

本署檔號
OUR REF: (28) in Annex (1) to EP2/G/A/146 Pt. 8
來函檔號
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環境保護署分處

香港灣仔
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19 January 2015

By Registered Post & Fax : 3188 6614

Highways Department

**Environmental Impact Assessment (EIA) Ordinance, Cap. 499
Application for Variation of an Environmental Permit**

**Project Title: Hong Kong-Zhuhai-Macao Bridge – Hong Kong Boundary Crossing Facilities
(Application No. VEP-463/2015)**

I refer to your above application received on 16 January 2015 for variation of an environmental permit under Section 13(1) of the EIA Ordinance.

Pursuant to Section 13(5) of the EIA Ordinance, we have amended the Environmental Permit (EP-353/2009/G). I attach the Environmental Permit as amended (No. EP-353/2009/H) for your use.

Under Section 15 of the EIA Ordinance, the amended Environmental Permit will be placed on the EIA Ordinance Register. It will also be placed on the EIA Ordinance website (<http://www.epd.gov.hk/eia/>).

Please note that if you are aggrieved by any of the conditions imposed in this Permit, you may appeal under Section 17 of the EIA Ordinance within 30 days of receipt of this permit.

Should you have any queries on the above application, please contact my colleague Mr. Lawrence NGO at 2835 1751.

Yours faithfully,

(Louis P.L. CHAN)

Principal Environmental Protection Officer
for Director of Environmental Protection

Encl.

ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE (CHAPTER 499)

Section 10 and 13

環境影響評估條例 (第499章) 第10條及13條

ENVIRONMENTAL PERMIT TO CONSTRUCT AND OPERATE A DESIGNATED PROJECT 建造及營辦指定工程項目的環境許可證

PART A (MAIN PERMIT)

A部 (許可證主要部分)

Pursuant to Section 10 of the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection (the Director) granted the Environmental Permit (No. EP-353/2009) to the Highways Department (hereinafter referred to as the "Permit Holder") on 4 November 2009. Pursuant to Section 13 of the EIAO, the Director amends the Environmental Permit (No. EP-353/2009/G) based on the Application No. VEP-463/2015. The amendments, described below, are incorporated into this Environmental Permit (No. EP-353/2009/H). This Environmental Permit as amended is for the construction and operation of the designated project described in Part B of this Permit subject to the conditions specified in and attached to Part C of this Permit. The issue of this environmental permit is based on the documents, approvals or permissions described below:

根據環境影響評估條例(條例)第10條的規定，環境保護署署長(署長)於2009年11月4日將環境許可證編號EP-353/2009 批予路政署(下稱"許可證持有人")。根據條例第13條的規定，署長因應更改環境許可證的申請編號VEP-463/2015修訂環境許可證編號 EP-353/2009/G。以下修訂已包含在本環境許可證編號 EP-353/2009/H內。本經修訂的環境許可證，只適用於建造本許可證B部所說明的指定工程項目，並須遵守本許可證C部所說明及附載的條件。本環境許可證是依據下列文件、批准或許可而簽發：

Application No. 申請書編號	VEP-463/2015
Document in the Register: 登記冊上的文件:	<ol style="list-style-type: none"> 1. Project Profile – "Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities" (Register No.: PP-346/2008) 工程項目簡介 — "港珠澳大橋香港口岸" (登記冊編號: PP-346/2008) 2. Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities - Environmental Impact Assessment (EIA) Report, Executive Summary, Environmental Monitoring and Audit Manual (Register No.: AEIAR-145/2009) Hereinafter referred to as "the EIA Report" 港珠澳大橋香港口岸 - 環境影響評估(環評)報告，行政摘要，環境監察及審核手冊 (登記冊編號: AEIAR-145/2009) 下稱"環評報告"

Application No. 申請書編號	VEP-463/2015
	<p>3. Application for Environmental Permit on 15 June 2009 (Application No.: AEP-353/2009) 許可證持有人於 2009 年 6 月 15 日提交的環境許可證申請文件(申請書編號: AEP-353/2009)</p> <p>4. The Director's letter of approval of the EIA Report dated 23 October 2009 referenced (61) in Ax(1) to EP2/N9/A/146 II 署長於 2009 年 10 月 23 日簽發的批准環評報告的信件檔案編號 (61) in Ax(1) to EP2/N9/A/146 II</p> <p>5. Application for Variation of an Environmental Permit No. VEP-315/2010 and attached documents submitted by the Permit Holder on 11 June 2010 許可證持有人於 2010 年 6 月 11 日提交更改環境許可證申請編號 VEP-315/2010 和附件</p> <p>6. Environmental Permit Issued on 24 June 2010 (No. EP-353/2009/A) 於 2010 年 6 月 24 日簽發的環境許可證(編號 EP-353/2009/A)</p> <p>7. Application for Variation of an Environmental Permit on 27 October 2010 (Application No. VEP-327/2010) 許可證持有人於 2010 年 10 月 27 日提交的更改環境許可證申請文件(申請書編號 VEP-327/2010)</p> <p>8. Environmental Permit Issued on 16 November 2010 (No. EP-353/2009/B) 於 2010 年 11 月 16 日簽發的環境許可證(編號 EP-353/2009/B)</p> <p>9. Application for Variation of an Environmental Permit on 21 November 2011 (Application No. VEP-343/2011) 許可證持有人於 2011 年 11 月 21 日提交的更改環境許可證申請文件(申請書編號 VEP-343/2011)</p> <p>10. Environmental Permit Issued on 25 November 2011 (No. EP-353/2009/C) 於 2011 年 11 月 25 日簽發的環境許可證(編號 EP-353/2009/C)</p> <p>11. Application for Variation of an Environmental Permit on 27 February 2012 (Application No. VEP-355/2012) 許可證持有人於 2012 年 2 月 27 日提交的更改環境許可證申請文件(申請書編號 VEP-355/2012)</p> <p>12. Application for Variation of an Environmental Permit on 8 October 2012 (Application No. VEP-380/2012) 許可證持有人於 2012 年 10 月 8 日提交的更改環境許可證申請文件(申請書編號 VEP-380/2012)</p> <p>13. Application for Variation of an Environmental Permit on 18 April 2013 (Application No. VEP-402/2013)</p>



Application No. 申請書編號	VEP-463/2015
	<p>許可證持有人於 2013 年 4 月 18 日提交的更改環境許可證申請文件(申請書編號 VEP-402/2013)</p> <p>14. Application for Variation of an Environmental Permit on 29 July 2013 (Application No. VEP-410/2013) 許可證持有人於 2013 年 7 月 29 日提交的更改環境許可證申請文件(申請書編號 VEP-410/2013)</p> <p>15. Application for Variation of an Environmental Permit on 16 January 2015 (Application No. VEP-463/2015) 許可證持有人於 2015 年 1 月 16 日提交的更改環境許可證申請文件(申請書編號 VEP-463/2015)</p>

Application No. 申請書編號	Date of Application 申請日期	List of Amendments Incorporated into this Environmental Permit 已包含在本環境許可證內的修訂項目	Date of Amendment 修訂日期
VEP-315/2010	11 June 2010 2010 年 6 月 11 日	<p>(1) Add Conditions 2.12, 3.7A and 3.17A to 3.17L to Part C of the Environmental Permit (No. EP-353/2009) (一) 加入環境許可證(編號 EP-353/2009) C 部的第 2.12, 3.7A 及 3.17A 至 3.17L 項條件</p> <p>(2) Vary Conditions 1.7, 3.1, 3.3, 3.18, 3.19, 3.21 and 3.22 in Part C of the Environmental Permit (No. EP-353/2009) (二) 更改環境許可證(編號 EP-353/2009) C 部的第 1.7, 3.1, 3.3, 3.18, 3.19, 3.21 及 3.22 項條件</p> <p>(3) Add Figures 11 to 29 to the Environmental Permit (No. EP-353/2009) (三) 加入環境許可證(編號 EP-353/2009) 圖 11 至 29</p>	24 June 2010 2010 年 6 月 24 日
VEP-327/2010	27 October 2010 2010 年 10 月 27 日	<p>(1) Delete Conditions 2.12, 3.7A to 3.17, 3.17A and 3.20 to Part C of the Environmental Permit (No. EP-353/2009/A) (一) 刪除環境許可證(編號 EP-353/2009/A) C 部的第 2.12, 3.7A to 3.17, 3.17A 及 3.20 項條件</p> <p>(2) Vary Conditions 3.1, 3.17B, 3.17F, 3.17J, 3.18, 3.19 and 3.22 to Part C of the Environmental Permit (No. EP-353/2009/A)</p>	16 November 2010 2010 年 11 月 16 日

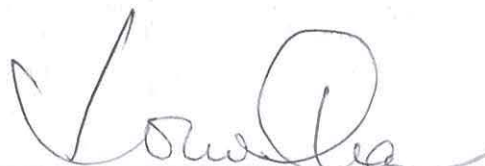
Application No. 申請書編號	Date of Application 申請日期	List of Amendments Incorporated into this Environmental Permit 已包含在本環境許可證內的修訂項目	Date of Amendment 修訂日期
		<p>(二) 更改環境許可證(編號 EP-353/2009/A) C 部的第 3.1, 3.17B, 3.17F, 3.17J, 3.18, 3.19 及 3.22 項條件</p> <p>(3) Delete Figure 2 to 7, 9 to 10 of the Environmental Permit (No. EP-353/2009/A)</p> <p>(三) 刪除環境許可證(編號 EP-353/2009/A)圖 2 至 7 及 9 至 10</p> <p>(4) Vary Figure 22, 23, 25 to 27 and 29 of the Environmental Permit (No. EP-353/2009/A)</p> <p>(四) 更改環境許可證(編號 EP-352/2009/A)圖 22, 23, 25 至 27 及 29</p> <p>(5) Add Figure 21a and 27a to Environmental Permit (EP-353/2009/A)</p> <p>(五) 加入環境許可證(編號 EP-353/2009/A) 圖 21a 及 27a</p>	
VEP-343/2011	21 November 2011 2011 年 11 月 21 日	<p>(1) Vary Conditions 1.7 and 3.17B to Part C of the Environmental Permit (No. EP-353/2009/B)</p> <p>(一) 更改環境許可證(編號 EP-353/2009/B) C 部的第 1.7 及 3.17B 項條件</p> <p>(2) Vary Figure 24 of the Environmental Permit (No. EP-353/2009/B)</p> <p>(二) 更改環境許可證(編號 EP-352/2009/B)圖 24</p>	25 November 2011 2011 年 11 月 25 日
VEP-355/2012	27 February 2012 2012 年 2 月 27 日	<p>(1) Vary Conditions 1.7, 3.17B, 3.18, 3.19 and 3.22 to Part C of the Environmental Permit (No. EP-353/2009/C)</p> <p>(一) 更改環境許可證(編號 EP-353/2009/C) C 部的第 1.7, 3.17B, 3.18, 3.19 及 3.22 項條件</p> <p>(2) Add Conditions 3.22A to 3.22 F to Part C of the Environmental Permit (No. EP-353/2009/C)</p> <p>(二) 加入環境許可證(編號 EP-353/2009/C) C 部的第 3.22A 至 3.22F 項條件</p> <p>(3) Vary Figure 1 of the Environmental Permit (No. EP-353/2009/C)</p> <p>(三) 更改環境許可證(編號 EP-352/2009/C)圖 1</p>	7 March 2012 2012 年 3 月 7 日

Application No. 申請書編號	Date of Application 申請日期	List of Amendments Incorporated into this Environmental Permit 已包含在本環境許可證內的修訂項目	Date of Amendment 修訂日期
		(4) Add Figures 30 & 31 to Environmental Permit (No. EP-353/2009/C) (四) 加入環境許可證(編號 EP-352/2009/C)圖 30 及 31	
VEP-380/2012	8 October 2012 2012 年 10 月 8 日	(1) Vary Conditions 1.7 and 3.17C to Part C of the Environmental Permit (No. EP-353/2009/D) (一) 更改環境許可證(編號 EP-353/2009/D) C 部的第 1.7 及 3.17C 項條件 (2) Add Figures 32 & 33 to Environmental Permit (No. EP-353/2009/D) (二) 加入環境許可證(編號 EP-352/2009/D)圖 32 及 33	16 October 2012 2012 年 10 月 16 日
VEP-402/2013	18 April 2013 2013 年 4 月 18 日	(1) Vary Conditions 1.7 and 3.17C to Part C of the Environmental Permit (No. EP-353/2009/E) (一) 更改環境許可證(編號 EP-353/2009/E) C 部的第 1.7 及 3.17C 項條件 (2) Replace Figure 32 and Figure 33 to Environmental Permit (No. EP-353/2009/E) with the amended Figure 32 (二) 以修改之圖 32 取代環境許可證(編號 EP-352/2009/E)圖 32 及 33	24 April 2013 2013 年 4 月 24 日
VEP-410/2013	29 July 2013 2013 年 7 月 29 日	(1) Vary Part B and Condition 1.7 to Part C of the Environmental Permit (No. EP-353/2009/F) (一) 更改環境許可證(編號 EP-353/2009/F) B 部及 C 部的第 1.7 項條件 (2) Add Conditions 4.3 to 4.6 to Part C of the Environmental Permit (No. EP-353/2009/F) (二) 在環境許可證(編號 EP-353/2009/F) C 部加入第 4.3 至 4.6 項條件	6 August 2013 2013 年 8 月 6 日
VEP-463/2015	16 January 2015 2015 年 1 月 16 日	(1) Vary Part B and Condition 1.7 to Part C of the Environmental Permit (No. EP-353/2009/G) (一) 更改環境許可證(編號 EP-353/2009/G) B 部及 C 部的第 1.7 項條件 (2) Add Conditions 3.24 to 3.26 to Part C of the	19 January 2015 2015 年 1 月 19 日



Application No. 申請書編號	Date of Application 申請日期	List of Amendments Incorporated into this Environmental Permit 已包含在本環境許可證內的修訂項目	Date of Amendment 修訂日期
		Environmental Permit (No.EP-353/2009/G) (二) 在環境許可證(編號 EP-353/2009/G) C 部 加入第 3.24 至 3.26 項條件	

19 January 2015

Date
日期


(Louis P.L. CHAN)

Principal Environmental Protection Officer
for Director of Environmental Protection

環境保護署署長

(首席環境保護主任 陳欽林代行)



PART B (DESCRIPTION OF DESIGNATED PROJECT)**B部 (指定工程項目的說明)**

Hereunder is the description of the designated project mentioned in Part A of this environmental permit (hereinafter referred to as "the Permit"):

下列為本環境許可證(下稱“許可證”)A部所提述的指定工程項目的說明:

Title of Designated Project 指定工程項目的名稱	Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Boundary Crossing Facilities (HKBCF) (This designated project is hereafter referred to as "the Project") 港珠澳大橋香港口岸 (本指定工程項目下稱“工程項目”)
Nature of Designated Project 指定工程項目的性質	<ol style="list-style-type: none"> 1. Reclamation works (including associated dredging works) more than 5 ha in size; 2. A dredging operation exceeding 500,000m³; 3. A road bridge more than 100m in length between abutments; 4. A railway and its associated stations; 5. A railway tunnel more than 800m in length between portals; and 6. An activity for the reuse of treated sewage effluent from a treatment plant. (一) 面積超過5公頃的填海工程(包括相聯挖泥工程); (二) 挖泥量超過500,000立方米的挖泥作業; (三) 橋台之間的長度超過100米的行車橋樑或鐵路橋樑; (四) 鐵路及其相聯車站; (五) 入口之間的長度超過800米的行車隧道或鐵路隧道;及 (六) 對從處理廠流出的污水進行再使用的活動。
Location of Designated Project 指定工程項目的地點	Northeast of Chek Lap Kok The location of the Project is shown in Figure 1 of this Permit. 赤鱗角之東北面 工程項目的地點展示於本許可證圖1內
Scale and Scope of Designated Project 指定工程項目的規模和範圍	The project mainly comprises the followings: <ol style="list-style-type: none"> (i) Dredging and reclamation at the northeast waters off the Airport Island to provide a land platform for the development of the HKBCF and the southern landfall of the Tuen Mun Chek Lap Kok Link; (ii) cargo processing facilities including kiosks for clearance of goods vehicles, customs inspection platform, X-ray buildings and related supporting facilities; (iii) passenger related facilities including processing kiosks and examination facilities for private cars and coaches, passengers clearance building and halls and related supporting facilities;

- (iv) accommodation for and facilities of the Government departments providing services in connection with the HKBCF;
- (v) provision of transport and miscellaneous facilities inside the HKBCF including public transport interchange, transport drop-off and pick-up areas, vehicle holding areas, passenger queuing areas, road networks, footbridges, fencing, sewage system including reclaimed water treatment facility, drainage systems, water supply system, utilities, electronic system, traffic control and surveillance system and related supporting facilities;
- (vi) provision of road access for connection of the HKBCF to the Hong Kong Link Road, the Tuen Mun-Chek Lap Kok Link and the Airport;
- (vii) reprovisioning of the affected Airport's facilities such as the existing Fire Services Department's East Sea Rescue Berth; and
- (viii) provision of other facilities for connection with the Airport such as an Automated People Mover system (i.e. a railway system) to connect the Airport Terminal with the HKBCF.

工程項目主要範圍包括以下各項： -

1. 在機場島東北水域進行挖泥及填海工程，以開拓土地興建香港口岸及屯門至赤鱗角連接路的南面填海區；
2. 貨物處理設施，包括貨車清關檢查亭、海關驗貨台、X 光檢查大樓及相關配套設施；
3. 與旅客有關的設施，包括私家車和旅遊巴士過關亭和檢查設施、旅檢大樓和旅客出入境大堂及相關配套設施；
4. 提供與香港口岸有關服務的政府部門的辦公地方和設施；
5. 在香港口岸設置運輸和其他設施，包括公共運輸交匯處、車輛上落客區、車輛停候區、旅客輪候區、道路網絡、行人天橋、圍網、污水系統(包括再造水處理設施)、排水系統、供水系統、公用設施、電子系統、交通管制及資訊系統及相關配套設施；
6. 鋪築道路以連接香港口岸和港珠澳大橋香港接線、屯門至赤鱗角連接路及機場；
7. 重置受工程計劃影響的機場設施，例如現有的消防處海上救援東泊位；及
8. 設置其他設施以連接機場，例如延展現有的旅客捷運系統（即鐵路系統）以便連接機場客運大樓和香港口岸。



PART C (PERMIT CONDITIONS)

1. General Conditions

- 1.1 The Permit Holder and any person working on the Project shall comply with all conditions set out in this Permit. Any non-compliance by any person may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap.499) and may become the subject of appropriate action being taken under the Ordinance.
- 1.2 The Permit Holder shall ensure full compliance with all legislation from time to time in force including, without limitation to, the Noise Control Ordinance (Cap. 400), Air Pollution Control Ordinance (Cap. 311), Water Pollution Control Ordinance (Cap. 358), Dumping at Sea Ordinance (Cap. 466) and Waste Disposal Ordinance (Cap. 354). This Permit does not of itself constitute any ground of defence against any proceedings instituted under any legislation or imply any approval under any legislation.
- 1.3 The Permit Holder shall make copies of this Permit together with all documents referred to in this Permit and the documents referred to in Part A of the Permit readily available at all times for inspection by the Director or his authorised officers at all sites/offices covered by this Permit. Any reference to the Permit shall include all documents referred to in the Permit and also the relevant documents in the Register.
- 1.4 The Permit Holder shall give a copy of this Permit to the person(s) in charge of the site(s) and ensure that such person(s) fully understands all conditions and all requirements incorporated in the Permit. The site(s) refers to site(s) of construction of the Project and shall mean the same hereafter.
- 1.5 The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).
- 1.6 The Permit Holder shall construct and operate the Project in accordance with the project descriptions in Part B of this Permit.
- 1.7 The Permit Holder shall ensure that the Project is designed, constructed and operated in accordance with the information and recommendations described in the EIA Report, the application documents including all attachments (Application No. AEP-353/2009, Application No. VEP-315/2010, Application No. VEP-327/2010, Application No. VEP-343/2011, Application No. VEP-355/2012, Application No. VEP-380/2012, Application No. VEP-402/2013, Application No. VEP-410/2013 and Application No. VEP-463/2015), other relevant documents in the Register; and the information or mitigation measures described in this Permit and mitigation measures to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in this Permit, and mitigation measures to be recommended under on-going surveillance and monitoring activities during all stages of the Project. Where recommendations referred to in the



documents of the Register are not expressly referred to in this Permit, such recommendations are nevertheless to be implemented unless expressly excluded or amended in this Permit.

- 1.8 All deposited submissions, as required under this Permit, shall be rectified and resubmitted in accordance with the comments, if any, made by the Director, within one month of the receipt of the Director's comments or otherwise as specified by the Director.
- 1.9 All submissions approved by the Director, all submissions deposited without comments by the Director, and all submissions rectified in accordance with comments by the Director under this Permit shall be construed as part of the permit conditions described in Part C of this Permit. Any variation of the submissions shall be approved by the Director in writing or as prescribed in the relevant permit conditions. Any non-compliance with the submissions may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap. 499). All submissions or any variation of the submissions shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) referred to in Conditions 2.1 and 2.2 below, before submitting to the Director under this Permit.
- 1.10 The Permit Holder shall release all finalized submissions as required under this Permit, to the public by depositing copies in the Environmental Impact Assessment Ordinance Register Office, or in any other places, or any internet websites as specified by the Director, or by any other means as specified by the Director for public inspection. For this purpose, the Permit Holder shall provide sufficient copies of the submissions.
- 1.11 The Permit Holder shall notify the Director in writing the commencement date of construction of the Project no later than one month prior to the commencement of construction of the Project. The Permit Holder shall notify the Director in writing immediately if there is any change of the commencement date of the construction.
- 1.12 All submissions to the Director required under this Permit shall be delivered either in person or by registered mail to the Environmental Impact Assessment Ordinance Register Office (currently at 27/F, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong). Electronic copies of all finalized submissions required under this Permit shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 1.3 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies.
- 1.13 For the purpose of this Permit, "commencement of construction" does not include works related to site clearance and preparations, or other works as agreed by the Director.

Specific Conditions

2. Measures and Submissions before Commencement of Construction

Employment of Environmental Monitoring and Audit (EM&A) Personnel

- 2.1 An Environmental Team (ET) shall be established by the Permit Holder no later than 6 weeks before the commencement of construction of the Project. The ET shall not be in any way an associated



body of the Contractor or the Independent Environmental Checker (IEC) for the Project. The ET shall be headed by an ET Leader. The ET leader shall be a person who has at least 7 years of experience in environmental monitoring and auditing (EM&A) or environmental management. The ET and the ET Leader shall be responsible for the implementation of the EM&A programme in accordance with the EM&A requirements as contained in the EM&A Manual of the Project. The ET Leader shall keep a contemporaneous log-book of each and every instance or circumstance or change of circumstances, which may affect the compliance with the recommendations of the EIA Report and this Permit. The ET Leader shall notify the IEC within one working day of the occurrence of any such instance or circumstance or change of circumstances. The ET Leader's log-book shall be kept readily available for inspection by all persons assisting in supervision of the implementation of the recommendations of the EIA Report and this Permit or by the Director or his authorized officers. Failure to maintain records in the log-book, failure to discharge the duties of the ET Leader as defined in the EM&A Manual or failure to comply with this Condition would entitle the Director to require the Permit Holder by notice in writing to replace the ET Leader. Failure by the Permit Holder to make replacement, or further failure to keep contemporaneous records in the log-book despite the employment of a new ET Leader may render the Permit liable to suspension, cancellation or variation.

- 2.2 An IEC shall be employed by the Permit Holder no later than 6 weeks before commencement of construction of the Project. The IEC shall not be in any way an associated body of the Contractor or the ET for the Project. The IEC shall be a person who has at least 7 years of experience in EM&A or environmental management. The IEC shall be responsible for duties defined in the EM&A Manual and shall audit the overall EM&A performance, including the implementation of all environmental mitigation measures, submissions required in the EM&A Manual, and any other submissions required under this Permit. In addition, the IEC shall be responsible for verifying the environmental acceptability of permanent and temporary works, relevant design plans and submissions under this Permit. The IEC shall verify the log-book(s) mentioned in Condition 2.1 of this Permit. The IEC shall notify the Director by fax, within one working day of receipt of notification from the ET Leader of each and every occurrence, change of circumstances or non-compliance with the EIA Report and this Permit, which might affect the monitoring or control of adverse environmental impacts from the Project. In the case where the IEC fails to so notify the Director of the same, fails to discharge the duties of the IEC as defined in the EM&A Manual or fails to comply with this Condition, the Director may require the Permit Holder by notice in writing to replace the IEC. Failure to replace the IEC as directed or further failure to so notify the Director despite employment of a new IEC may render the Permit liable to suspension, cancellation or variation. Notification by the Permit Holder is the same as notification by the IEC for the purpose of this Condition.

Management organization of main construction companies

- 2.3 The Permit Holder shall, at least 2 weeks before the commencement of construction of each relevant contract under the Project, inform the Director in writing the management organization of the main construction companies and/or any form of joint ventures associated with the construction of the corresponding part of the Project. The submitted information shall include at least an organization chart, names of responsible persons and their contact details.

Submissions of specification and plan on marine ecological mitigation measures



- 2.4 The Permit Holder shall advance the preparation works for the designation of the marine park in the Brothers Islands, including a study on the details of the designation and consultation with stakeholders, on the understanding that designation of the marine park would immediately follow the completion of the Project.
- 2.5 The Permit Holder shall deposit with the Director, at least 2 weeks before the commencement of the construction of the Project, three hard copies and one electronic copy of a proposal, including the proposed size and management plan, of the proposed marine park in the Brothers Islands in consultation with the Director of Agriculture, Fisheries and Conservation.
- 2.6 The Permit Holder shall deposit with the Director prior to the commencement of marine works of the Project, three hard copies and one electronic copy of a Dolphin Watching Plan. The plan shall include regular inspection of the silt curtains, visual inspection of the waters surrounded by the curtains, and an action plan shall be devised to cope with any unpredicted incidents such as the case that Chinese White Dolphin is found within the water surrounded by the silt curtains.
- 2.7 The Permit Holder shall deposit with the Director at least 1 month before the commencement of construction of the Project, three hard copies and one electronic copy of a Spill Response Plan detailing the actions to be taken in the event of accidental spillage of oil or other hazardous chemicals from construction activities including vessels operating for the Project, with specific provisions for protecting marine ecology and the Chinese White Dolphins.
- 2.8 To minimize the chance of vessel collision and the disturbance to the Chinese White Dolphins, the Permit Holder shall deposit with the Director, at least 2 weeks before the commencement of the construction of the Project, three hard copies and one electronic copy of a plan showing the regular marine travel routes of vessels moving to and from the Project work sites. Any subsequent changes to the regular routes shall be verified by the IEC as conforming to the requirements in the EIA Report and deposited with the Director.

Landscape and Visual Plan

- 2.9 The Permit Holder shall deposit with the Director, at least 1 month before the commencement of construction of relevant part of the Project, three hard copies and one electronic copy of a landscape and visual plan incorporating aesthetic architectural design on buildings structures and related infrastructure of the Project, streetscape elements, planting proposals and other measures including night-time lighting control.

Waste management plan

- 2.10 The Permit Holder shall deposit with the Director, at least 1 month before the commencement of the construction of the project, three hard copies and one electronic copy of a waste management plan (WMP) for the construction stage of the Project. The WMP shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall include the recommended mitigation measures on waste management in the EIA Report. The WMP shall indicate the disposal location(s) of all surplus excavated spoil and other waste. A trip ticket system shall be included in the WMP. Surplus excavated spoil and other wastes shall only be disposed of



at designated disposal locations unless otherwise approved by the Director. All measures recommended in the WMP shall be fully and properly implemented by the Permit Holder and any person working on the Project throughout the construction period.

Environmental Project Office

- 2.11 To oversee the cumulative environmental impacts arising from the Project and other concurrent projects in the adjoining area and to liaise closely with the mainland project teams for the HZMB Main Bridge, the Permit Holder shall set up an independent Environmental Project Office (ENPO) before the commencement of construction of the Project. No later than two months before the commencement of construction of the Project, the Permit Holder shall submit for the Director's approval a proposal on the setting up of the ENPO which should include the main objectives of the ENPO, its organizational structure and lines of communication and the personnel involved. The Permit Holder shall set up the ENPO in accordance with the approved proposal.

- 2.12 Not used.

3. Submissions or Measures during Construction of the Project

Measures to mitigate disturbance to Chinese White Dolphins

- 3.1 A dolphin exclusion zone of 250m shall be implemented around the Project during the installation of the perimeter silt curtains around the HKBCF site and any re-deployment of the perimeter silt curtains. Prior to the start of the works, dolphin observer(s) shall scan the exclusion zone for at least 30 minutes. If dolphins are observed in the exclusion zone, the installation/re-deployment works shall be delayed until they have left the area. If dolphins are observed within the exclusion zone during installation/re-deployment works, the relevant part of the works shall cease until the dolphins have left the area. The dolphin observer(s) shall have relevant training on dolphin monitoring and shall be independent of the construction contractor. The dolphin observer(s) shall form part of the Environmental Team. Passive Acoustic Monitoring, using hydrophones or cetacean detectors, shall be used for the detection of dolphin outside the daylight hours.
- 3.2 Once the perimeter silt curtains as mentioned in Condition 3.1 above are installed or re-deployed, the Dolphin Watching Plan as deposited under Condition 2.6 of this Permit shall be implemented as part of the EM&A programme.
- 3.3 To minimize the acoustic disturbance to Chinese White Dolphins, silence piling equipment such as vibratory piler shall be used for installation of sheet pile structure into the seabed.
- 3.4 No underwater percussive piling shall be used for the Project.
- 3.5 All vessels within the work areas shall not travel at a speed higher than 10 knots.
- 3.6 Air compressors and other noisy equipment mounted on construction vessels shall be acoustically-decoupled.



3.7A Not used.

3.7 Not used.

3.8 Not used.

3.9 Not used.

3.10 Not used.

3.11 Not used.

3.12 Not used.

3.13 Not used.

3.14 Not used.

3.15 Not used.

3.16 Not used.

3.17 Not used.

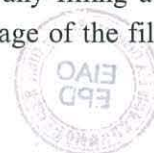
Measures to mitigate water quality impacts

3.17A Not used.

3.17B The Permit Holder shall construct the Project in accordance with Figures 11 to 28 of this Permit. The perimeter silt curtains as described in Figure 12 shall be installed around the HKBCF site before the commencement of marine works. No dredging works of marine sediment shall be carried out for the Project except for the construction of box culverts and seawalls at Portion D, the Fire Services Department (FSD) Rescue Berth and APM Tunnel. FSD Rescue Berth and APM shall not commence construction before the completion of reclamation of the HKBCF and TMCLKL southern landfall, unless with prior approval by the Director. The Permit Holder shall notify the Director in writing any proposed changes in the construction sequences and/or arrangements before implementation of such changes. The proposed changes shall be certified by the ET Leader and verified by the IEC as conforming to the information and requirements contained in the EIA Report.

3.17C Reclamation filling for the Project shall not proceed until at least 200m of leading seawall at the reclamation are formed above +2.2mPD, except for the sand blanket, unless otherwise agreed with the Director. The maximum daily filling rate of sand blanket shall be 24,000m³. During the sand blanket placement, cage type double layer silt curtains as described in Figure 32 shall be deployed around the filling points.

3.17D A layer of geotextile shall be placed on top of the seabed before any filling activities take place inside the cellular structures to form the seawall. To prevent spillage of the filling materials onto



the surrounding water, the conveyor belts shall be fitted with windboards and conveyor release points shall be covered with curtain.

- 3.17E Except for the filling of the cellular structures, not more than 15% public fill shall be used for reclamation filling below +2.5mPD during construction of the seawall. After the seawall is completed except for the 300m marine access as indicated in Figure 15 of this Permit, not more than 30% public fill shall be used for reclamation filling below +2.5mPD, unless otherwise agreed by the Director.
- 3.17F No more than 1 grab dredger with a maximum daily dredging rate of 7,200m³ shall be employed for the dredging operation at the FSD Rescue Berth.
- 3.17G No more than 2 grab dredgers with a maximum daily dredging rate of 12,000m³ shall be employed for the dredging operation at Portion D of the Project.
- 3.17H Only grab dredgers shall be used for dredging works in this Project. Each grab dredger shall be enclosed by a cage type silt curtain with steel enclosure as illustrated in Figure 8 of this Permit to reduce sediment loss to the surrounding environment during dredging operation.
- 3.17I No more than 5 filling barge trips per day shall be made with a maximum daily rate of 5000m³ for the filling operation at the FSD Rescue Berth.
- 3.17J Upon completion of 200m leading seawall, no more than a total of 60 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 60,000m³ for HKBCF and TM-CLKL southern landfall reclamation during the filling operation. Upon completion of the whole section of seawall except for the 300m marine access as indicated in Figure 15 of this Permit, no more than a total of 190 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 190,000m³ for the remaining filling operations for HKBCF and TM-CLKL southern landfall reclamation. To ensure that the cumulative maximum filling rate assumed in the EIA report shall not be exceeded, the Permit Holder shall submit, at least one week prior to the end of each calendar month, the anticipated daily filling rate for the coming month to the Environmental Project Office (ENPO) for approval. The actual maximum daily filling rate shall not exceed the approved filling rate by ENPO.
- 3.17K During the stone column installation, silt curtain shall be installed near the active stone column installation points as indicated in Figure 29 of this Permit. A layer of geotextile with stone blanket on top shall be placed on the seabed prior to stone column installation works.
- 3.17L To prevent grout leakage at the interfacing section between the stone column and the Tuen Mun Chek Lap Kok Link tunnel portion as indicated in Figure 23 of this Permit, grouting shall be applied in grout pipe by gravity method.

Measures to mitigate water quality impacts from re-deposition of Dredged Sediment in Sheet Pile Cellular Structures

- 3.18 The dredged sediment from the Project shall be disposed of inside the sheet pile cellular structures within the Project boundary or the re-deposition area described in Condition 3.22A of this Permit.



- 3.19 Before re-deposition the dredged sediment, a layer of geotextile shall be placed at the bottom of the sheet pile cellular structures to avoid the direct contact of the re-deposited sediment and the bottom sediment.
- 3.20 Not used.
- 3.21 A minimum of 2m thick sand fill or public fill shall be placed on the top of the contaminated sediment to protect and cover the sediment after re-deposition.
- 3.22 The dredged sediment shall not be disturbed after re-deposition. No piling works or deep foundation which may disturb the dredged sediment is allowed within the cellular structures as described in Condition 3.18 of this Permit.

Measures to mitigate water quality impacts from re-deposition of Dredged Sediment within Designated Re-deposition Area

- 3.22A The dredged sediment from Portion D shall be re-deposited at the re-deposition area as indicated in Figure 30 and Figure 31 of this Permit, within the Project boundary.
- 3.22B Prior to the erection of the steel sheet piles and re-deposition of sediment, silt curtain shall be installed around the area of the re-deposition subarea.
- 3.22C A layer of geotextile shall be placed on the seabed within the re-deposition subarea. Sand bund shall be placed around the boundary of the re-deposition subarea.
- 3.22D After the re-deposition of sediment within the re-deposition subarea, a layer of geotextile and a minimum 2m thick sand blanket shall be placed on top of the re-deposited sediment as indicated in Figure 31.
- 3.22E Field trial(s) shall be carried out to demonstrate that the removal of the temporary steel sheet piles walls would not cause adverse water quality impacts. A Trial Report shall be endorsed by the IEC and deposited to the Director. No removal of the steel sheet piles, except those involved in the field trial(s), shall be carried out before the Trial Report is endorsed by the IEC and is deposited to the Director.
- 3.22F The dredged sediment shall not be disturbed after re-deposition. No piling works or deep foundation which may disturb the dredged sediment is allowed within the re-deposition area as described in Condition 3.22A of this Permit.

Measures to mitigate air quality impacts during construction phase

- 3.23 The Permit Holder shall undertake watering at least 8 times per day on all exposed soil within the Project site and associated work areas throughout the construction phase.

Measures to mitigate environmental impacts from Floating Grout Production Facilities

- 3.24 The entire grouting process and materials unloading, loading and transfer shall be performed within



an enclosed system. The material storage tanks shall be fully covered / enclosed.

- 3.25 The Permit Holder shall not discharge any wastewater from the grouting production process or domestic sewage to the sea.
- 3.26 Apart from the air intakes for the ventilation fans, noisy equipment on the floating grout production facilities shall be housed below the ship deck / inside ship body or provided with enclosures. The air intakes for the ventilation fans and concrete pumps shall also be provided with acoustic decoupling measures.

4. Measures or Submissions for Operation of the Project

Emergency Response Plan for Spillage of Oil and Chemicals

- 4.1 The Permit Holder shall, no later than 2 months before the commencement of operation of the Project, deposit with the Director three sets of a detailed Emergency Response Plan (ERP) on how to prevent oil and chemical spillages caused by traffic incidents on the carriageway from entering into the waterbody. The ERP shall be verified by the IEC as conforming to the recommendations contained in the EIA Report.

Artificial Reef(s)

- 4.2 The Permit Holder shall, in consultation with the Director of Agriculture, Fisheries and Conservation, deploy artificial reef(s) with a total volume of not less than 10,800m³.

Treated Effluent Reuse for Toilet Flushing

- 4.3 The Permit Holder shall ensure the distribution system for the reclaimed water is only connected for the purpose of toilet flushing for the Hong Kong Boundary Crossing Facilities. The system shall not be connected to the Water Supplies Department's portable water distribution system.
- 4.4 To avoid cross contamination with Water Supplies Department's potable water distribution system, the Permit Holder shall ensure that the pipes for distributing the reclaimed water are clearly labeled with warning signs and notices, colour-coded, and of different pipes sizes to the potable water pipes so that physical connection of the two distribution systems would not be possible.
- 4.5 The Permit Holder shall ensure the quality of the reclaimed water shall meet the standards set out in Table 1 of this Permit.
- 4.6 There shall be no discharge of surplus reclaimed water into the sea. In the event of emergency, the surplus reclaimed water shall be diverted back to the inlet of the on-site sewage treatment plant.

5. Environmental Monitoring and Audit (EM&A) Requirements

- 5.1 The EM&A programme of the Project shall be implemented in accordance with the procedures and requirements as set out in the EM&A Manual of the approved EIA Report. Any proposed change to



the EM&A requirements or programme shall be justified by the ET leader and verified by the IEC as conforming to the information and requirements contained in the EM&A Manual and shall seek the prior approval from the Director before implementation.

- 5.2 Samples, measurements and necessary remedial actions shall be taken in accordance with the requirements of the EM&A Manual by:
- (a) conducting baseline environmental monitoring;
 - (b) conducting impact monitoring;
 - (c) carrying out remedial actions described in the Event/Action Plans of the EM&A Manual in accordance with the time frames set out in the Event/Action Plans, or as agreed by the Director, in case where specified criteria in the EM&A Manual are exceeded; and
 - (d) logging and keeping records of details of (a) to (c) above for all parameters within 3 working days of the collection of data or completion of remedial action(s), for the purpose of preparing and submitting the monthly EM&A Reports and to make available for inspection on site.
- 5.3 Three hard copies and one electronic copy of the Baseline Monitoring Report shall be submitted to the Director at least 2 weeks before commencement of construction of the Project. The submission shall be verified by the IEC. Additional copies of the submission shall be made available to the Director upon his request.
- 5.4 Three hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 10 working days after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director.
- 5.5 All environmental monitoring and audit data submitted under this Permit shall be true, valid and correct.
- 5.6 To ensure a high degree of transparency regarding the monitoring data and results in view of the public concern about the Project, all environmental monitoring and audit data and results and all submissions and performance test data and results required by this Permit shall be made available by the Permit Holder to the public through a dedicated web site to be set up by the Permit Holder under Condition 6.2 below, in the shortest practicable time and in no event later than 2 weeks after such information is available.

6. Electronic Reporting of EM&A Information

- 6.1 To facilitate public inspection of the Baseline Monitoring Report and monthly EM&A Reports via the EIAO Internet Website and at the EIAO Register Office, electronic copies of these Reports shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable



Document Format (PDF version 1.3 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hardcopies as described in Condition 5 of this Permit. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these Reports shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in these Reports shall be provided in the main text from where the respective references are made. All graphics in these Reports shall be in interlaced GIF, JPEG or PDF format unless otherwise agreed by the Director. The content of the electronic copies of these Reports must be the same as the hardcopies.

- 6.2 The Permit Holder shall, within six weeks to the commencement of construction of the Project, set up a dedicated web site and notify the Director in writing the Internet address, where the project information, all environmental monitoring and audit data and reports described in Condition 6.1 above and all finalized submissions and plans required under this Permit are to be placed. All environmental monitoring and audit data and reports described in Condition 6.1 above shall be made available to the public via this dedicated web site to be set up by the Permit Holder in the shortest possible time and in no event later than 2 weeks after the relevant environmental monitoring data and reports is/are collected or become available, unless otherwise agreed with the Director. All finalized submissions and plans shall be made available to the public via this dedicated web site to be set up by the Permit Holder in the shortest possible time and in no event later than 2 weeks after they are deposited with or approved by the Director as required under this Permit, unless otherwise agreed with the Director.
- 6.3 The Internet website as described in Condition 6.2 above shall enable user-friendly public access to the monitoring and project information including the project profile of the Project, the EIA report, the environmental permit(s), all environmental monitoring and audit data and report and all finalized submissions and plans required under this Permit. Unless otherwise agreed with the Director, the internet website shall have features capable of :
- (a) providing access to all environmental monitoring data collected since the commencement of works;
 - (b) searching by date;
 - (c) searching by types of monitoring data (e.g. noise, water and air quality); and
 - (d) providing hyperlinks to relevant monitoring data after searching.

Notes :

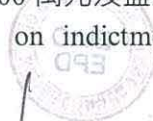
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1. This Permit consists of three parts, namely, Part A (Main Permit), Part B (Description of Designated Project) and Part C (Permit Conditions). Any person relying on this permit should obtain independent legal advice on the legal implications under the Ordinance, and the following notes are for general information only.



本許可證共有3部，即A部（許可證主要部分）；B部（指定工程項目的說明）及C部（許可證條件）。任何援引本許可證的人士須就環評條例的法律含意徵詢獨立法律意見，下述註解只供一般參考用。

2. If there is a breach of any conditions of this Permit, the Director or his authorized officer may, with the consent of the Secretary for the Environment, order the cessation of associated work until the remedial action is taken in respect of the resultant environmental damage, and in that case the Permit Holder shall not carry out any associated works without the permission of the Director or his authorized officer.
如違反本許可證的任何條件，署長或獲授權人員可在環境局局長的同意下勒令停止相關工程，直至許可證持有人為所造成的環境損害採取補救行動為止。在此情況下，許可證持有人未經署長或獲授權人員同意，不得進行任何相關工程。
3. The Permit Holder may apply under Section 13 of the Environmental Impact Assessment Ordinance (the "Ordinance") to the Director for a variation of the conditions of this Permit. The Permit Holder shall replace the original permit displayed on the Project site by the amended permit.
許可證持有人可根據環評條例第13條的規定向署長申請更改本許可證的條件。許可證持有人須把經修改的許可證替換在建築工地內展示的原有許可證。
4. A person who assumes the responsibility for the whole or a part of the Project may, before he assumes responsibility of the Project, apply under Section 12 of the Ordinance to the Director for a further environmental permit.
承擔指定工程項目整項或部分指定工程的責任的人，在承擔指定工程項目的責任前，可根據環評條例第12條的規定向署長申請新的環境許可證。
5. Under Section 14 of the Ordinance, the Director may with the consent of the Secretary for the Environment suspend, vary or cancel this Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site.
根據環評條例第14條的規定，署長可在環境局局長的同意下暫時吊銷、更改或取消本許可證。遭暫時吊銷、更改或取消的許可證必須從建築工地除下，不再展示。
6. If this Permit is cancelled or surrendered during construction or operation of the Project, another environmental permit must be obtained under the Ordinance before the Project could be continued. It is an offence under Section 26 (1) of the Ordinance to construct or operate a designated project listed in Schedule 2 of the Ordinance without a valid environmental permit.
如果本許可證在工程項目建造或營辦期間取消或交回，則在繼續建造或營辦工程項目之前，必須先根據環評條例規定取得另一份環境許可證。根據環評條例第26(1)條的規定，任何人在沒有有效環境許可證的情況下建造或營辦環評條例附表2所列明的指定工程項目，即屬犯罪。
7. Any person who constructs or operates the Project contrary to the conditions in the Permit, and is convicted of an offence under the Ordinance, is liable:
如任何人在違反本許可證的條件下建造或營辦工程項目，根據環評條例，即屬犯罪 -
 - (i) on a first conviction on indictment to a fine of \$2 million and to imprisonment for 6 months; 一經循公訴程序首次定罪，可處罰款 200 萬元及監禁 6 個月；
 - (ii) on a second or subsequent conviction on indictment to a fine of \$5 million and to imprisonment for 2 years;



- 一經循公訴程序第二次或其後每次定罪，可處罰款 500 萬元及監禁 2 年；
- (iii) on a first summary conviction to a fine at level 6 and to imprisonment for 6 months;
一經循簡易程序首次定罪，可處第 6 級罰款及監禁 6 個月；
- (iv) on a second or subsequent summary conviction to a fine of \$1 million and to imprisonment for 1 year; and
一經循簡易程序第二次或其後每次定罪，可處罰款 100 萬元及監禁 1 年；及
- (v) in any case where the offence is of a continuing nature, the court or magistrate may impose a fine of \$10,000 for each day on which he is satisfied the offence continued.
在任何情況下如該罪行屬連續性質，法院或裁判官可就其信納該罪行連續的每一天另處罰款 10,000 元。

8. The Permit Holder may appeal against any condition of this Permit under Section 17 of the Ordinance within 30 days of receipt of this Permit.

許可證持有人可在接獲本許可證後 30 天內，根據環評條例第 17 條就本許可證的任何條件提出上訴。

9. The Notes are for general reference only and that the Permit Holder should refer to the EIA Ordinance for details and seek independent legal advice.

上述註解只供一般參考用，欲知有關詳情，許可證持有人須參閱環評條例及徵詢獨立法律意見。

Environmental Permit No. EP-353/2009/H

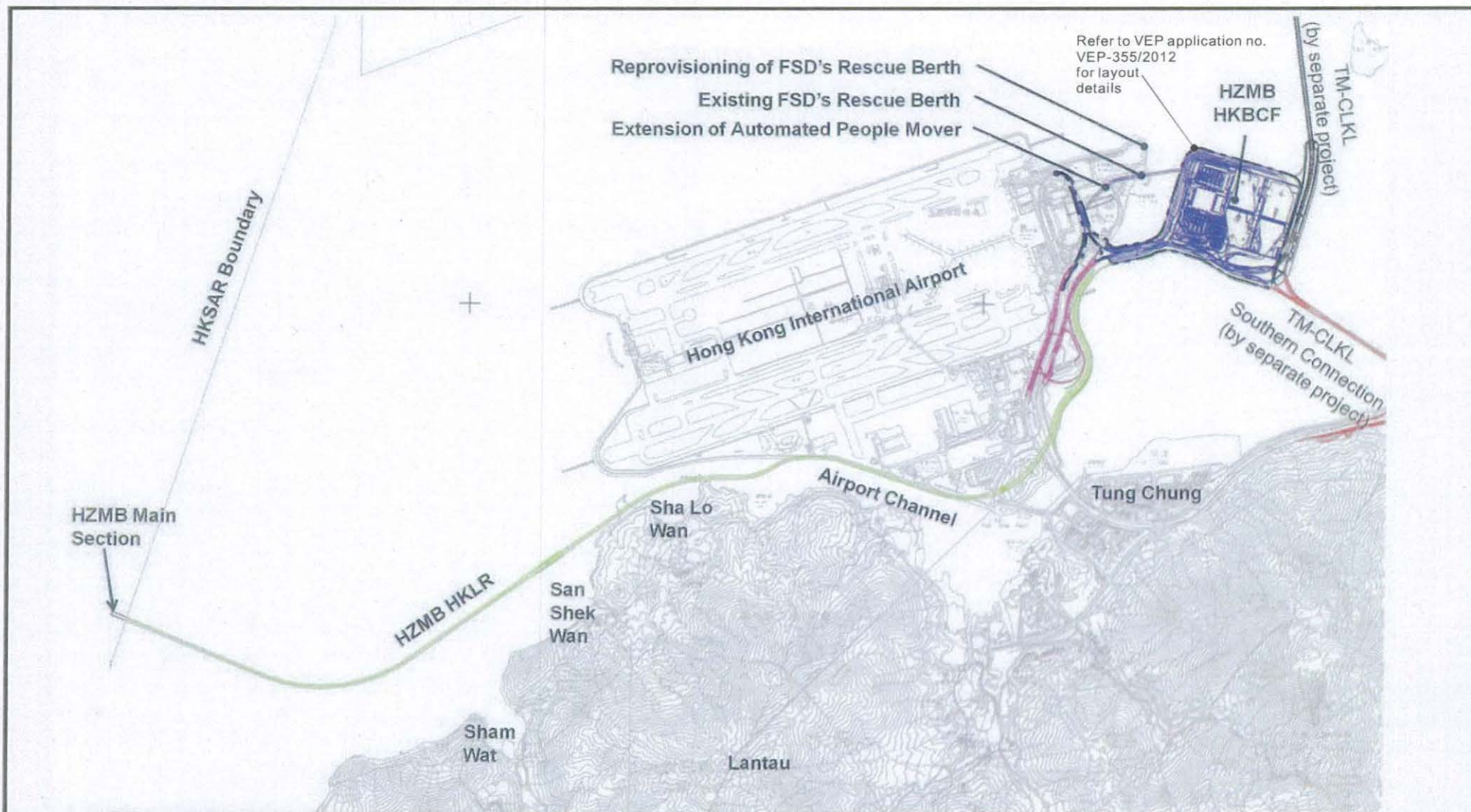
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Table 1: The Standards of Reclaimed Water for Reuse for Toilet Flushing

Water Quality Parameter	Unit	Reclaimed Water Quality
pH	-	6-8
Turbidity	NTU	≤ 2
Total Suspended Solids (TSS)	mg/L	≤ 10
5-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	≤ 10
E.coli	No./100mL	Not Detectable
Total Residual Chlorine (TRC)	mg/L	≥ 1

Environmental Permit No. EP-353/2009/H**環境許可證編號 EP-353/2009/H**



Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Project Location

工程項目位置

(Plan originated from Figure 1 of documents received on 27/2/2012 with Application for Variation of an Environmental Permit no. VEP-355/2012)

(圖則源自於2012年2月27日收到跟更改環境許可證申請編號VEP-355/2012的文件 圖1)

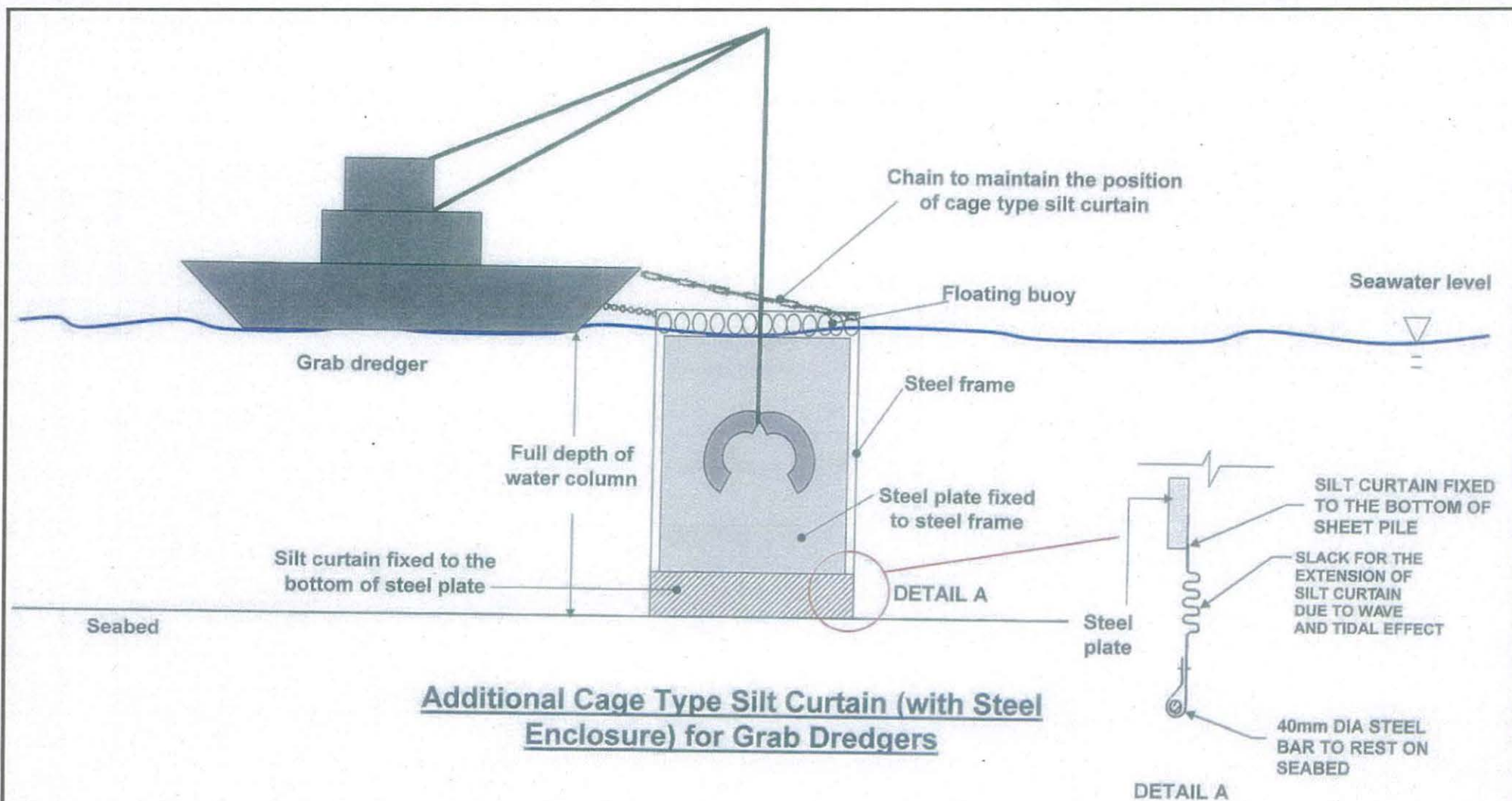
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 1
圖1





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Single layer of Cage Type silt curtain (with steel enclosure)

單層籠式(連鋼鐵外圍)防沙幕

(Plan originated from Figure 25308/041/308a of Appendix 9F of Approval EIA Report reference no.: AEIAR-145/2009)

(圖則源自已批准的環境影響評估報告編號AEIAR-145/2009 附件9F 圖 25308/041/308a)

Environmental Protection Department

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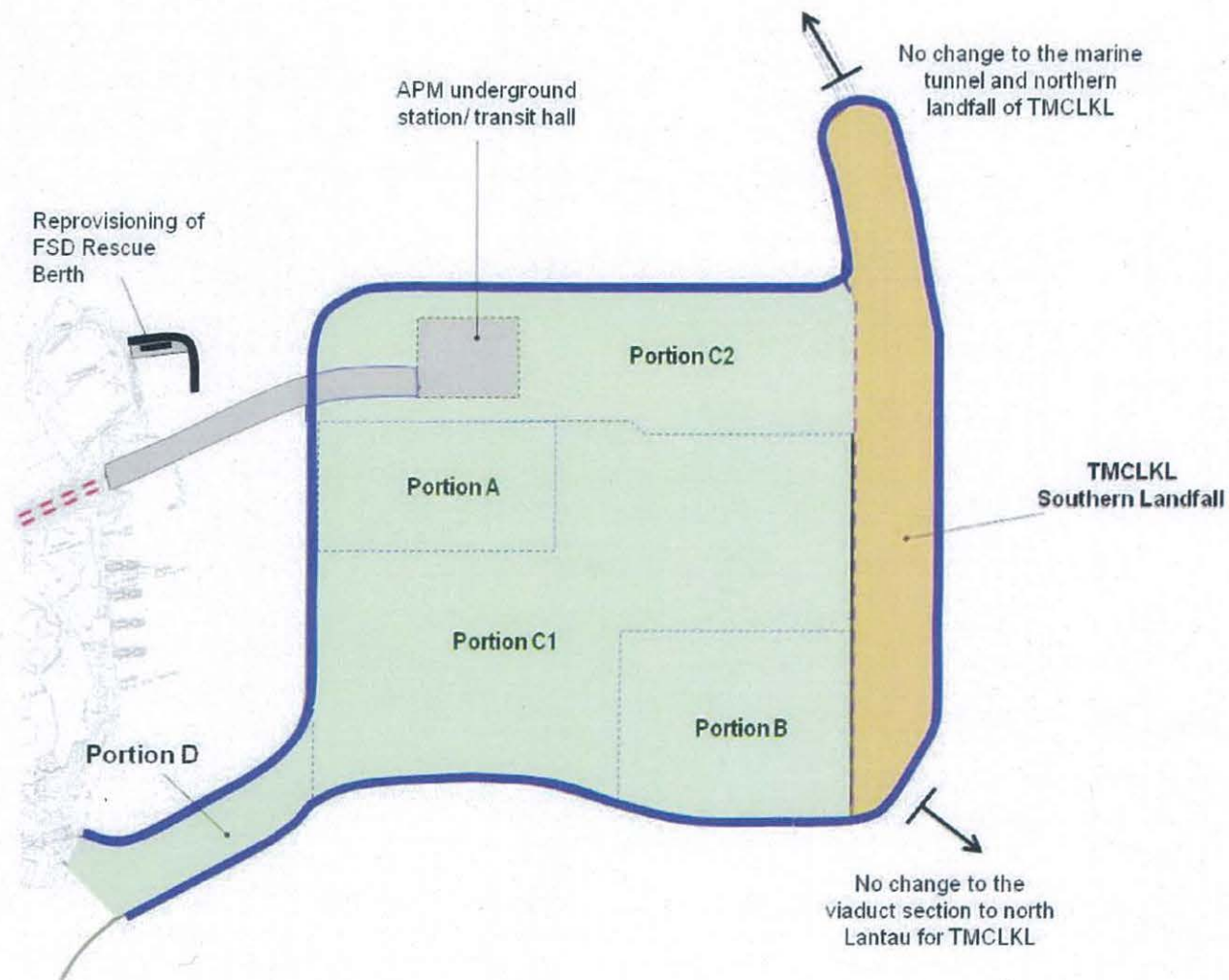
Environmental Permit No.: EP-353/2009/H

環境許可證編號: EP-353/2009/H

Figure 8

圖8





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Proposed Layout of HKBCF & TM-CLKL Southern Landfall Reclamation

擬建的香港口岸及屯門至赤鱗角連接路南部登陸填海安排

(Plan originated from Figure 1.1 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)

(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖1.1)

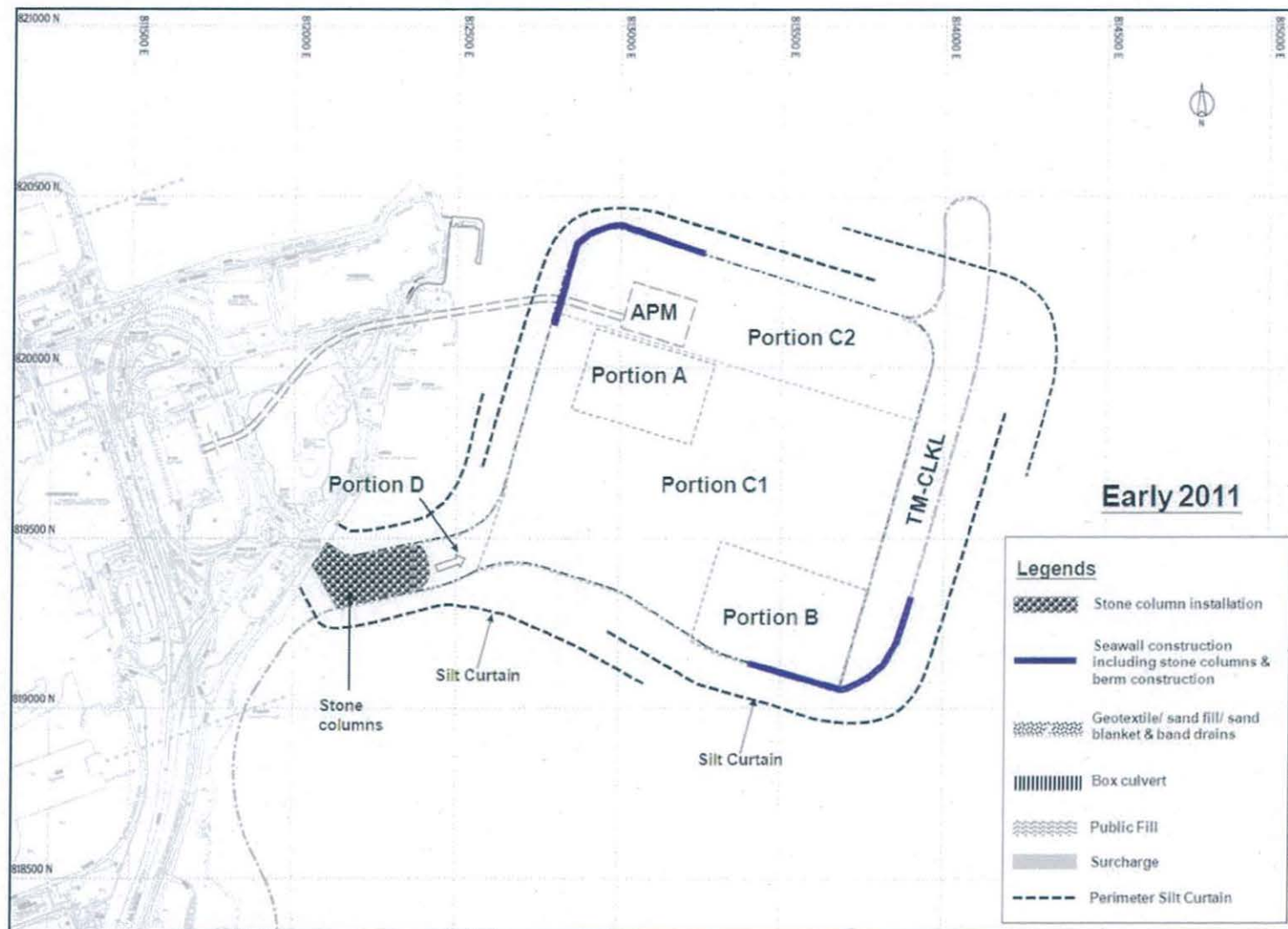
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 11
圖 11





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 1 of 10)

施工程序大綱(表10之1)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

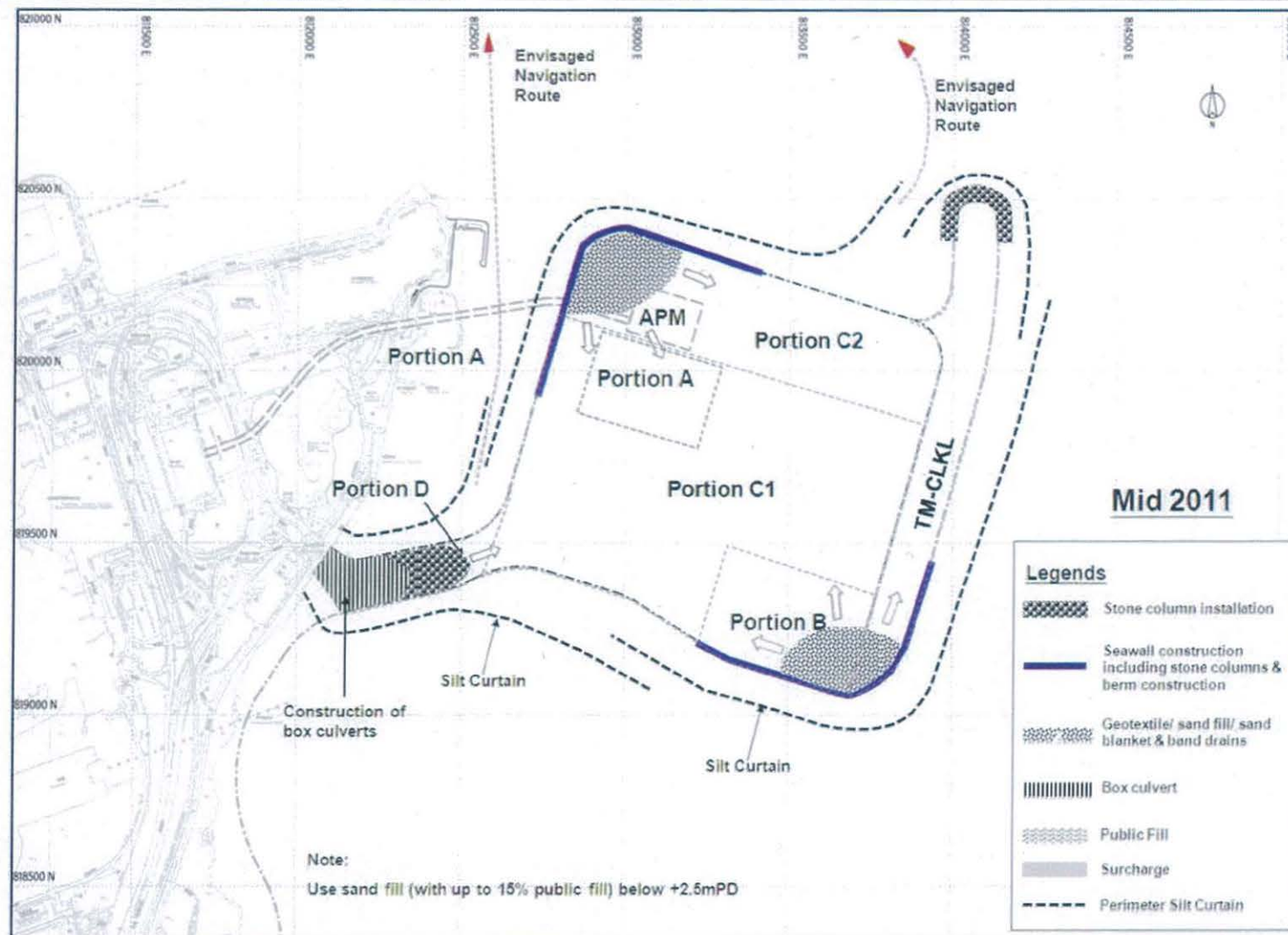
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009H
環境許可證編號: EP-353/2009/H

Figure 12
圖12





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 2 of 10)

施工程序大綱(表10之2)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

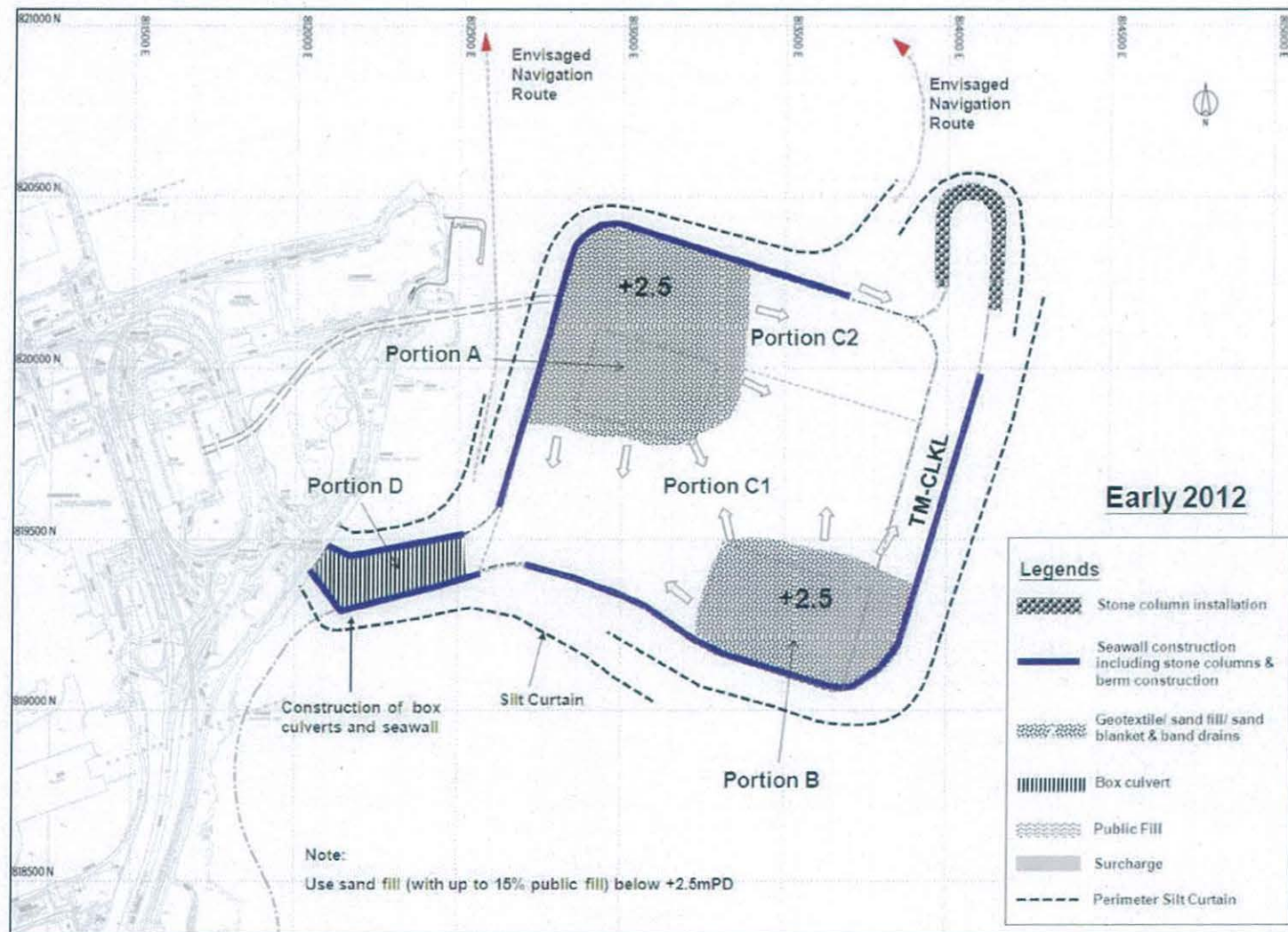
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 13
圖 13





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 3 of 10)

施工程序大綱(表10之3)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

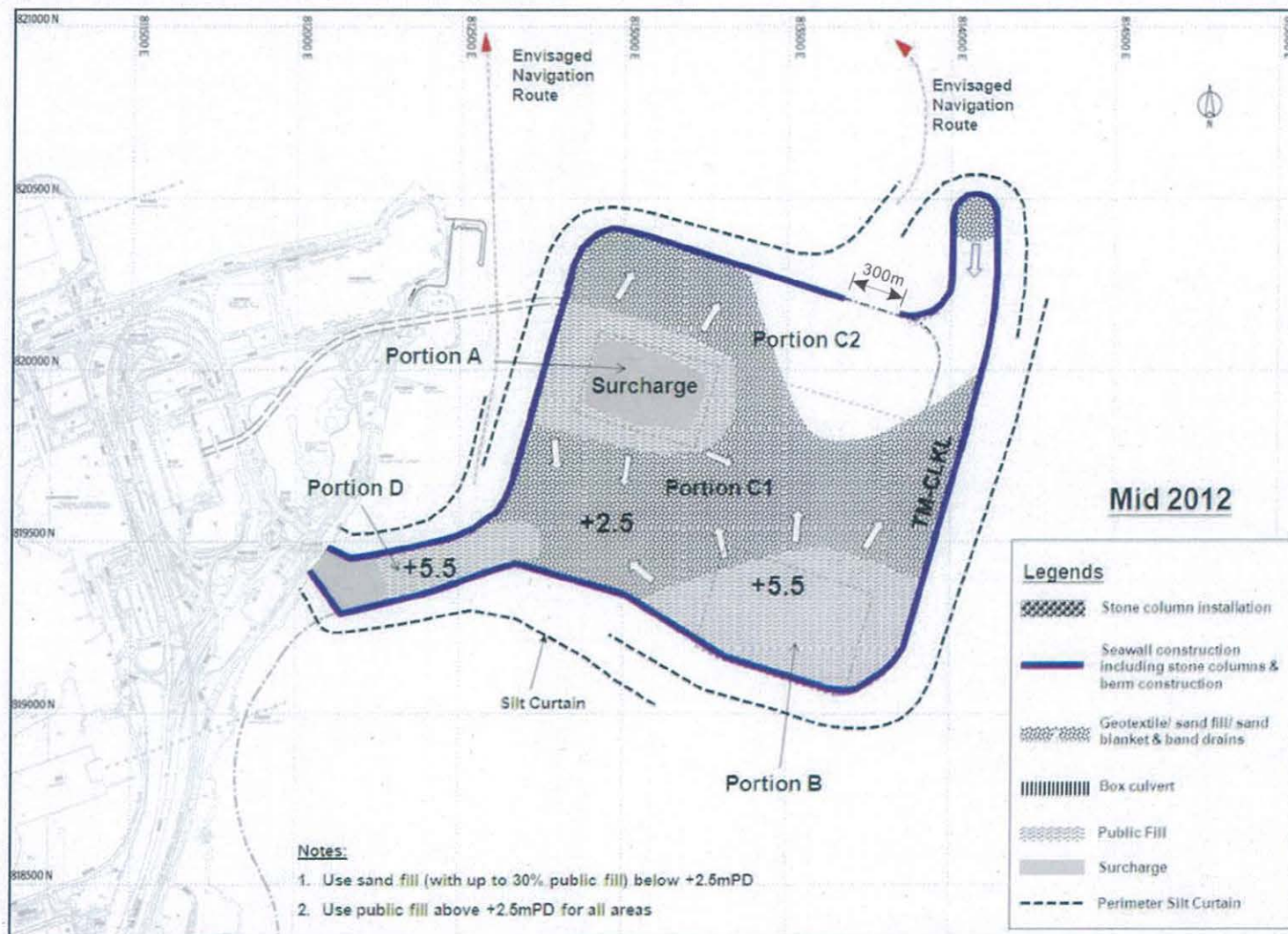
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 14
圖14





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 4 of 10)

施工程序大綱(表10之4)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

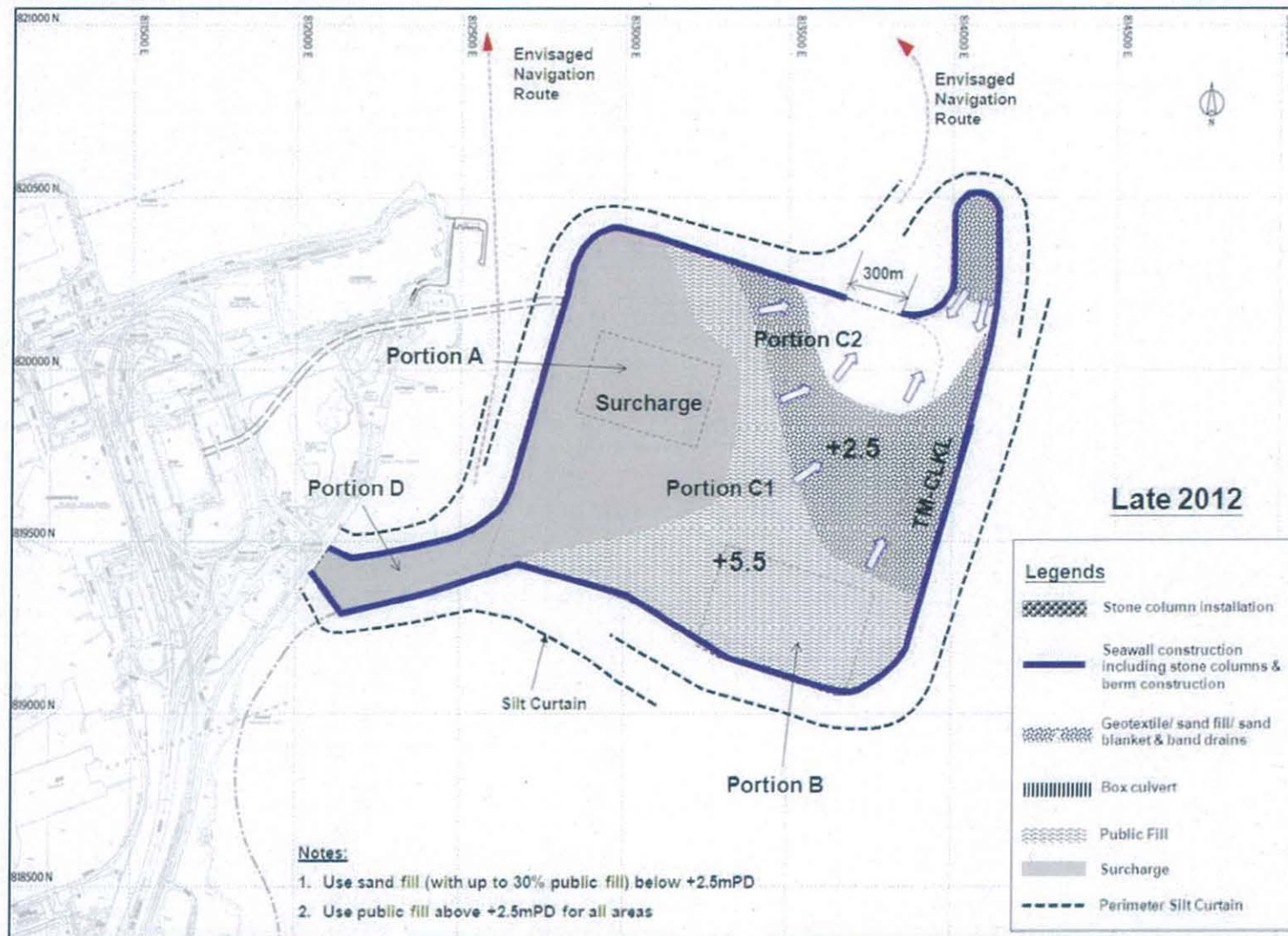
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 15
圖15





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 5 of 10)

施工程序大綱(表10之5)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

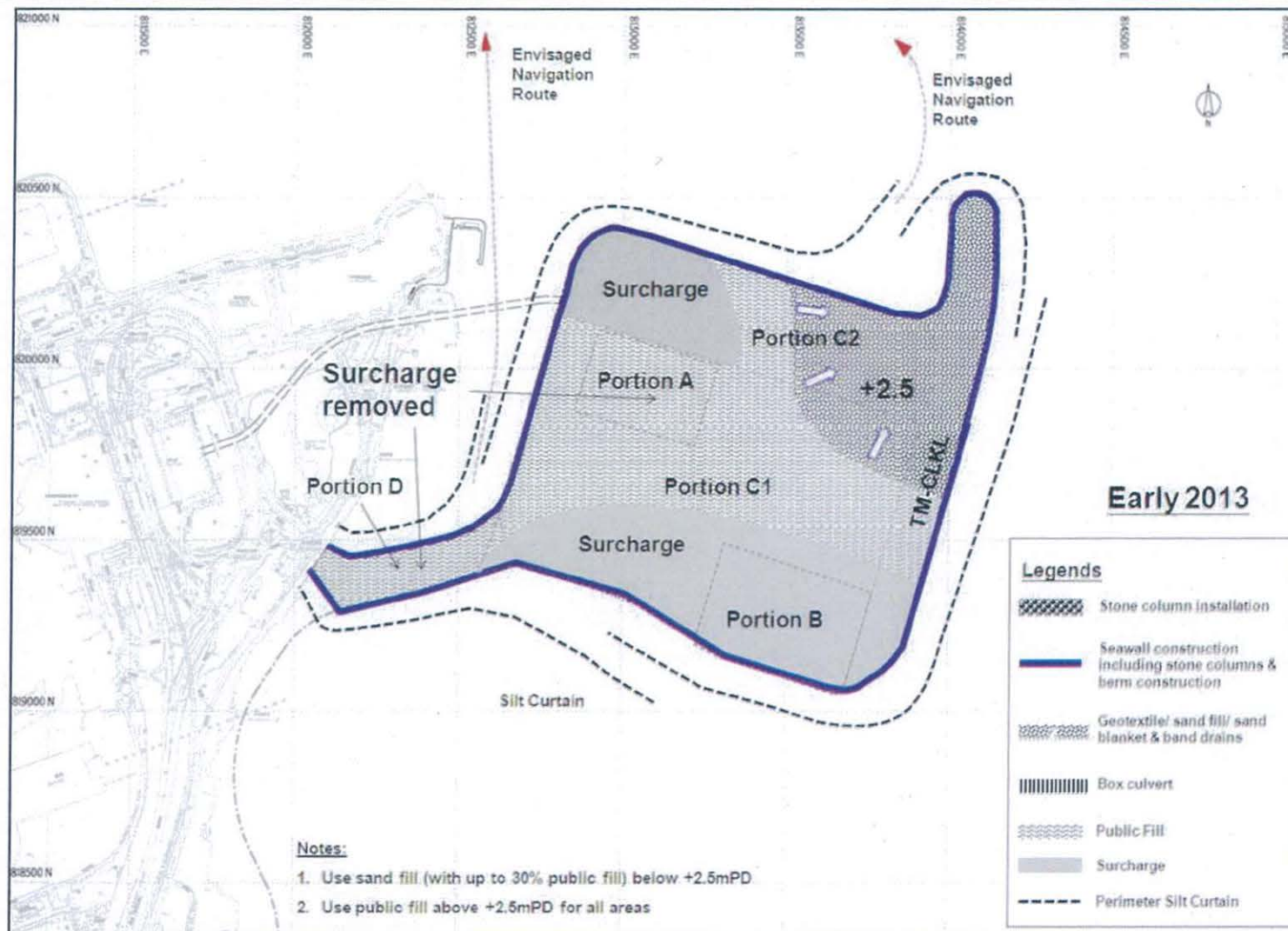
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 16
圖 16





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 6 of 10)

施工程序大綱(表10之6)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

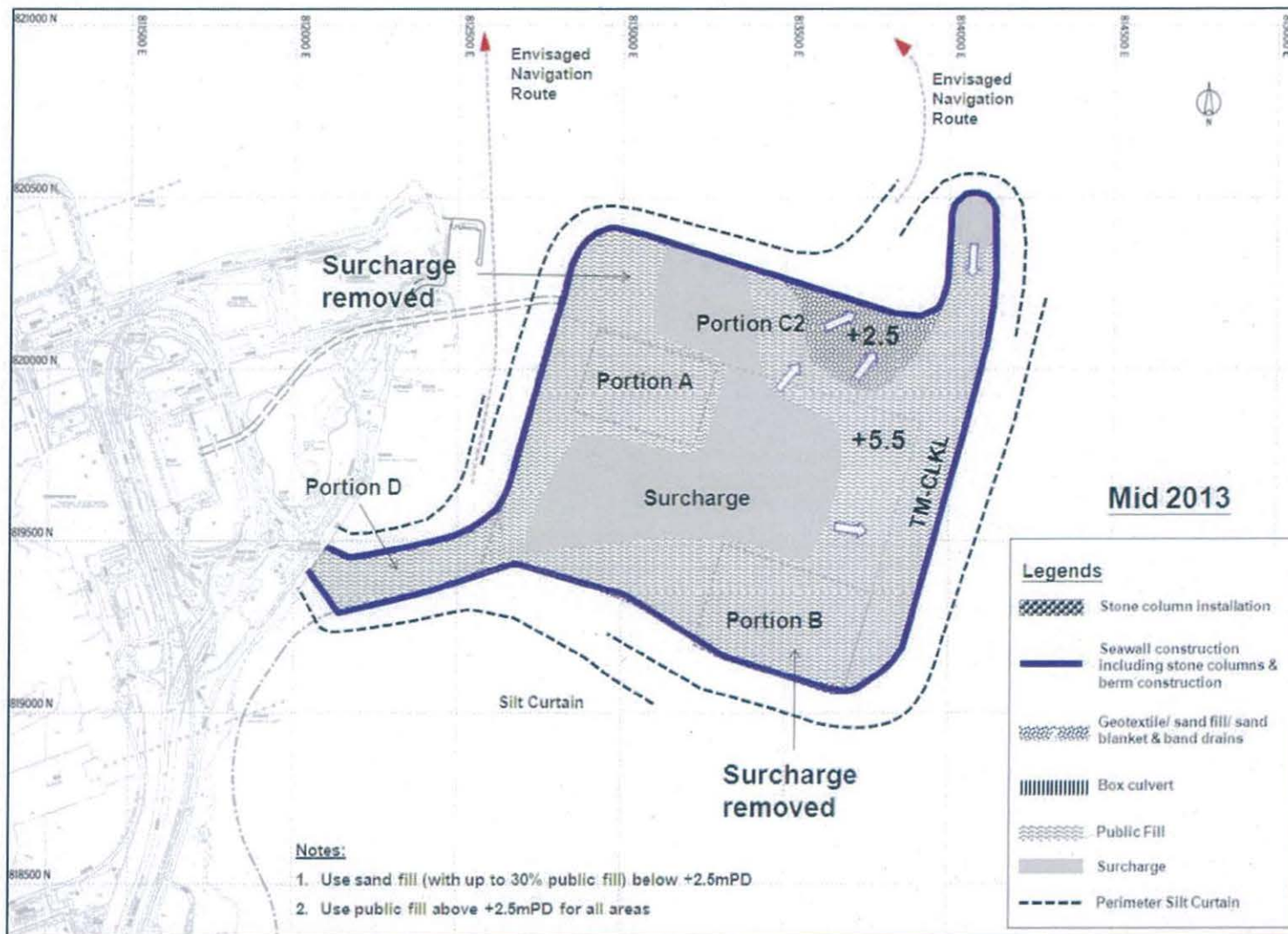
Environmental Protection Department
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Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 17
圖17





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 7 of 10)

施工程序大綱(表10之7)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

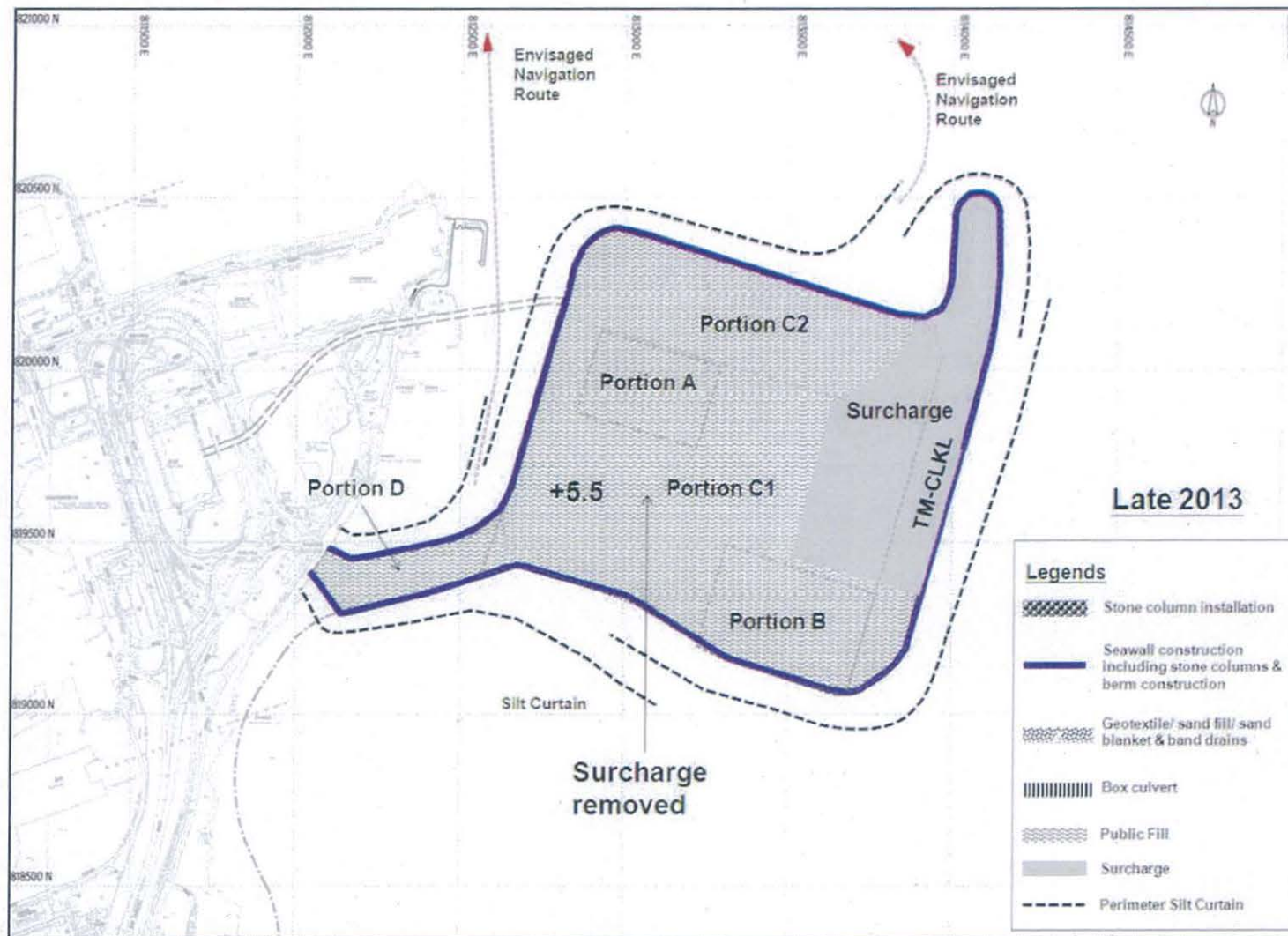
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 18
圖18





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 8 of 10)

施工程序大綱(表10之8)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

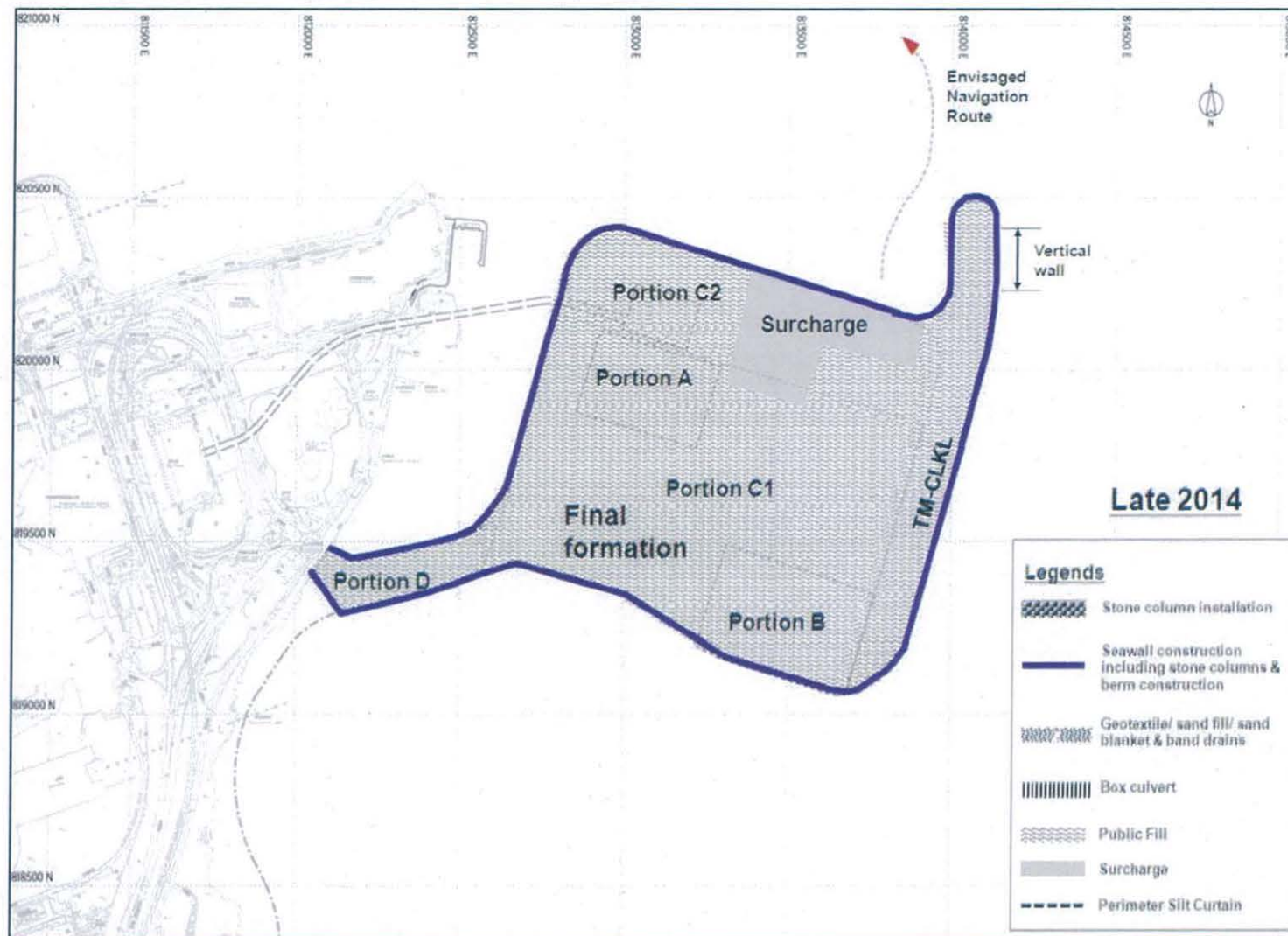
Environmental Protection Department
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Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 19
圖 19





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 9 of 10)

施工程序大綱(表10之9)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

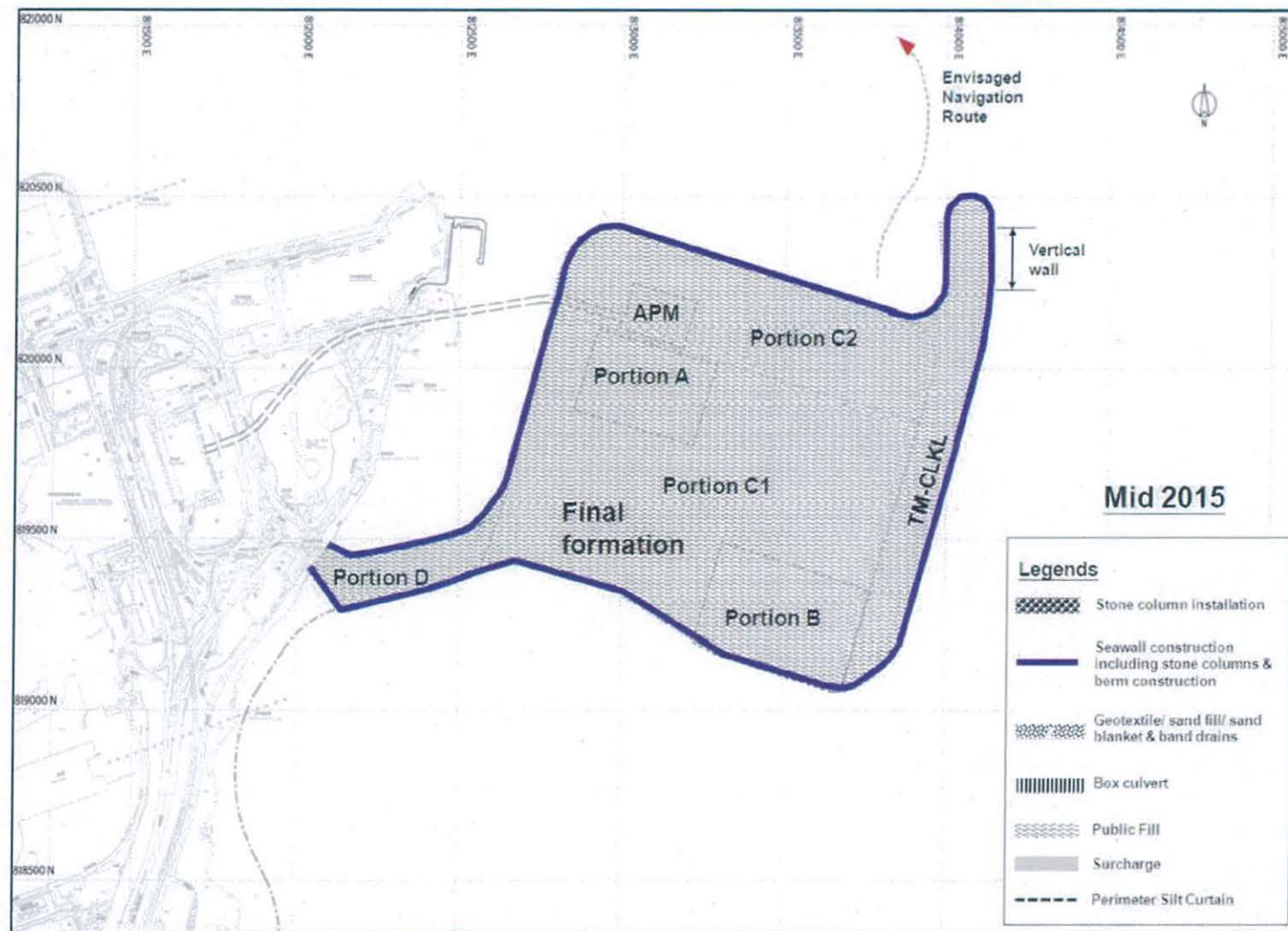
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 20
圖20





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (Sheet 10 of 10)

施工程序大綱(表10之10)

(Plan originated from Figure 2.2 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.2)

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環境許可證編號: EP-353/2009/H

Figure 21
圖21



CONSTRUCT SEAWALL
AT FSD RESCUE BERTH

DREDGING FOR SEAWALL
AND RECLAMATION
(COMPLETED)

Stage 1

SEAWALL CONSTRUCTION
AT FSD RESCUE BERTH
(COMPLETED)

RECLAMATION FILLING

Stage 2

DREDGING FOR TRENCH
TO INSTALL APM BY
IMT METHOD

Stage 3

FILLING FOR
INSTALLATION
OF APM



DREDGING FOR TRENCH
TO INSTALL APM BY
IMT METHOD

Stage 4

FILLING FOR
INSTALLATION OF APM
(COMPLETED)

Stage 5

LEGEND:

-  SINGLE SILT CURTAIN
-  DREDGED AREA
-  RECLAMATION/FILLING AREA
-  FILLING WORKS COMPLETED

Remarks:

1. Reclamation works for HKBCF and TM-CLKL Southern Landfall shall be completed prior to the commencement of the construction of APM Tunnel and re-provisioning of FSD Rescue Berth, unless with the approval by the Director.
2. The Future APM underground station / transit hall shall be construction on land basis.

Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Outline of Construction Sequence (for APM Tunnel and FSD Rescue Berth)

施工程序大綱(捷運系統隧道及消防處的救援泊位)

(Plan originated from Figure 21a of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)
(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖21a)

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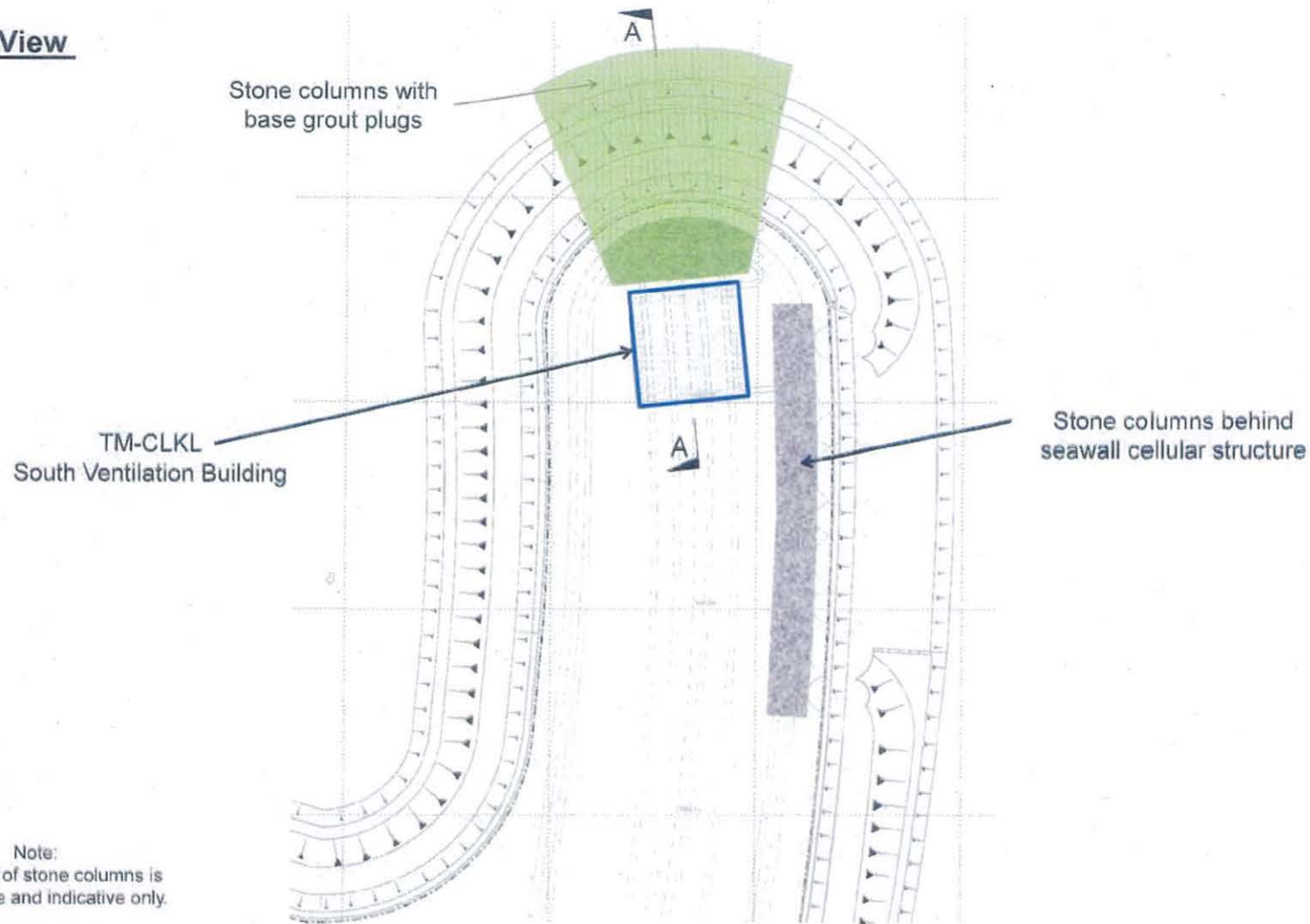


Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 21a
圖21a



Plan View



Note:
The extent of stone columns is approximate and indicative only.

Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Interface between Seawall and TM-CLKL Tunnel (Sheet 1 of 2)

屯門至赤鱓角連接路隧道路段與海堤之間的接口(表2之1)

(Plan originated from Figure 22 of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)
(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖22)

Environmental Protection Department
環境保護署

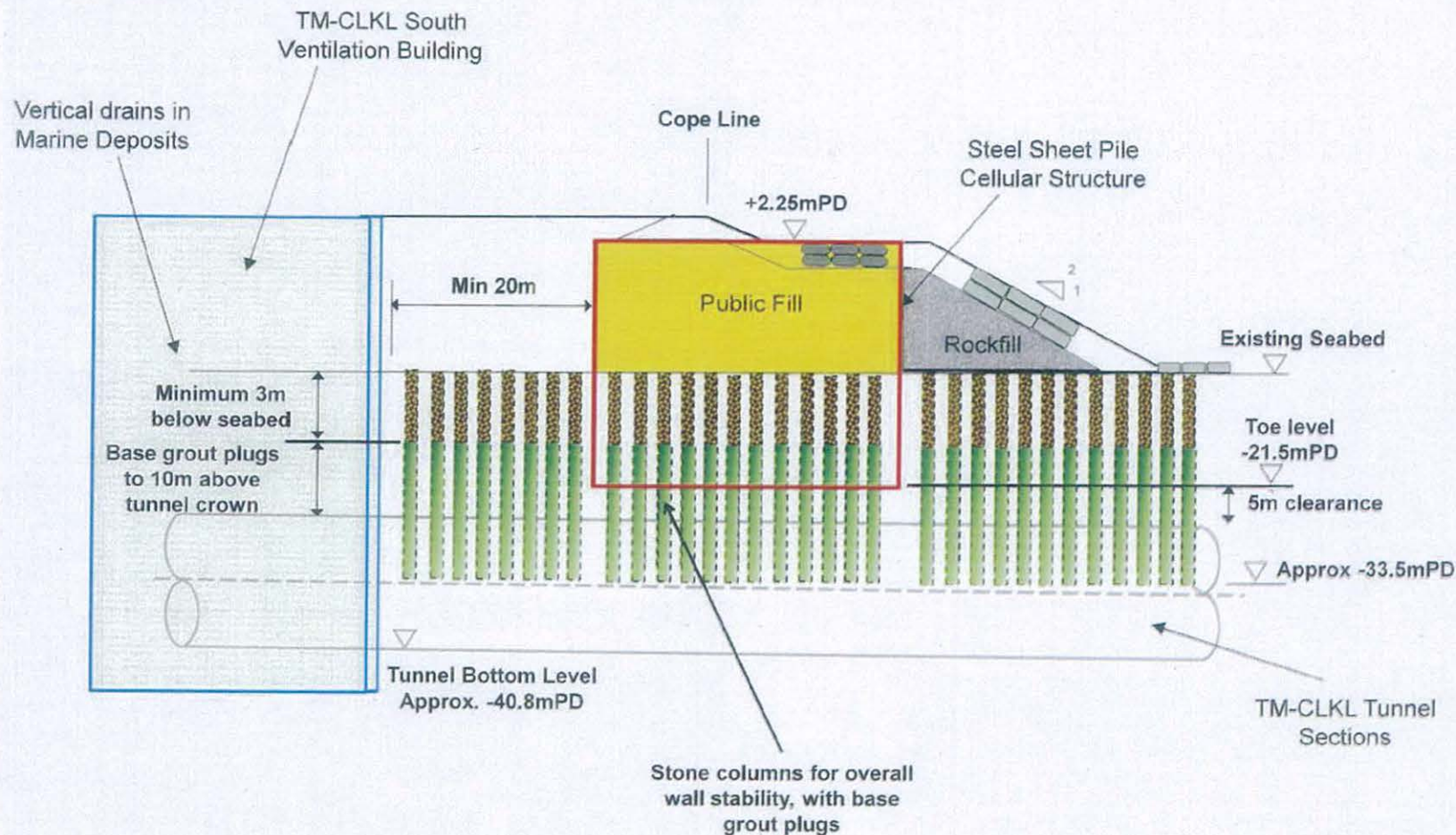


Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 22
圖22



Section A-A



Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Interface between Seawall and TM-CLKL Tunnel (Schematic Seawall Section A-A) Sheet 2 of 2

屯門至赤鱓角連接路隧道路段與海堤之間的接口
(海堤A-A段示意圖)表2之2

(Plan originated from Figure 23 of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)
(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖23)

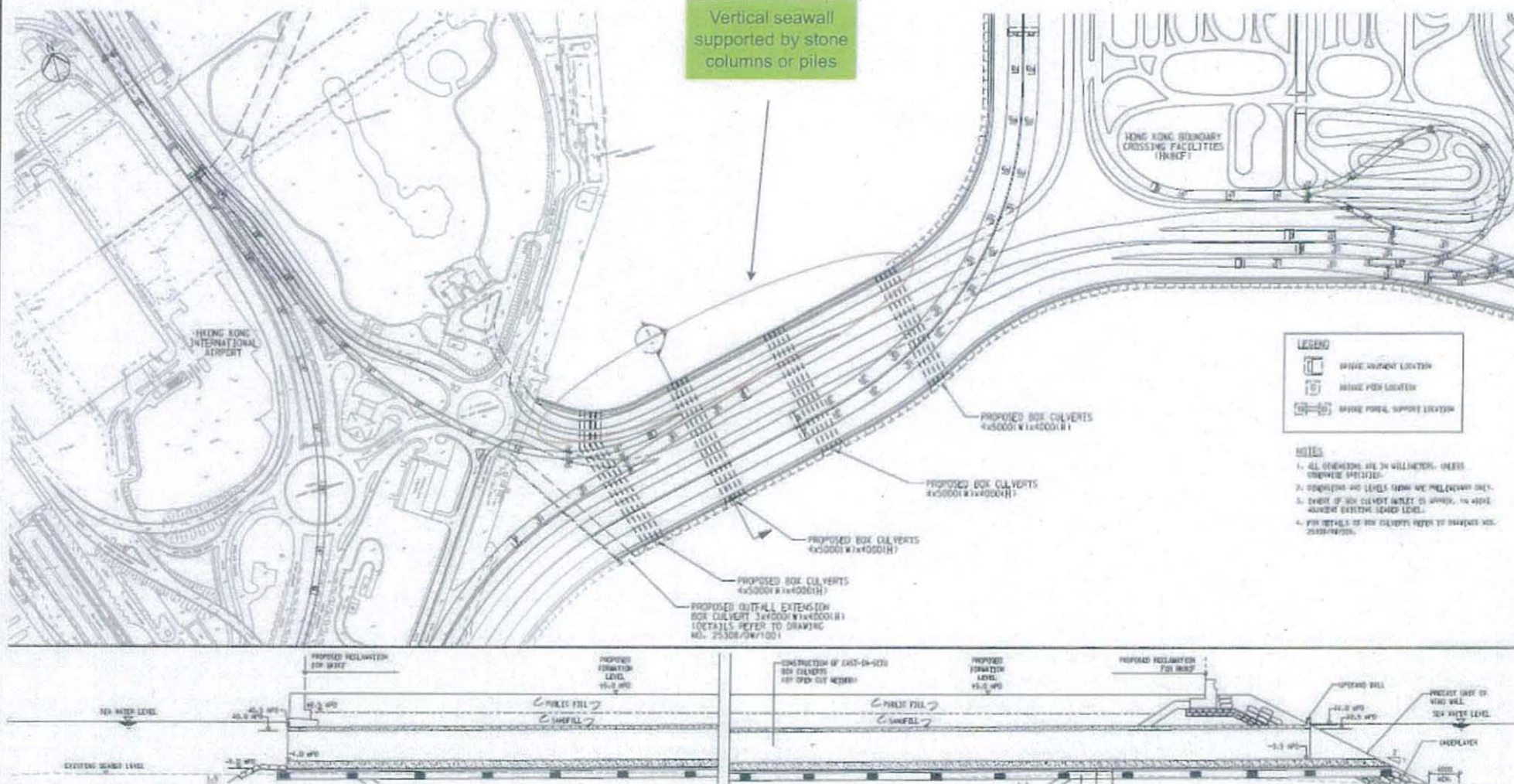
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 23
圖23





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Seawall Formation in Portion D

D部分海堤構造

(Plan originated from Figure 24 of submitted documents dated 21/11/2011 with Application for Variation of an Environmental Permit no. VEP-343/2011)
(圖則源自於2011年11月21日提交跟更改環境許可證申請編號VEP-343/2011的文件 圖24)

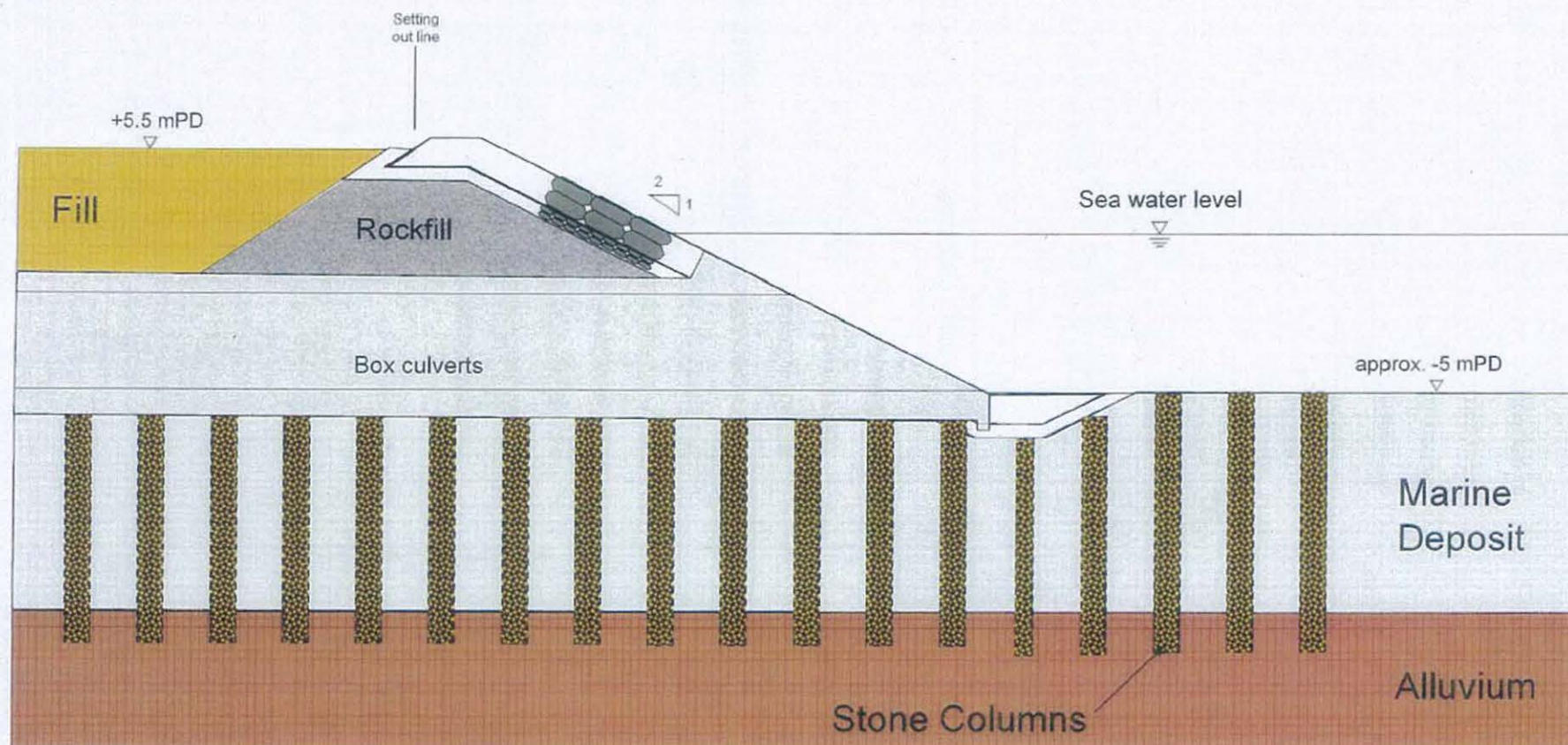
Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 24
圖24





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Typical Section along Box Culverts in Portion D

D部分箱形暗渠沿線典型橫切圖

(Plan originated from Figure 25 of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)
(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖25)

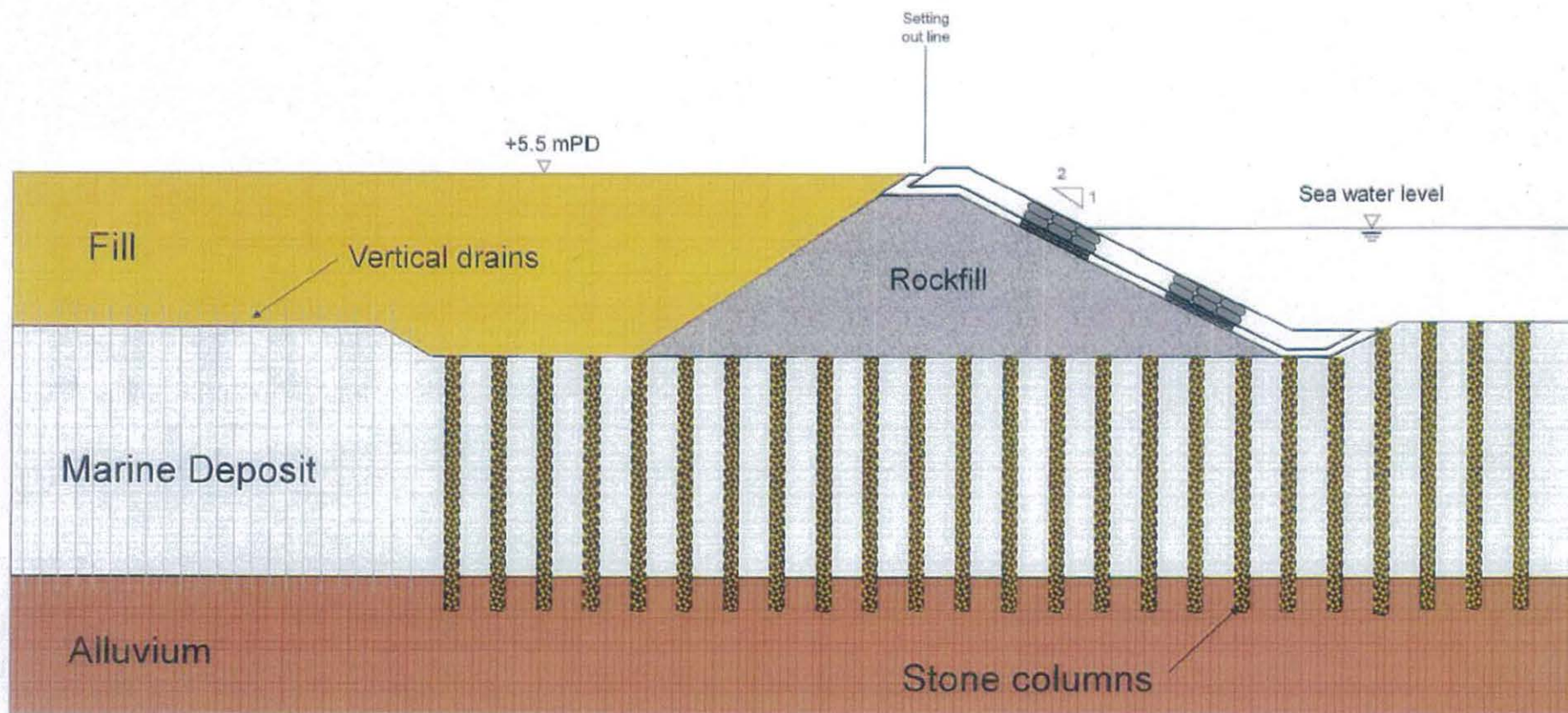
Environmental Protection Department
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Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 25
圖25





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Typical Section Across Area between Box Culverts in Portion D

D部分跨箱形暗渠區域的典型橫切圖

(Plan originated from Figure 26 of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)
(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖26)

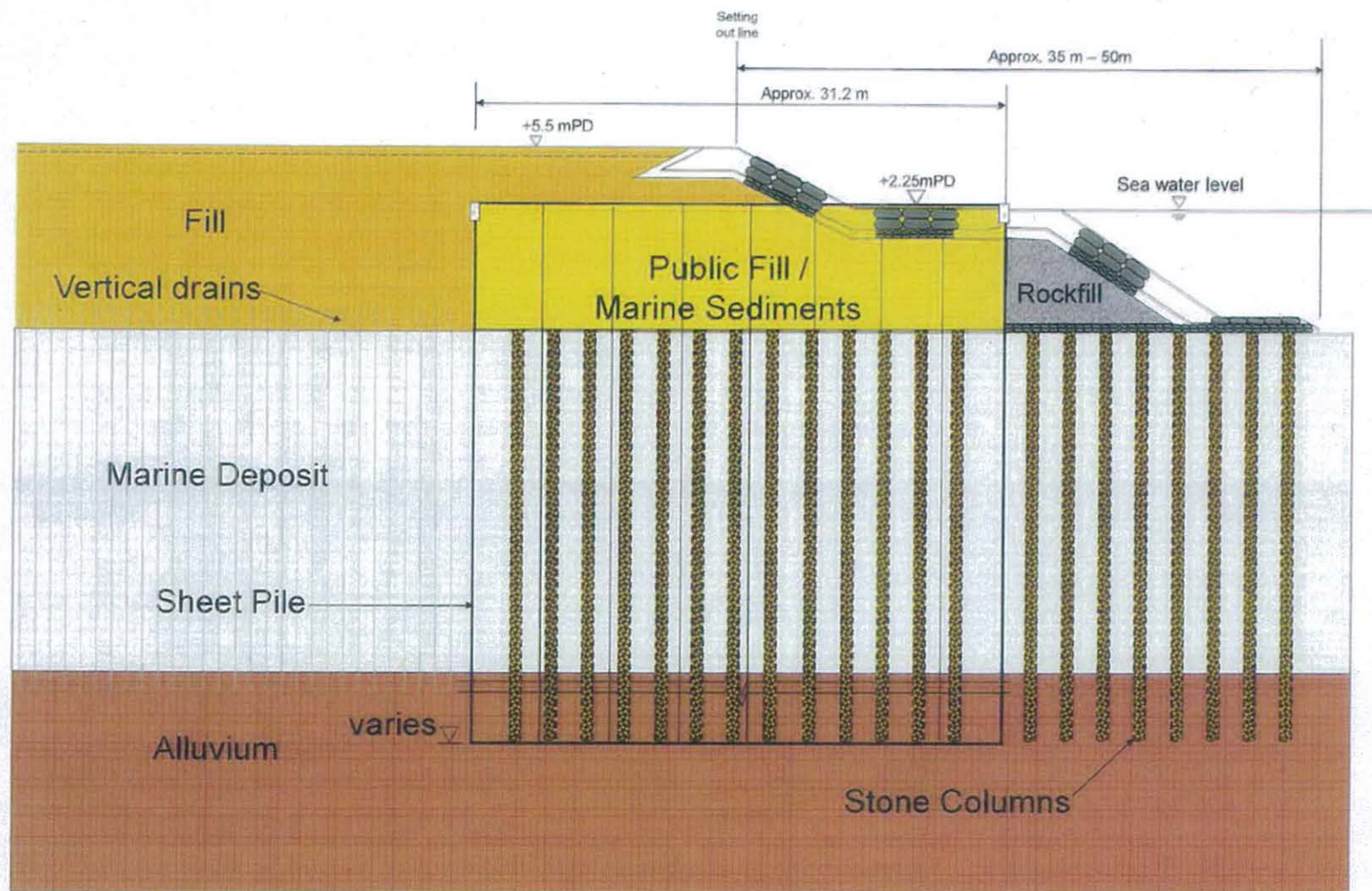
Environmental Protection Department
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環境許可證編號: EP-353/2009/H

Figure 26
圖 26





Note: All dimensions shown are approximate and indicative only.

Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Typical Seawall Cross-section (Sloping Seawall) (Sheet 1 of 2)

典型海堤橫切圖(傾斜海堤)(表2之1)

(Plan originated from Figure 27 of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)

(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖27)

Environmental Protection Department

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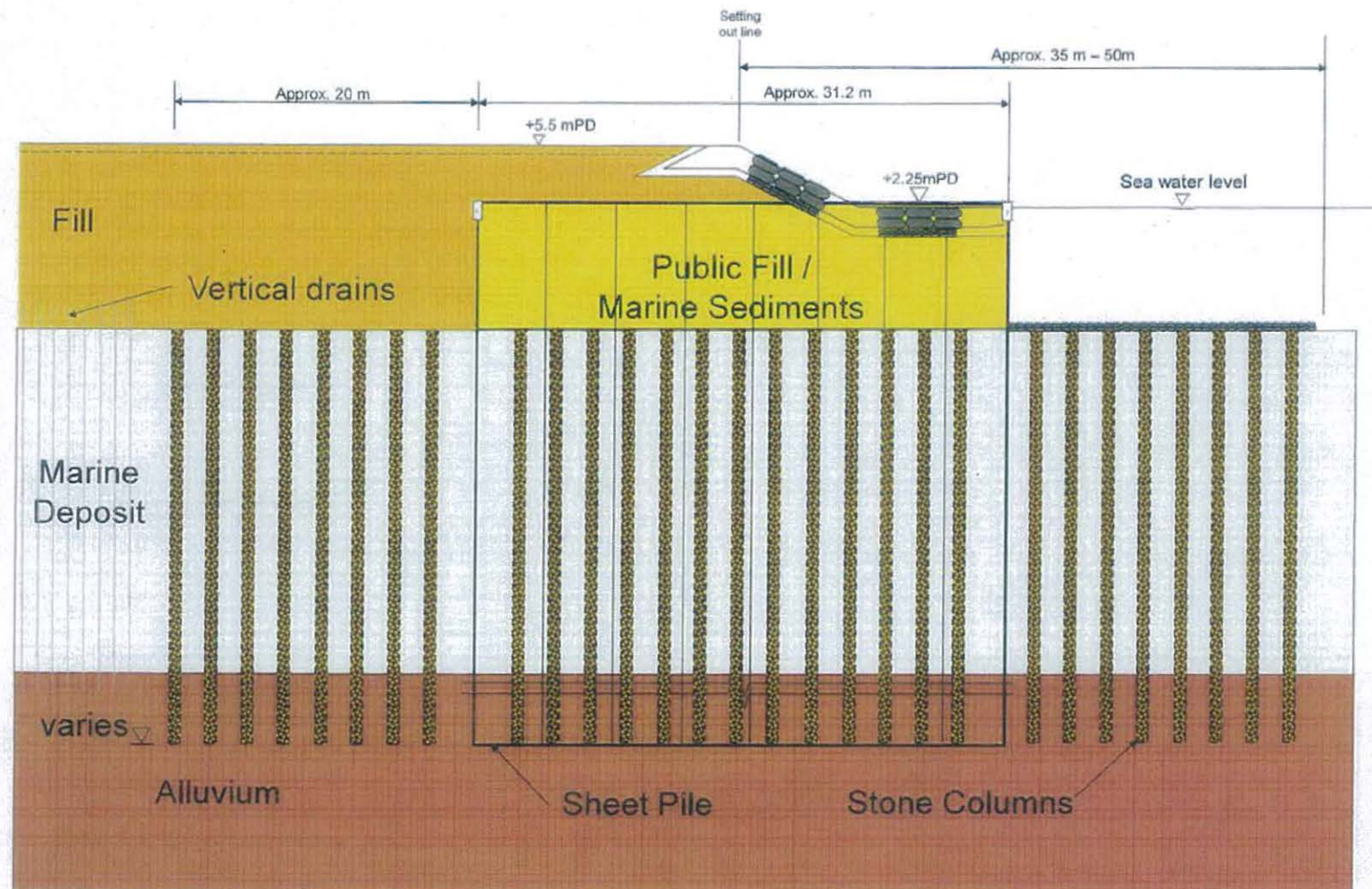
Environmental Permit No.: EP-353/2009/H

環境許可證編號: EP-353/2009/H

Figure 27

圖27





Note: All dimensions shown are approximate and indicative only.

Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Typical Seawall Cross-section (Vertical Seawall) (Sheet 2 of 2)

典型海堤橫切圖(垂直海堤)(表2之2)

(Plan originated from Figure 27a of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)

(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖27a)

Environmental Protection Department

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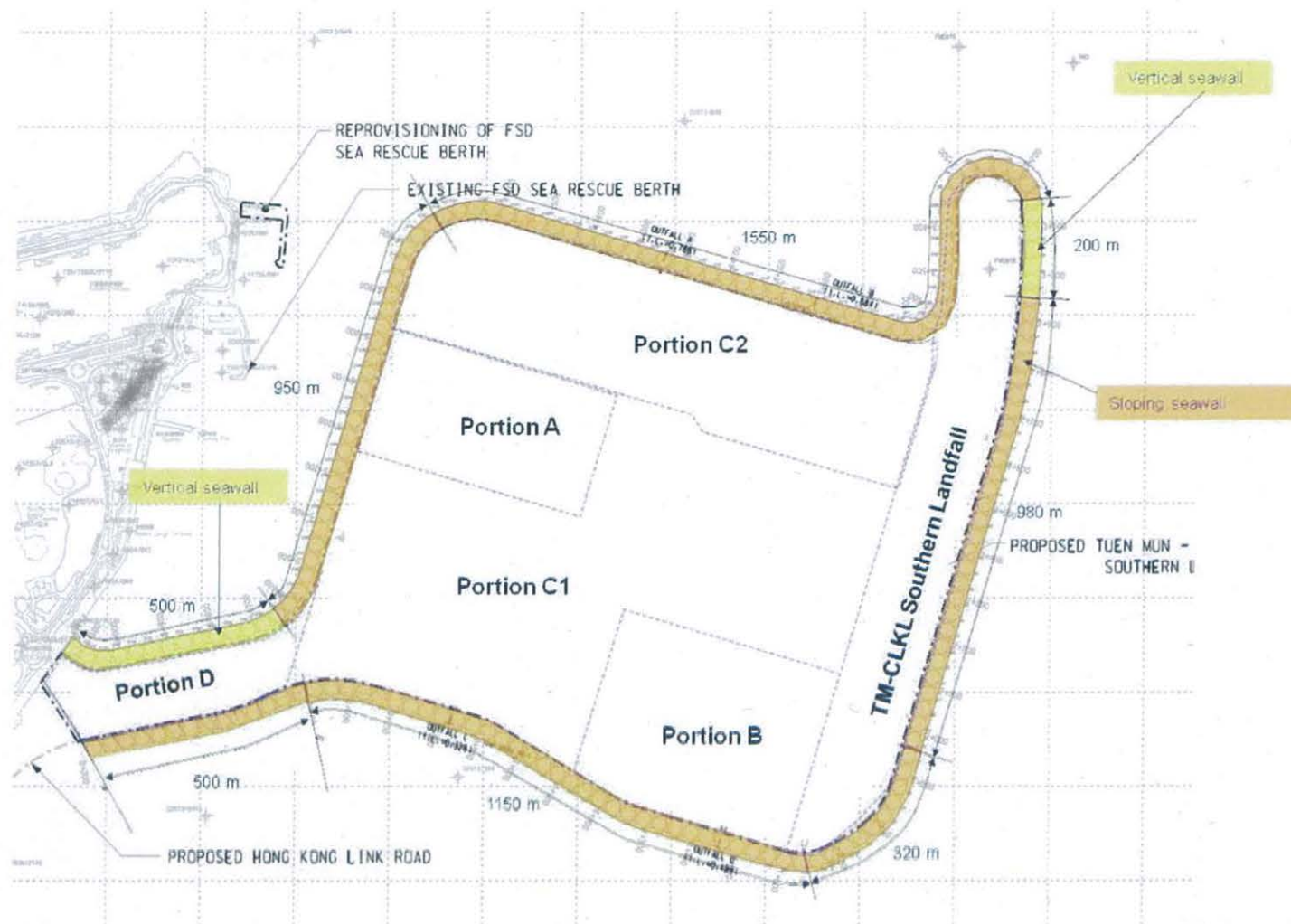
Environmental Permit No.: EP-353/2009/H

環境許可證編號: EP-353/2009/H

Figure 27a

圖27a





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Location Plan for Vertical Seawalls and Sloping Seawalls

垂直海堤及坡海堤位置圖

(Plan originated from Figure 2.8 of submitted documents dated 11/6/2010 with Application for Variation of an Environmental Permit no. VEP-315/2010)
(圖則源自於2010年6月11日提交跟更改環境許可證申請編號VEP-315/2010的文件 圖2.8)

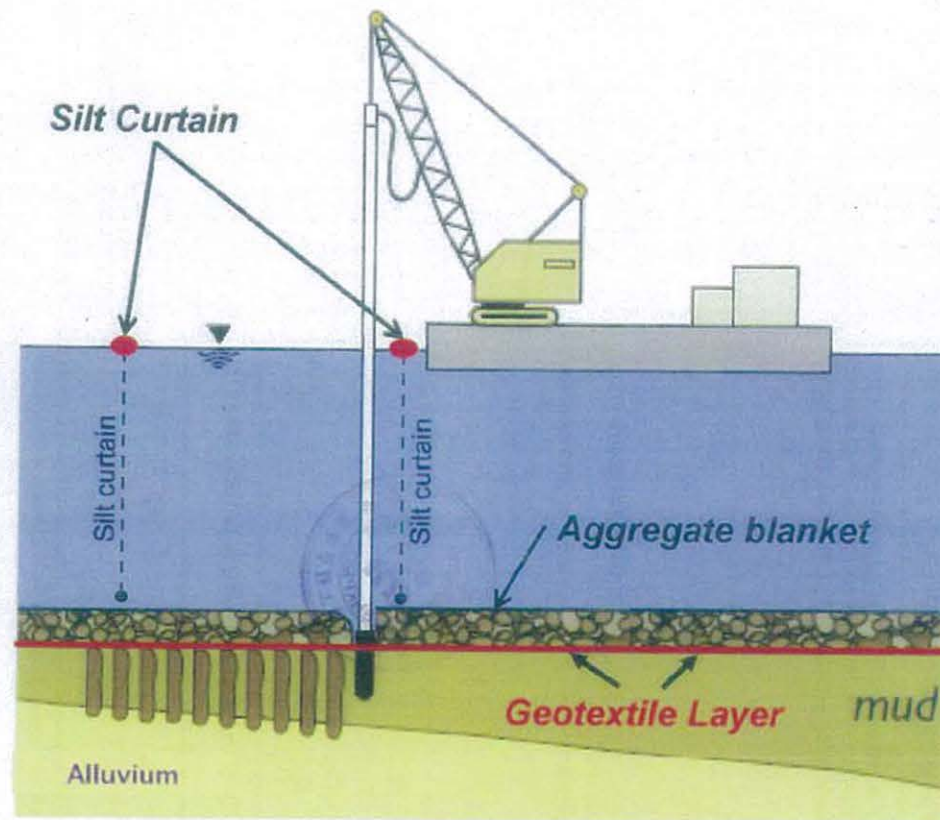
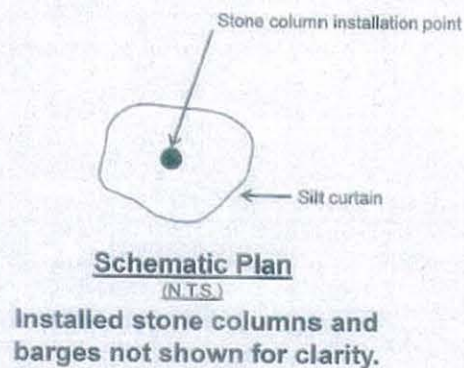
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Figure 28
圖28





Remarks:

1. The installation method of stone columns (approx. 1m dia. And 25m long) is shown for illustration purpose.
2. A perimeter silt curtain will be installed for the whole reclamation area.

Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Mitigation Measures for Stone Column Installation

碎石樁安裝的緩解措施

(Plan originated from Figure 29 of submitted documents dated 27/10/2010 with Application for Variation of an Environmental Permit no. VEP-327/2010)
(圖則源自於2010年10月27日提交跟更改環境許可證申請編號VEP-327/2010的文件 圖29)

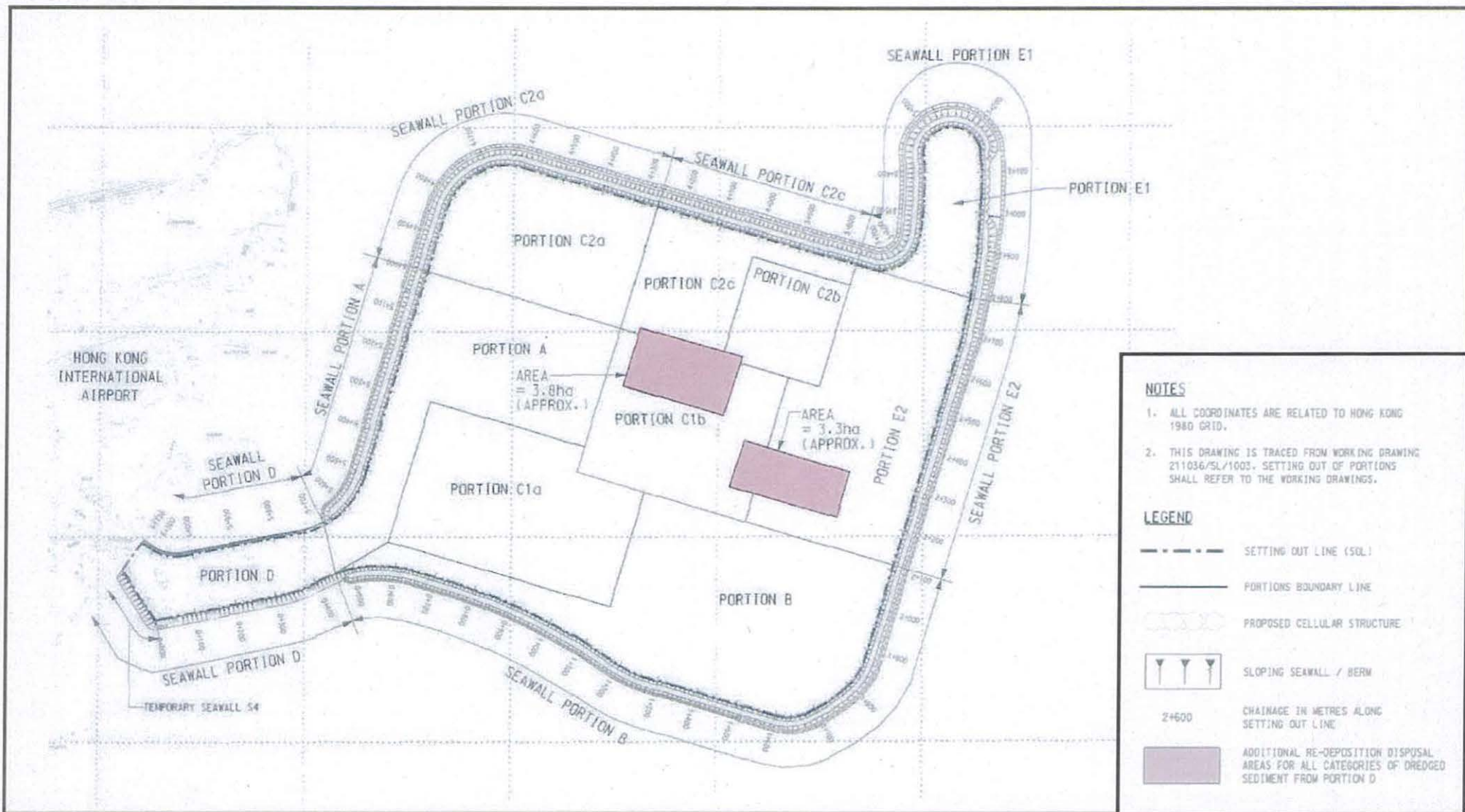
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Figure 29
圖29





Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Location Plan for Additional Re-deposition Areas for All Categories of Dredged Sediment

供全類別疏浚淤泥的附加再沉積區位置圖

(Plan originated from Figure 30 of documents received on 27/2/2012 with Application for Variation of an Environmental Permit no. VEP-355/2012)

(圖則源自於2012年2月27日收到變更環境許可證申請編號VEP-355/2012的文件 圖30)

Environmental Protection Department

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Environmental Permit No.: EP-353/2009/H

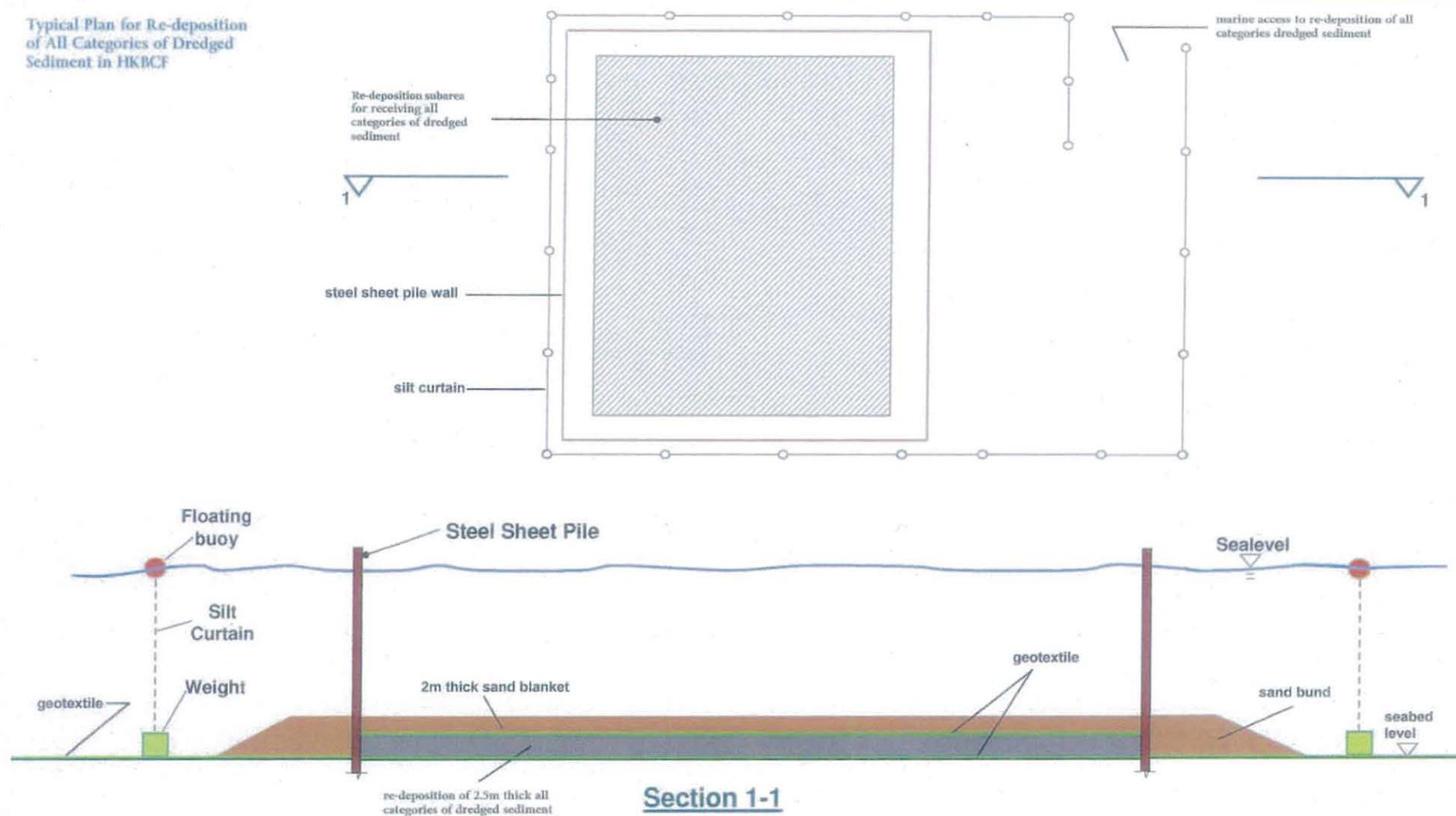
環境許可證編號: EP-353/2009/H

Figure 30

圖30



Typical Plan for Re-deposition
of All Categories of Dredged
Sediment in HKBCF



Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Details of Silt Curtains and Steel Sheet Pile Wall Around the Re-deposition Sub-area

圍繞再沉積分區周圍淤泥屏障及鋼板樁牆的細節

(Plan originated from Figure 31 of documents received on 27/2/2012 with Application for Variation of an Environmental Permit no. VEP-355/2012)

(圖則源自於2012年2月27日收到跟更改環境許可證申請編號VEP-355/2012的文件 圖31)

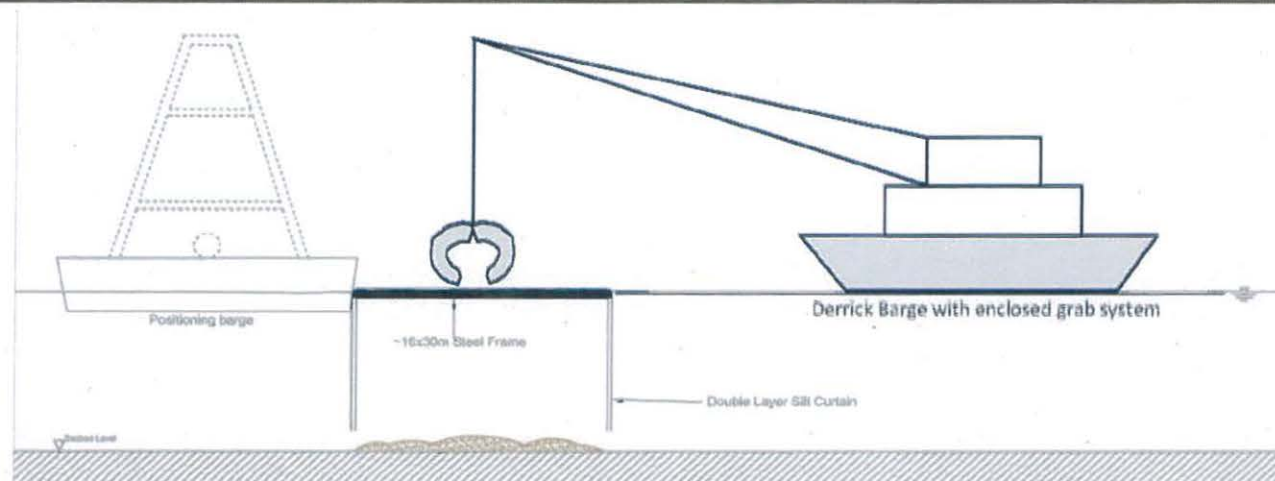
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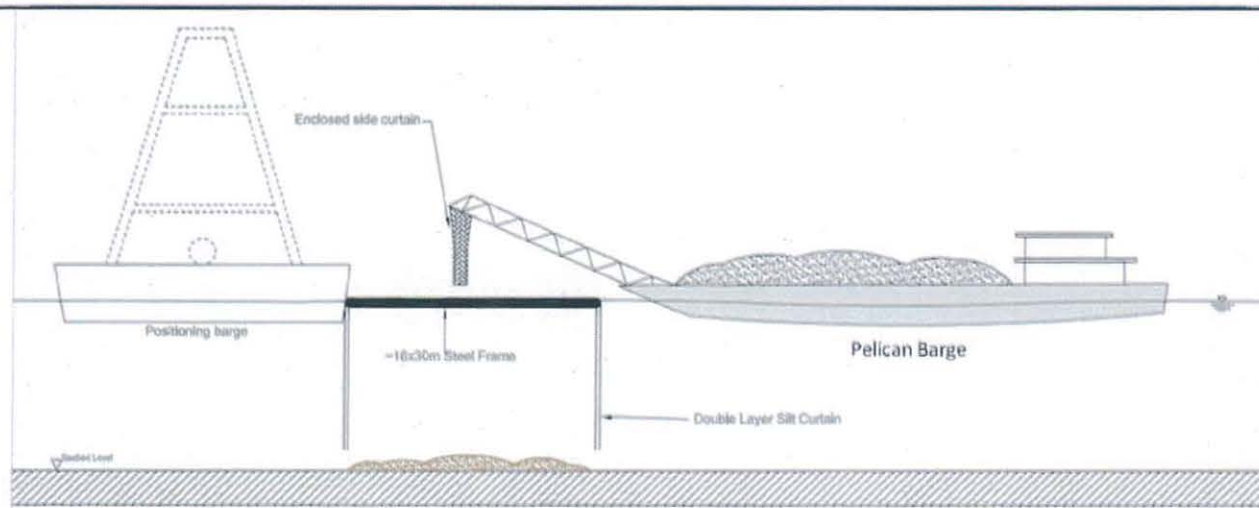
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Figure 31
圖31





Option A – Derrick Barge with enclosed grab system



Option B – Pelican Barge

Project Title: Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities

工程項目名稱: 港珠澳大橋香港口岸

Cage Type Double Layer Silt Curtain for Sand Blanket Filling

用於沙墊層填土的雙層籠式防沙幕

(Plan originated from Appendix D of documents received on 18/04/2013 with Application for Variation of an Environmental Permit no. VEP-402/2013)

(圖則源自於2013年04月18日收到跟更改環境許可證申請編號VEP-402/2013的文件 附件D)

Environmental Protection Department
環境保護署



Environmental Permit No.: EP-353/2009/H
環境許可證編號: EP-353/2009/H

Figure 32
圖32

