet pile systems at the town pier works or the low permeability PERS constructed along the seaward edge of the reclaimed amenity area. It is not considered that there will be any required maintenance or aftercare of the treated material in the long term.

Water Pollution Control Measures

The potential for the construction works to have an impact on the quality of the above waterways shall be minimised through the implementation of the following control measures, which have been developed with reference to the guidance contained in EP-10 Surface Water Control, EP-13 Bulk Fuel & Oil Storage, EP-14 Storage & Handling of Hazardous Substances and EP-15 Containing & Cleaning Up Spills found in Appendix 5 – Attachment F and the

Eastern Regional Fisheries Board document (2004) Protection of Fisheries Habitat during Construction and Development Works at River Sites.

Water Pollution Incidents
Should any monitoring or inspection indicate that pollution of the Bantry Inner Harbour Development Phase 1 project has occurred then the Site Management Team shall immediately inspect the sediment control facilities to ascertain whether they are operating effectively. Pumping may be stopped and/or additional control measures installed to prevent further discharge to the harbour. Appropriate action shall be taken in consultation with the Site Agent. Water samples shall be taken up and downstream of the discharge point. The incident shall be logged in the Incident Register.

A detailed description of the surface water management system is provided in the attached Environmental Procedures EP-10 – Appendix 3 - Attachment D and EP-13 Appendix 5 - Attachment F .

Noise
The following Noise abatement measures are to be undertaken as per the EMP - Appendix 2 - Attachment C.

Section E of this application details the potential activities and plant that may cause noise emissions.

- The following abatements are proposed as per EP-09 – Appendix 4 - Attachment E:
- Plan the working hours and duration of work with consideration for the effects of noise/vibration on any noise sensitive receiver;
- Locate haul routes away from sensitive receivers and maintain road surfaces to reduce vehicle noise;
- Ensure the use of the least noisiest plant suitable for the activity;
- Avoid simultaneous use of noisy equipment where reasonably practicable;
- Ensure plant and equipment that is used intermittently will be shut down or throttled down to a minimum between work periods;
- Locate plant known to emit noise strongly in one direction so that noise is directed away from sensitive receivers;
- Ensure that plant and equipment are maintained and lubricated as per the manufacturer's instructions to avoid rattling of loose parts, frictional noise etc;
- Handle materials carefully to avoid noise caused by dropping from height, throwing materials (eg scaffold poles);

Where other measures are inadequate controlling noise and vibration at source, through the provision of barriers or acoustic cabins and/or use of resilient mountings. Annex B of BS 5228: 2009 provides examples of acoustic enclosures.

For further information on reducing noise refer to Annex B of BS 5228: 2009 – Noise sources, remedies and their effectiveness, particularly Table B.1 which provides methods of reducing sound levels for different types of plant and equipment.

For additional information on acoustic screens refer to CIRIA SP38 – The use of screens to reduce noise from sites.

Attachments F.2-F. 9. Monitoring and Sampling Points

The parameters to be monitored at the site include noise, air quality, surface water quality. Please refer to Drawing No. 16341-7010 Proposed Emission locations & Drawing No. 16341-7011 Proposed Monitoring Locations.

Tables F2 Air, F3 Surface Water and Ff noise have been completed in the Waste Licence Application Form.

Environmental monitoring will be undertaken either by both Contractor Staff and Independent specialists staff or a competent environmental scientist(s) contracted by the applicant. This person(s) will be responsible for ensuring that sampling is undertaken in compliance with EPA protocols. The results and interpretative report will be prepared on a basis specified by the licence for the facility and submitted in a manner suitable for presentation to the EPA.

Sampling protocols including Standard Operating Procedures (SOP) and QA/QC data will be supplied to the Agency as part of the monitoring programme. Where laboratories are used for analysis, the methods, SOPs, Chain of Custody Information and QA/QC information will be submitted to the EPA as part of the reporting procedure.

Attachment F2 Air

In terms of monitoring air quality the following monitoring regimes as stated in the EMP – Appendix 2 - Attachment C are proposed throughout the construction stage:-

Monitoring of emissions and dust levels may be undertaken through visual inspections and assessments of the air quality surrounding the site. Visual inspections are undertaken on site by the HSE Officer, Foreman and Site Manager.

If significant levels of dust are observed additional control measures must be implemented immediately – primarily by damping down the source of the dust.

The contractor will be required to monitor monthly dust deposition levels for comparison with the guideline of 350mg/m2/day. It is proposed to carry out such monitoring at:

- AA-01-Western boundary of Quayside Reclamation
- AA-02- Western boundary of Amenity Area

FIGURE F-1 BERGERHAUFF MONITOR

Where dust levels are measured to be above this guideline the mitigation measures in the area must be reviewed as part of the dust minimisation plan.

Attachment F3 Surface Water

Construction Stage

Automatic surface water quality monitoring will take place in two locations near the boundary of the works area during the construction stage to ensure that potential negative impacts are not occurring. It is proposed that such monitoring be undertaken at 2 of the baseline monitoring locations (1 at the mouth of the inner harbour entrance, 1 at the nearest commercial mussel farm) SW-A01 and SW-A02 – See drawing 163417-7011 for exact location. These samplers will measure total suspended solids and water turbidity.

Limit trigger levels are set based the EIS modelling and relevant guidance. The maximum total suspended sediment (TSS) concentrations modelled in the EIS were 0.04kg/m3, (40mg/l) at the mouth of the inner harbour and 0.025kg/m3 (25mg/l) in the outer harbour. No turbidity values were modelled but typically turbidity is higher than the respective TSS value.

The UK Environment Agency chemical standards guidance in the marine environmental recommend that increased concentrations of potential pollutants should not exceed 30% above background levels for the protection of shellfish intended for human consumption.

Background levels will be determined by the automatic samplers prior to works commencing.

If during the works should the automatic samplers detect levels above the set trigger limits, the contractor will be expected to cease operations until suitable silt screening can be mobilised and positioned to prevent further loss of material from the harbour. The resident engineer will give instructions to the contractor on when/if to cease operations in this situation.

In addition to the automatic sampling a further daily manual water quality monitoring point will be located in close proximity to the site – SW-M01 See drawing 16341-7011 for exact location. The manual Water samples shall be taken with appropriate equipment that ensure that the sample is taken from the requisite water depth, mid depth or 3m below the surface whichever is lower. Sampling of water for assessment of water quality shall be in accordance with ISO 5667 or equivalent standard.

Water samples should be analysed for the parameters specified below:

- Suspended sediment concentration;
- Turbidity;
- Heavy Metals inc TBT.

The samples at each level should be sufficient in volume to allow for the analysis requirements. A spare sample should be taken at each location at each time in case of anomalies in the results. Notes for the daily log records should be taken for each sample. Water samples are to be collected and stored in accordance with the testing laboratory's instructions. Environmental samples are to be transported to the lab every Friday in cooled sample boxes. Standard lab provided "Chain of Custody" forms are to be used for all samples submitted. Results are to be provided by Tuesday of the following week and supplied to the Resident Engineer. Only laboratories accredited to undertake the required analysis of the water quality samples shall be approved by the Engineer.

Post Construction

It is proposed to undertake weekly testing for a month after construction with a reduced sampling frequency of once a month for a year after that. The full duration of the post construction sampling is to be agreed.

Attachment F.6 Noise

Construction Phase

As Identified in the EIS – Attachment- I, it is proposed to carry out noise monitoring at the following noise monitoring locations (Please refer to Drawing 16341-7011 during construction works to ensure the nearest noise sensitive properties are not impacted.

N-01 – Maritime Hotel

N-02 –Buildings adjacent to Harbour View

N-03 – Building adjacent to proposed amenity area

Specific Mitigation Measures for Construction Phase

A range of measures will be taken to ensure that the quietest machinery is used or is used in such a manner as to be sensitive to the residents at the nearest properties. This is summarised in Section F1 of this application and detailed further in the Construction Environmental Management Plan. British Standard *BS5228:2009 – Noise and vibration control on construction and open sites* outlines a range of measures that can be used to reduce the impact of construction phase noise on the nearest noise sensitive receptors. These measures should be applied by the contractor where appropriate during the construction phase of the proposed development.

Post Construction

The post construction phase of the proposed development will not involve any significant noise generating activities. It is therefore not proposed to carry out noise monitoring during this phase. Please refer to Chapter 10 (Noise and Vibration) of the EIS- Attachment I for further details.

Attachment G

Attachment G.1 Raw Materials, Substances, Preparations and Energy

As per Table G.1 in the Application form. The following raw materials will be consumed at the facility over the construction period:

- Diesel
- Lubricating Oil
- Hydraulic Oil
- Sheet piles (600 tonnes)
- Precast concrete elements (100 units)
- Rock armour (20,000m3)
- General rock fill (20,000m3)
- Cement (3000 tonnes)
- Concrete (1000m3)
- Steel reinforcement (250 tonnes)
- Electrical appliances and cables
- Block-work and masonry stone
- Timber formworks (400m2 of shuttering plywood)
- Rock anchors (900m of double corrosion protection anchors)
- Exact quantities of these materials to be consumed are as yet unknown and annual usage will be reported as part of the annual environmental returns.

Water usage onsite is difficult as ascertain at this juncture. However, A water tanker will be kept on site primarily available for dust suppression and dredge material treatment as necessary. Please see EP-28Water Consumption & conservation- Appendix 6 - Attachment G for further details on Water management.

Post Construction Phase

No raw materials or fuels will be required during the Post construction phase other than nominal amounts of fuel required for continuous maintenance such as grass cutting and landscaping etc.

Attachment G.2 Energy Efficiency

BAM are undertaking an Energy management programme with Sustainable Energy Authority Ireland which will improve staff awareness on energy management and policy and implement energy savings on site. Cost analysis tools will be used to calculate energy consumption of the plant equipment and opportunities for further reductions that can be applied to work being undertaken at this site..

For further details please see Energy Efficiency objective as detailed in EP-03, EP-02 and EP-27 - Appendix 6 - Attachment G.

Attachment H

Attachment H.2 Waste Acceptance Procedures

As detailed in Attachment D.2 all fine grained material will be treated. Please see EP-22 - Appendix 7 - Attachment H for further details on Management of Contaminated Soils.

Attachment H.3 Waste Handling

Please see Attachment D.2 for details on Dredge spoil handling.

Attachment H.4 Waste Arisings

The treated material is to be tested for contaminant leachates once it has cured in treatment cells as per Attachment D.1 & D.2. The material will be tested against the WAC and HazWasteOnline tool.

The material is classified as EWC 17-05-06.

Approximately 45,000m3 of material will be dredged, using a bulk modulus of 1.6 this equates to 72,000 Tonnes. It is planned to treat approximately 40,000 Tonnes with approximately 8-12% cement to stabilise it for reuse within the structures.

It is envisaged that any other wastes generated will be minimal as materials will be sourced off –site/disposed of off –site or re-used within the site.

Construction wastes (excess/residual materials/ packaged wastes) will be disposed of to a suitable licensed facility. KWD will provide 3 number skips which will be located at the site compound, the waste will be segregated so that it can be reused and recycled. One skip will be for timber, one for plastics and cardboard and one will be for general waste. KWD will also collect and steel waste for recycling on a regular basis. KWD are a fully licensed and certified waste collection and disposal company.

Cementitious wastes. Cement used in the stabilisation process will be kept to a minimum due to the sealed nature of the mixing equipment being used. The cement will be delivered in sealed truck units which contain a donkey engine which will be used to blow the cement into the sealed Allu power feeder which will be used for the mixing and stabilisation of the dredged spoil. In the event of any cement waste arising it will be sucked up using an industrial vacuum and simply added to the dredged spoil for mixing.

Attachment H.5 Waste Recycling & Recovery

The imported clean stone fill for the temporary causeway will be reused in the construction of the rock revetment core of the Amenity Area. This will ensure that the material has a beneficial reuse within the project.

45,000 m³ of dredge spoil (approx 15,000m³ contaminated, 20,000m³ gravels and 10,000m³ silts) will be treated and reused within the works.

As per Attachment B.7, the Principal activity at the proposed facility will be R5, as per the Fourth Schedule of the Waste Management Act 1996, as amended i.e. recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

Regulation 31(1) and (2) of the European Communities (Waste Directive) Regulations 2011 address re-use and recycling. Regulation 31 (2) (b) requires the Minister to take measures to ensure that, by 2020, the preparing for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials, of non-hazardous construction and demolition waste is increased to 70%.

The proposed recovery of dredge spoil material as outlined in this application contributes to the achievement of the target.

Through ongoing testing of the material as outlined Attachment H.4 the proposed development assess the potential for the designation of the dredge spoil material as hazardous, in keeping with the requirements of Regulation 29(2)(a).

Attachment I

Attachment I.1 Assessment of atmospheric emissions

Section 5.0 of the EIS assesses the impact of the proposed development on the natural environment in terms of Air and Climate. The impact assessment relevant to this application is found in Sub-Section 5.4.1.1. The background air quality data used in the DMRB assessment for the area near to the proposed Bantry Harbour development has been based on the baseline air quality data outlined in the EPA – Air Quality Monitoring Reports 2010 from Zone D monitoring stations. The background air pollutant concentrations used in the DMRB assessment of the potential impact of traffic on air quality are outlined in Table 5.8 of the EIS – Appendix 8 - Attachment I. These are a worst – case estimate of background concentrations near to the proposed development along the rural south-west coast of Ireland.

The expected atmospheric emissions from Phase 1 of the Bantry Inner Harbour Development are fugitive dust as detailed in Attachment E. While the EIS submitted with this application covers the entire project footprint, the assessment is also valid for the Phase 1 aspect of the Development which this application relates to.

It is predicted that the fugitive dust emissions will be reduced compared to those predicted in the EIS. Given the reduction in scale of the project there will be less construction traffic further from the town than documented in the EIS. The dredge area is also reduced and only the area furthest from the town as documented in the EIS is being dredged, reducing the impact of both potential dust and noise.

Attachment I.2 Assessment of Impact on Receiving Surface Water

Detail on the existing water quality of the Bantry Inner Harbour is presented in Section 16.3.4 of the EIS. It notes that 21 water samples taken and tested for indicator, heavy metal and organic parameters as part of a shellfish waters monitoring program between 2004 to 2010 did not identify any exceedances above the relevant regulators standards except for faecal contamination.

The proposed development area is within the Inner Bantry Bay transitional water body (water body code: IE_SW_170_0100). The interim Water Framework Directive status of this water body was reported as 'high' in the South Western River Basin Management Plan. (EIS Section 16.3.2).

Water testing completed for this development during the January 2015 site investigations and July 2015 background sampling program did not identify any exceedances for Trybutal Tin (TBT) or Mercury (Hg) in the surface waters.

The main potential impacts receiving waters in relation to the Bantry Inner Harbour Development Phase 1 are short term increases in suspended sediments and solubility of potential pollutants during the active dredging and sediment treatment stages or from the treated engineered backfill material in the longer term.

The EIS modelling of potential sediment plumes identifies that they would not migrate far from the active dredge area, (Section 15.4.3).

The Tier 2 Quantitative Risk Assessment (QRA) completed for the Bantry Inner Harbour Phase 1 Development assessed the potential sources, pathways and receptors for the site for the different potential pollution scenarios. While the possibility of slightly elevated concentrations of some parameters was identified during the dredge and treatment stages the levels were not very high and their immediate dilution and dispersion in the harbour waters would result in concentrations below the required average AA EQS.

The impact of each of the above potential emissions will be managed by the contractor through the implementation of mitigation measures detailed in Section F of this application and Section 17 of the EIS. It should be noted that as the construction phase is temporary, potential impacts relating to dredging will also be temporary in nature during this phase of the project.

The addition of small quantities of cement, (to act as a binding agent), to one of the samples acquired from the site area in August 2015 was shown to stabilise and solidify the sediment and inhibit its leachability. As per the UK Environment Agency Guidance (2004) this technique of solidification and stabilisation (S/S) is well known to retard the pollution potential of dredge sediments and make them suitable for use as engineering backfill and has been successfully applied to other port and harbour sites.

The calculation of the rate of potential contaminated leachate from treated dredge material based on modelling and trial results are detailed in the QRA Report – Appendix 4 - Attachment E. They indicate that while there are potentially elevated levels in water around the dredging activity and in the pore water of the dredged sediments these will be immediately diluted to below detectable concentrations with dispersion into the waters of the inner harbour. The potential for leachate to arise from the treated material in the longer term will be negated by the stabilisation and solidification of the material and placement of the material behind impermeable sheet pile systems at the town pier works or the low permeability PERS constructed along the seaward edge of the reclaimed amenity area. It is not considered that there will be any required maintenance or aftercare of the treated material in the long term.

Please refer to Section E of this application for further details on surface water emissions. This Section of the application should be read in conjunction with the QRA Report, Sections 15 and 16 of the EIS and Environmental Procedure EP-10.

Attachment I.3 Assessment of Impact of. Sewage Discharge.

Not applicable.

Attachment I.4 Assessment of impact of groundwater and soils

It is not proposed to discharge to groundwater nor are there any likely emissions to groundwater as a result of the works. The proposed development is not anticipated to have an impact to the groundwater as it will not involve any abstraction of groundwater.

Groundwater was identified to be at a depth (~7m bgl) and separated from the ground surface by thick sequences of low permeability sediments during the completed site investigations.

No terrestrial soils will be impacted by the works as all the development will be in the marine environment.

Contingency measures are in place in the unlikely event of any chemical oil spills as is best practice in all harbour developments

Please see Section 8.0 of the EIS –Appendix 8 - Attachment I for further details on Groundwater.
16341-7011

Attachment I.5.Ground and/or groundwater contamination

Not applicable as the site is not an existing activity or a new one developed on a former industrial site.

Attachment I.6. Noise Impact.

Noise emissions may arise within the waste licence boundary as a result of construction activities and off site as a result of construction traffic.

In order to characterise the existing noise environment in the vicinity of the proposed development site, a baseline daytime and night-time noise survey was undertaken as part of the Section 6.0 of the EIS – Attachment I.

Of the 5 locations recorded only 3 can be considered relevant to this application. NML4 and NML 5 were chosen to monitor baseline at the Abbey Development and the Cove Site development which are not part of the Phase 1 works that this application relates to, and thus can be disregarded.

There are no areas in proximity to the proposed development site which are exposed to particularly low or high levels of noise pollution. Traffic noise levels dominate the background noise levels in the harbour area. Local housing is the main sensitive receiver to which future noise levels may be significant in terms of the impact upon the development itself.
The primary effects relating to noise as a result of this proposed development include the following:
Construction Noise – short-term and temporary in duration
Operational Noise – mainly expected to be additional traffic in the area as a result of the development.
The noise impact as a result of changes in traffic flow have been shown in this chapter to be negligible and most likely will not be perceived at nearby residential locations. Noise nuisance to nearby residents is unlikely as a result of the construction and operation of the proposed development.

For further details on the Noise Impact please see Section 6.0 of the EIS and Attachment E of this form. For mitigation measures please see EP-09 for proposed Noise and Vibration management strategies

Attachment I.7 *Assessment of Ecological Impacts & Mitigation Measures*

Section 10.0 of the EIS assesses the impact of the proposed development on the natural environment in terms of marine mammals, Birds, Terrestrial Fauna and Benthic and Intertidal. The impact assessment relevant to this application is found in Sub-section 10.2.4, 10.3.6, 10.4.3.3. A separate Stage 1 and Stage 2 Appropriate Assessment – NIS was also undertaken which focussed on the proposed Phase 1 works scope and area.

Potential Impacts on Habitats
Intertidal and sub-tidal communities and habitats will be permanently removed from the footprint of the proposed development (in areas of the proposed new breakwater and hard-stand areas to the north and the development of the existing pier-head to the south).

Within the footprint of the dredge area, i.e. inside the harbour and at its approaches, the faunal communities will be initially removed. If the substrate which remains is similar in nature to the sediment which will be removed, re-colonisation of this sediment would be expected to commence relatively quickly, due to the presence of similar habitats close by

Potential Impacts on Flora & Fauna

Disturbance during construction works within the inner harbour, including dredging activities, is likely to result in the temporary displacement of some birds, depending on the scale of activity
The developments are not expected to significantly affect the otter habitats in the Harbour or Bantry Bay, except by virtue of increased boat traffic and resultant disturbance – and risk of pollution incidents.

It is not expected that the proposed Phase 1 works at Bantry Inner Harbour, will result in an adverse impact on the Natura 2000 sites considered in this NIS, namely:

- Glengarriff Harbour and Woodland SAC (000090)
- Roaringwater Bay and Islands SAC (000101)

For the mitigation measures ranging from Turbidity management, to Marine Mammal Monitoring please see section 2.16 of the NIS – Appendix 1 Attachment B

For further details on the Ecological Impact please see Section 10 & Section 11 of the EIS - Attachment I and the NIS – Appendix 1 - Attachment B.

Attachment J

Draft Accident Prevention and Emergency Response procedures are presented in Appendix 9 - Attachment J. These procedures will be developed for the site, in agreement with the Agency.

Public Liability

Port of Cork Company possess all required insurance through Marshes Insurances Ltd.

BAM as primary contractor possess all required insurance through Aon insurances Ltd.

In addition, a draft Environmental Liabilities Risk Assessment has been prepared and is included in Appendix ?.

This document outlines the draft measures to be taken in the event of an unforeseen environmental incident (ELRA) and has been informed by discussions undertaken with the Agency to date.

Attachment K

A draft Closure Plan (CP) has been prepared and is included in Appendix 10 – Attachment K.

This document outline the draft measures to be taken during closure (CP) and has been informed by discussions undertaken with the Agency to date.

Attachment L

Attachment L.1 Statutory Requirements

Please see Attachments E1, E2 &E5 and F1,F2&F3 &F6 on how requirements of Section 40(4)(a) (any emission from the recovery or disposal activity in question ('the activity concerned') will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any other enactment) of the Waste Management Act 1996 are met.

Please see Attachments I2-I7 and F1, F2, F3 &F6 on how requirements of Section 40(4)(b) ((b) the activity concerned, carried on in accordance with such conditions as may be attached to the licence, will not cause environmental pollution) of the Waste Management Act 1996 are met.

Section 40(4)(bb) of the Waste Management Act 1996 is not applicable to this development.

Section 40(4)(c) ((c) the best available technology not entailing excessive cost will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned)of the Waste Management Act 1996 are met.

In terms of BAT, the relevant reference document is "**Pollution Prevention and Control Reference Document on Best Available Techniques for the Waste Treatments Industries, August 2006"**. It is considered that the Cement solidification/stabilisation process as described in D.2 complies with the processes as described in Section 4.3.2.4 of this BAT document. However it should be noted that the proposed percentages as described in this section are much higher than those found to be suitable for this project.

The BAT specific treatments for the physico-chemical treatment of solid wastes as outlined in Section 5.2, BAT points 85-90, particularly point 90 are applicable to this project.

And further to this the specific treatments for the physico-chemical treatment of contaminated soil, BAT points 91-94 are covered in the EMP Appendix 2 - Attachment C, Attachment D.2 including trial mixing process.

The UK Environment Agency Guidance on the use of Stabilisation/Solidification for the Treatment of Contaminated Soil (2004) would be considered the best practice guidance for this type of project.

Section 40(4)(cc) ((cc) the activity concerned is consistent with the objectives of the relevant waste management plan or the hazardous waste management plan, as the
case may be, and will not prejudice measures taken or to be taken by the relevant local authority or authorities for the purpose of the implementation of any such plan) of the Waste Management Act 1996 are met.

The proposed development is consistent with the following objectives of the Southern Region Waste Management Plan 2015 – 2021:

-Strategic Objective E – the promotion of sustainable waste management in keeping with the waste hierarchy and the moved towards a circular economy and greater self-sufficiency – the proposed activity occupies the highest tier possible on the waste hierarchy for the material in question and display self sufficiency and proximity due to it being managed on the site from where it was generated
-Policy E14 - ….All proposed sites for backfilling activities must comply with environmental protection criteria set out in the plan – the proposed activity will be subject to authorisation by the EPA thus ensuring a legislative footing for environmental protection related to these works

Please see Attachments L.2 on how requirements of Section 40(4)(D) ((d) if the applicant is not a local authority, the corporation of a borough that is not a county borough ,or the council

of an urban district, subject to subsection (8), he or she is a fit and proper person to hold a waste licence)of the Waste Management Act 1996 are met.
The Port of Cork Company has secured funding to complete both the construction and operational stages of the Inner Bantry Harbour Development Phase 1 as per section 53 and as such meets the requirements Section 40(4)(e) of the Waste Management Act 1996
Please see Attachments G.2 on how requirements of Section 40(4)(f) (energy will be used efficiently in the carrying on of the activity concerned) of the Waste Management Act 1996 are met.

Please see Attachments I.5 on how requirements of Section 40(4)(g) (any noise from the activity concerned will comply with, or will not result in the contravention of,any regulations under section 106 of the Act of 1992) of the Waste Management Act 1996 are met.

Please see Attachment J on how requirements of Section 40(4)(h) (necessary measures will be taken to prevent accidents in the carrying on of the activity concerned and, where an accident occurs, to limit its consequences for the environment) of the Waste Management Act 1996 are met.

Please see Attachment K on how requirements of Section 40(4)(i)(necessary measures will be taken upon the permanent cessation of the activity concerned (including such a cessation resulting from the abandonment of the activity) to avoid any risk of environmental pollution and return the site of the activity to a satisfactory state) of the Waste Management Act 1996 are met.

Please see the QRA in Appendix on how requirements of Section 40(4)(J) (that the intended method of treatment is acceptable from the point of view of environmental protection, in particular when the method is not in accordance with section 32(1) of the Act) of the Waste Management Act 1996 are met.

Please see Attached AA screening report and NIS prepared for the Inner Bantry Harbour Development Phase 1

Attachment L.2 Fit and Proper Person

It is confirmed that neither Tim Murphy (Project and Development Engineer, Port of Cork Company) nor Denis Healy (Manager Engineering Services, Port of Cork) nor (Henry Kingston, Marine Engineer Port of Cork Company) of the Port of Cork Company (the applicant) nor other relevant person have been convicted under the Waste Management Act 1996, as amended, the EPA Act 1992, as amended, the Local Government (Water Pollution) Acts 1977 and 1990 or the Air Pollution Act 1987.

Please note that site management will be under taken by the Port of Cork Company and specifically Mr. Denis Healy – Manager Engineering Services, Port of Cork - Fellow of Engineers Ireland , Mr. Henry Kingston – Marine Engineer, Port of Cork, Mr Tim Murphy .- Project and Development Engineer, Port of Cork. The Port of Cork also retain Consultants with Specialist Skills to advise as required. Further details on the applicant's technical competence can be found in Attachment C.1

Please see details of applicant's ability to meet any financial commitments or liabilities that may have been or will be entered into or incurred in carrying on the activity to which the application relates or in consequence of ceasing to carry out that activity in Attachment K.

Attachment L.3 Waste hierarchy

In relation to the waste hierarchy, it is not possible to prevent the creation of waste as the primary function of the dredging activity is to remove material and a certain amount of this material is contaminated and requires treatment.

T he applicant is of the view that the "**RECOVERY"** of dredge material is undertaken by the Stabilisation and Solidification treatment and the placement of the treated material into the structures as outlined in Attachment D.2

It is expected that the a small amount of waste items (tyres, debris) will be encountered during the dredging activity that come under the "**Other recovery**" and "**Disposal**" categories. Further detail is available in G.2 and D.1.

The applicant does not consider that the proposed facility represents a departure from the hierarchy but rather provides the requisite infrastructure to ensure adherence with it. The waste hierarchy, as outlined in Section 21A of the Act, is applied as follows:

The applicant acknowledges the requirements relating to the recovery of waste as set out in Section 29 (2A) of the Acts.

Waste Hierarchy	Activity
Prevention	Not possible as material has to be dredged as part of project.
Preparing for Re-use	Not considered applicable to the proposed development
Recovery	Treatment of finer grained dredge material with cement to stabilise and solidify for recovery as engineered backfill with potential contamination immobilised and retardation. The placement of the treated engineered backfill material behind and into the various structures
Other Recovery (including energy recovery)	A small amount of waste items (tyres/other debris?) are expected to be encountered recovered during the dredging activity that will be removed from site and which may be managed through other recovery processes in appropriate facilities
Disposal	A small amount of waste items (debris) will be disposed of offsite during the dredging activity

Attachment L.4 Principles of self-sufficiency and proximity

As per Article 16 of 2008/98/EC the Principles of self-sufficiency and proximity broadly met where the dredge spoil material to be managed is being done so in the immediate proximity of where is it generated and in a manner that does not rely on other third party facilities. The proposed recovery of material onsite takes into account the geographical circumstances of alternative waste disposal installations as described in Attachment D.2 Alternatives.

All dredge spoil is being treated on site and reused within the licence area as a construction material, thus contributing to the principle of self sufficiency. In terms of proximity, the use of the dredge material within the licence boundary achieves the best case scenario of not moving waste offsite