

Ref.: AACWBIECEM00_0_1325L.11

11 May 2011

By Post and Fax (2566 2192)

China State Construction Engineering (Hong Kong) Ltd.
29/F, China Overseas Building
139 Hennessy Road
Hong Kong

Attention: Mr. K. Y. Leung

Dear Sir,


Re: FEP-04/356/2009
Contract No. HY/2009/15
Central – Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter
Section)
Silt Curtain Deployment Plan (Revision 2)

Reference is made to your submission of the Silt Curtain Deployment Plan (Revision 2 dated 29 April 2011) to us through E-mail on 6 May 2011 for our review and comment.

Please be informed that we have no further comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 2.8 of FEP-04/356/2009.

Thank you for your kind attention.

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c.	HyD	Mr. Jones Lai	by fax: 2714 5289
	CEDD	Mr. Patrick Keung	by fax: 2577 5040
	AECOM (CWB)	Mr. Peter Poon	by fax: 3529 2829
	AECOM	Mr. Kelvin Cheng	by fax: 2691 2649
	LAM	Mr. Raymond Dai (ETL)	by fax: 2882 3331

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Lam Geotechnics Limited

Ground Investigation & Instrumentation Professionals

華益土力有限公司

Ref : G1001/CS/L348a/FEP-04/356/2009
Date : 9 May 2011

China State Construction Engineering (Hong Kong) Ltd.
29/F, China Overseas Building,
139 Hennessy Road, Hong Kong

Attn: Mr. K. Y. Leung

Dear Sir,

FEP-04/356/2009
Contract No. HY/2009/15
Central- Wan Chi Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)
Silt Curtain Deployment Plan (Revision 2)

Referring to your submission of the captioned plan (Revision 2 dated 29 April 2011) received through email on 6 May 2011, we have reviewed your submitted details and hereby certify this submission in accordance with Condition 2.8 of Further Environmental Permit no. FEP-04/356/2009.

Should you have any enquiry, please feel free to contact the undersigned at 2839 5666.

Yours faithfully,

Raymond Dai
Environmental Team Leader

c.c. CEDD
HyD
AECOM CWB
AECOM WDII
ENVIRON

- Mr. Patrick Keung
- Mr. Jones Lai
- Mr. Peter Poon
- Mr. Frankie Fan
- Mr. David Yeung

(By Fax: 2577 5040)
(By Fax: 2714 5289)
(By Fax: 3529 2829)
(By Fax: 2587 1877)
(By Fax: 3548 6988)



Contract No. HY/2009/15

Central -Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)


CONTRACT HY/2009/15

**CENTRAL – WAN CHAI BYPASS
TUNNEL (CAUSEWAY BAY TYPHOON SHELTER SECTION)**

Silt Curtain Deployment Plan

Submission Status: For Approval

Revision	Description	Date
0	1 st Submission	19 October 2010
1	2 nd Submission	23 February 2011
2	3 rd Submission	29 April 2011

Prepared by:	Kelven Yip		29/04/2011
	Environmental Supervisor	Signature	Date
Checked by	Samuel Tsui		29/04/2011
	Environmental Officer	Signature	Date
Approved by:	Simon Tang		29/04/2011
	Contractor's Representative	Signature	Date

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1.0 Introduction

The purpose of this deployment plan is to illustrate the general layout, the construction programme, details on the design, operation and maintenance of the silt curtains to be installed for dredging and reclamation works of the entire Project in the Causeway Bay Typhoon Shelter (CBTS) and ex-Wan Chai Public Cargo Working Area as recommended in the approved EIA report (Registration No.: AEIAR-125/2008). This deployment plan is also applicable to other marine works e.g. dredging works in Private Mooring Area (PMA) within CBTS etc.

2.0 List of Reference Document

2.1 The relevant clause in the Particular Specification of the Contract is listed as follows for ease of references.

PS Clause No.	Relevant Remarks
PS Appendix 25.4	Referring to Environmental Permit (EP) No. EP-356-2009 and FEP-04/356/2009 Condition 2.8, the silt curtain deployment plan should be submitted.

3.0 Key Factors Considered during Design for Proposed Silt Curtain

The following factors have been taken into account during the preparation for this silt curtain deployment plan:

3.1 The seawall construction and reclamation, including dredging and filling works will be carried out inside the CBTS and ex-Wan Chai Public Cargo Working Area. CBTS is surrounded by three breakwaters and the shorelines of the Hong Kong Island, leaving only two openings in the northeast and northwest corners as navigation accesses. Ex-Wan Chai Public Working Area is surrounded by the breakwater, pier of Royal Hong Kong Yacht Club and the shorelines of the Hong Kong Island, leaving one opening facing Victoria Harbour as navigation access.

- 3.2 The existing North Breakwater of the CBTS would serve as a barrier against the migration of sediment plumes, which may be generated by the dredging operation, to the water body in the Victoria Harbour.
- 3.3 The existing two cooling seawater intakes, one for the Winsor House and one for the Excelsior respectively, have been protected against any potential sediment plumes by the deployment silt screens following the stipulation in the conditions of the EP. According to Scenario 2B from Environmental Permit (EP) No. EP-356-2009 and FEP-04/356/2009, additional silt screen shall be provided as protection for Intake No.C31 for the Queensway Government Offices.
- 3.4 For removal of odorous sediment and slime at the south-western corner area of the CBTS, the double silt curtains shall be deployed to fully enclose the closed grab dredger during the dredging operation. Detail drawing CCW/EPD/021 is shown in Appendix A and details of the above silt curtain refers to the latest proposal for the removal of odorous sediment and slime under separate submission.
- 3.5 To minimize loss of sediment affecting the water quality due to filling works, the filling works for seawall construction shall be carried out behind silt curtain(s) and any seawall gap that need to be provided for marine access shall be surrounded by silt curtain(s) as detailed shown in Appendix C1.
- 3.6 The rate of dredging works at CBTS and TPCWA have been strictly governed by the conditions stated in the EP, i.e. $6,000\text{m}^3$ per day (i.e. 375m^3 per hour) and $5,000\text{m}^3$ per day (i.e. 313m^3 per hour) respectively.
- 3.7 It is required by the Marine Department that the waterway at the existing accesses of the CBTS shall be maintained unobstructed for the sake of convenience and safety of the shelter users.
- 3.8 The existing CBTS is very congested and the marine works area is located in close proximity to the vessels in the Anchorage Area and Royal Hong Kong Yacht Club mooring area. Also the marine works area is entirely surrounded by the public navigation channels that are only 20m wide. Installation of silt curtain at the boundary between the works area and navigation channels will induce obstruction to the channel.
- 3.9 For the dredging works in the PMA which are defined as Non-Designated Project, the key concerns are described in the following Section 8.

4.0 Details of Proposed Silt Curtain System

4.1 Details and Installation of Silt Curtain

Taking into account of the key factors mentioned in Section 3 above, the silt curtain system to facilitate the dredging works is designed and its details are elaborated below:

- (a) The location plan of dredging areas of the designated project is shown in drawing no. CWBT/EPD/004A enclosed in Appendix A.
- (b) To cater for the dynamic situation within the CBTS, silt curtain shall be set up in a way such that adequate protection towards from the nearby intakes, proper tidal flushing to circulate the embayed water and navigation safety of vessels can all be ensured during the dredging operation. The technical details of silt curtain for dredging works is shown in Appendix C.
- (c) Taking account of the tidal range, the station silt curtains would be extended to the seabed level as much as practicable.
- (d) Apart from the silt curtain mentioned in paragraph 4.1(b), a silt curtain frame mounted on the dredger barge will be constructed with double layer of geotextile materials. The toe of the curtain will be lowered simultaneously with the increase of dredging depth so as to prevent migration of sediment plume out of the silt curtain. A sufficient clearance between the toe of the silt curtain and the seabed is maintained in order to prevent the disturbance to the seabed due to the underwater current.

4.2 Maintenance for Silt Curtain

Proper maintenance will be carried out for the proposed silt curtain system and the procedures are laid down below:

- 4.2.1 Site supervisors should be responsible to inspect the condition of the silt curtain daily during the course of marine works. An inspection checklist will be filled by the site supervisors. All completed checklists should be kept on site for record purpose. A template of checklist is attached in Appendix D.
- 4.2.2 If any silt curtain is found damaged and repairing works are considered necessary, all dredging works at location within 50m from the damaged curtain will be temporarily ceased. The silt curtain will be lifted up from sea by chain block pulley system with the aid of crane barge if necessary so that the whole/part of silt curtain (dependent on the extent of damage) will be replaced. In case of repairing any damaged floats, temporary cessation of dredging works is not necessary.

- 4.2.3 Before and during removal of the damaged silt curtain, site supervisor should closely communicate with operators of other marine plants to ensure no dredging works will be carried out in region within 50m from the location of silt curtain maintenance. The ceased dredging works will be resumed after the damaged silt curtain is satisfactorily repaired.
- 4.2.4 As a regular maintenance, refuse or debris around the silt curtain would be collected on daily basis to avoid adverse effect to marine plants as well as to the public.
- 4.2.5 Spare geotextile materials and other associated components will be stored on site for readily repairing/replacement in case of damages.

5.0 Deployment Schedule

The anticipated schedule of the silt curtain deployment is shown in the table below. It is prepared based on the latest Works Programme and may subject to changes to cope with the actual site situation and progress.

	Anticipated Installation Date	Anticipated Removal Date
Other marine works		
Maintenance dredging for navigation safety at PMA	20 Nov 2010	26 Nov 2010
TCBR1E		
Dredging for seawall	03 Dec 2010	26 Feb 2011
Temp. reclamation	28 Jan 2011	06 Apr 2011
Removal of temp. reclamation	30 Jan 2012	25 Feb 2012
TCBR1W		
Dredging for seawall, including the removal of odorous sediment	17 Jan 2011	26 Jan 2011
Temp. reclamation	09 Mar 2011	15 May 2011
Removal of temp. reclamation	27 Oct 2013	21 Nov 2013
TCBR2		
Dredging for seawall	16 Dec 2011	17 Feb 2012
Temp. reclamation	26 Feb 2012	19 Jun 2012
Removal of temp. reclamation	18 Aug 2013	13 Oct 2013
TPCWAE		
Dredging for seawall	02 Dec 2010	27 Jan 2011
Temp. reclamation	26 Jan 2011	14 Apr 2011
Removal of temp. reclamation	27 Sept 2013	26 Oct 2013
TPCWAW		
Dredging for seawall	28 Oct 2013	13 Dec 2013
Temp. reclamation	14 Dec 2013	06 Mar 2014
Removal of temp. reclamation	02 Jul 2015	20 Aug 2015

6.0 Construction Programme

6.1 The Initial Works Programme for the project is enclosed in Appendix B.

7.0 Technical Details of Silt Curtain

- 7.1 “Bontec” SG110/110 woven geotextile will be used for all proposed silt curtains and double-layered silt curtain frame.
- 7.2 The technical data and previous job references of the proposed geotextile material is enclosed in Appendix C2.

8.0 PMA Dredging Works

- 8.1 The PMA dredging would involve dredging of about 33,000m³ sediment, and the location of the proposed dredging would be more than 170m away from the nearest seawater intake point.
- 8.2 The works are considered as “maintenance dredging works” of the CBTS for navigation safety purpose and not part of the originally proposed dredging works for the CWB project. Such kind of maintenance dredging works for navigation safety purpose have been conducted from time to time in HK waters, including the CBTS (e.g. in 1994, 1995, 2001, 2005 within the CBTS; and 195,000m³ of sediment was dredged by CEDD’s term contractor in 2001).
- 8.3 The PMA dredging would not be concurrent with any other dredging activities within the CBTS.
- 8.4 The dredging rate for the PMA dredging will be same as or less than that stipulated in EP-356/2009 within the CBTS. Silt curtains and silt screens would be deployed as stipulated in EP-356/2009 to reduce any water quality impact.
- 8.5 Other established requirements under the Dumping At Sea Ordinance and ETWB TCW No. 43/2002 shall be followed.
- 8.6 The dredging works in PMA is not a designated project by itself and is not a material change to “Reclamation works including associated dredging works” which was referred as “DP3” in the WDII&CWB EIA Report under EIAO.
- 8.7 The silt curtain to be deployed for the PMA dredging works will follow the details as mentioned in Section 3 above and Appendix C1. In addition, two stationed silt curtains, namely no.1a and no.1b, will be installed at the two entrances of the typhoon shelter during

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Central -Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)

the course of PMA dredging works. The detail of the stationed silt curtains are also enclosed in Appendix C1.

9.0 Appendices

- 9.1 Appendix A – Location Plans of Dredging Works
- 9.2 Appendix B – Initial Works Programme
- 9.3 Appendix C1 – Detail Drawing of Silt Curtains
- 9.4 Appendix C2 – Technical Details of Silt Curtain
- 9.5 Appendix D – Daily Checklist Template

Appendix A – Location Plans of Dredging Works

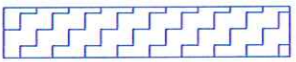
港口
HARBOUR



LEGEND:



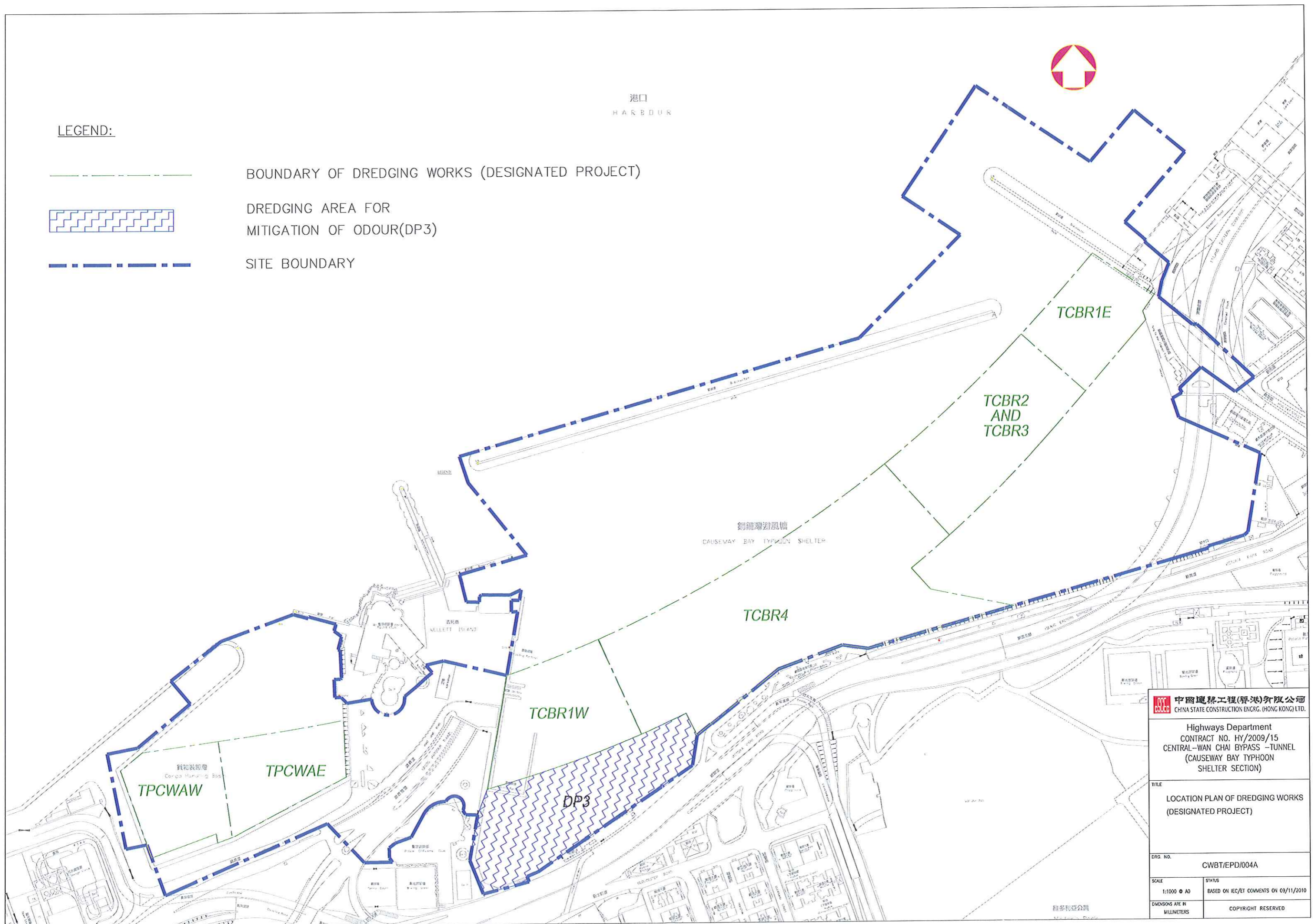
BOUNDARY OF DREDGING WORKS (DESIGNATED PROJECT)



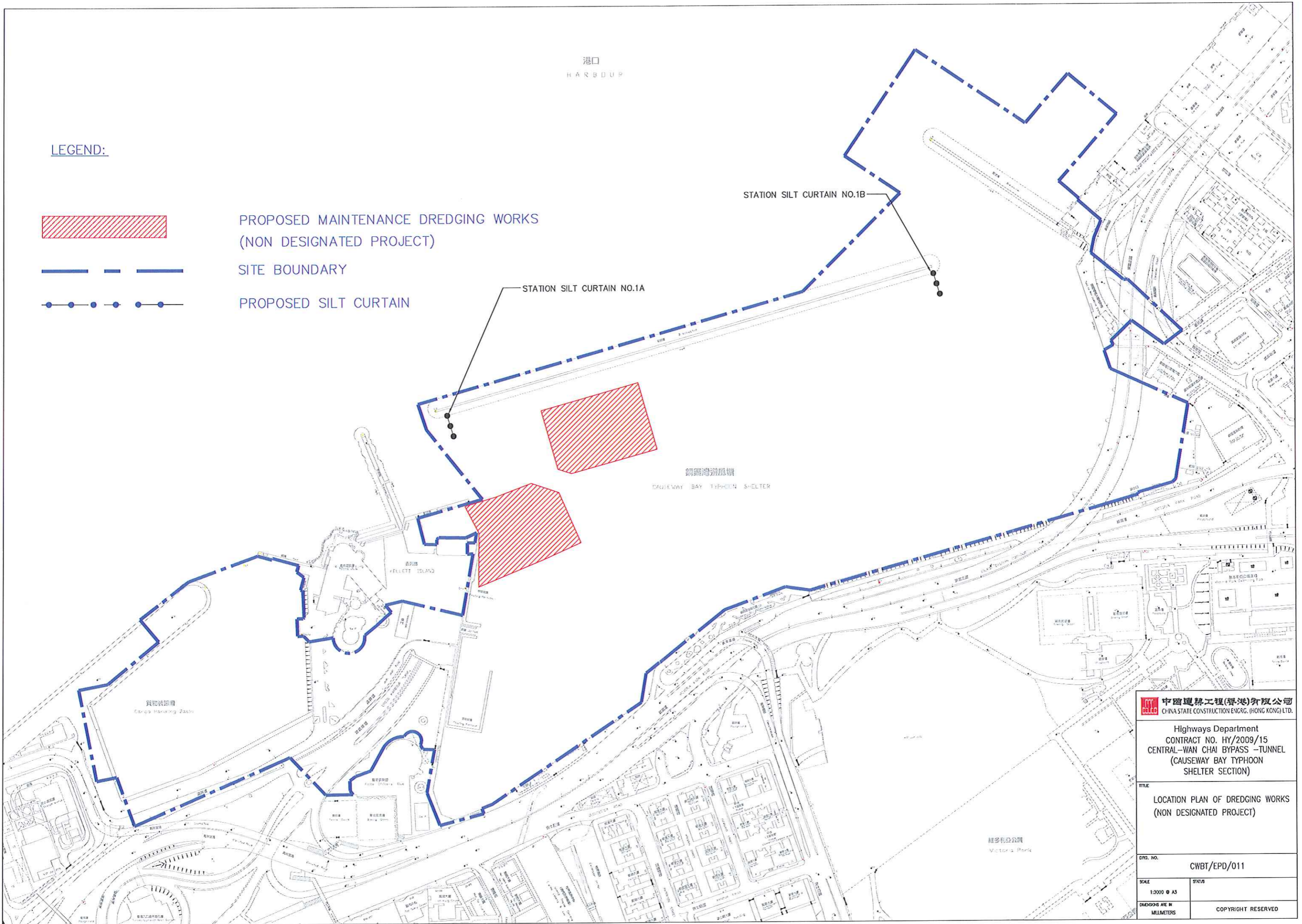
DREDGING AREA FOR MITIGATION OF ODOUR(DP3)



SITE BOUNDARY



<p>中國建築工程(香港)有限公司 CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.</p>	
<p>Highways Department CONTRACT NO. HY/2009/15 CENTRAL-WAN CHAI BYPASS -TUNNEL (CAUSEWAY BAY TYPHOON SHELTER SECTION)</p>	
<p>TITLE LOCATION PLAN OF DREDGING WORKS (DESIGNATED PROJECT)</p>	
<p>DRG. NO. CWBT/EPD/004A</p>	
<p>SCALE 1:1000 @ A0</p>	<p>STATUS BASED ON IEC/ET COMMENTS ON 09/11/2010</p>
<p>DIMENSIONS ARE IN MILLIMETERS</p>	<p>COPYRIGHT RESERVED</p>



LEGEND:




PROPOSED MAINTENANCE DREDGING WORKS
(NON DESIGNATED PROJECT)



SITE BOUNDARY



PROPOSED SILT CURTAIN

 中國建築工程(香港)有限公司 CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.	
Highways Department CONTRACT NO. HY/2009/15 CENTRAL-WAN CHAI BYPASS -TUNNEL (CAUSEWAY BAY TYPHOON SHELTER SECTION)	
TITLE LOCATION PLAN OF DREDGING WORKS (NON DESIGNATED PROJECT)	
DRG. NO. CWBT/EPD/011	
SCALE 1:3000 @ A3 DIMENSIONS ARE IN MILLIMETERS	STATUS COPYRIGHT RESERVED

IMPERMEABLE BARRIER EXTENDED DOWN TO SEABED TO ISOLATE THE ODOROUS SEDIMENTS

PORTION FOR REMOVAL OF ODOROUS SEDIMENT

-4.3 mPD

DOUBLE LAYER SILT CURTAINS FOR DREDGING AREA DURING THE DREDGING OPERATION

中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.

Highway Department
CONTRACT NO. HY/2009/15
CENTRAL-WAN CHAI BYPASS -TUNNEL
(CAUSEWAY BAY TYPHOON
SHELTER SECTION)

TITLE
DETAILS OF IMPERMEABLE
BARRIER AND SILT CURTAIN
ARRANGEMENT FOR ODOROUS
SEDIMENT

DRG. NO.
CCW/EPD/021

SCALE
1:500 @ A3

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Contract No. HY/2009/15

Central -Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)

Appendix B – Initial Works Programme

Activity ID	Activity Name	Original Duration	Start	Finish	2010		2011				2012				2013				2014				2015				2016				2017
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
SUBMISSIONS COMPLYING WITH EPs																															
002	EM&A Manual (rely on the master EP's submission, EP-356/2009 condition 2.5)																														
004	Baseline Monitoring Report (rely on the master EP's submission, EP-356/2009 condition 3.3)																														
006	Monthly EM&A (rely on the master EP's submission, EP-356/2009 condition 3.4)																														
008	A dedicated web site (rely on the master EP's submission, EP-356/2009 condition 4.2)																														
010	Management organization of main construction companies (FEP condition 2.6)	1	02-Oct-10*	02-Oct-10																											
012	Work schedule and location plans (FEP condition 2.7)	1	27-Oct-10*	27-Oct-10																											
014	Silt curtain deployment plan (FEP condition 2.8)	1	27-Oct-10*	27-Oct-10																											
020	Silt screen deployment plan (FEP condition 2.9)	1	27-Oct-10*	27-Oct-10																											
030	Noise management plan (FEP condition 2.20)	1	27-Oct-10*	27-Oct-10																											
040	Proposal for the removal of odorous sediment and slime in CBTS (FEP condition 2.18)	1	10-Jan-11*	10-Jan-11																											
050	Landscape plan (FEP condition 2.21)	1	31-Jan-11*	31-Jan-11																											
TCBR4																															
100	Maintenance dredging for navigation safety for relocation of RHKYC mooring at Area B	7	20-Nov-10*	26-Nov-10																											
TCBR2 + TCBR3 (TS2 Area)																															
115	TCBR2&TCBR3(TS2) - Maintenance dredging for navigation safety at Area A for relocation of commercial vessels	5	15-Nov-10*	19-Nov-10																											
117	TCBR2&TCBR3(TS2) - dredging & place rockfill below seabed in preparation for seawall block installation	64	16-Dec-11*	17-Feb-12																											
120	TCBR2&TCBR3(TS2) - temporary reclamation	115	26-Feb-12*	19-Jun-12																											
160	TCBR2&TCBR3(TS2) - removal of temporary reclamation	57	18-Aug-13*	13-Oct-13																											
TCBR1E (TS1 Area)																															
105	TCBR1E(TS1) - dredging & place rockfill below seabed in preparation for seawall block installation	86	03-Dec-10*	26-Feb-11																											
110	TCBR1E (TS1) - temporary reclamation	69	28-Jan-11*	06-Apr-11																											
155	TCBR1E (TS1) - removal of temporary reclamation	27	30-Jan-12*	25-Feb-12																											
TCBR1W (TS4 Area)																															
123	TCBR1W(TS4) - removal of odorous sediment and slime	10	17-Jan-11*	26-Jan-11																											
125	TCBR1W(TS4) - dredging & place rockfill below seabed in preparation for seawall block installation	40	28-Jan-11*	08-Mar-11																											
130	TCBR1W(TS4) - temporary reclamation	68	09-Mar-11	15-May-11																											
165	TCBR1W(TS4)- removal of temporary reclamation	26	27-Oct-13*	21-Nov-13																											
TPCWAE																															
135	TPCWAE - dredging & place rockfill below seabed in preparation for seawall block installation	55	03-Dec-10*	26-Jan-11																											
140	TPCWAE - temporary reclamation	77	27-Jan-11	13-Apr-11																											
170	TPCWAE-removal of temporary reclamation	28	28-Sep-13*	25-Oct-13																											

- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone

CHINA STATE CONSTRUCTION ENGG LTD

HY/2009/15 : Central-Wan Chai Bypass Tunnel (CBTS Section)

Date	Revision	Checked	Approved
06-Jan-11	Revision B		
	(File EP03)		
	(Layout EP03)		

Activity ID	Activity Name	Original Duration	Start	Finish	2010		2011				2012				2013				2014				2015				2016				2017
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
TPCWAW					<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"></div> <div style="width: 35%;"> <p> TPCWAW - dredging & place rockfill below seabed in preparation for seawall b</p> <p> TPCWAW - temporary reclamation</p> <p> TPCWAW - removal of temporary recla</p> </div> </div>																										
145	TPCWAW - dredging & place rockfill below seabed in preparation for seawall block installation	47	28-Oct-13*	13-Dec-13																											
150	TPCWAW - temporary reclamation	83	14-Dec-13	06-Mar-14																											
175	TPCWAW - removal of temporary reclamation	50	02-Jul-15*	20-Aug-15																											

- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Milestone

CHINA STATE CONSTRUCTION ENGG LTD

HY/2009/15 : Central-Wan Chai Bypass Tunnel (CBTS Section)

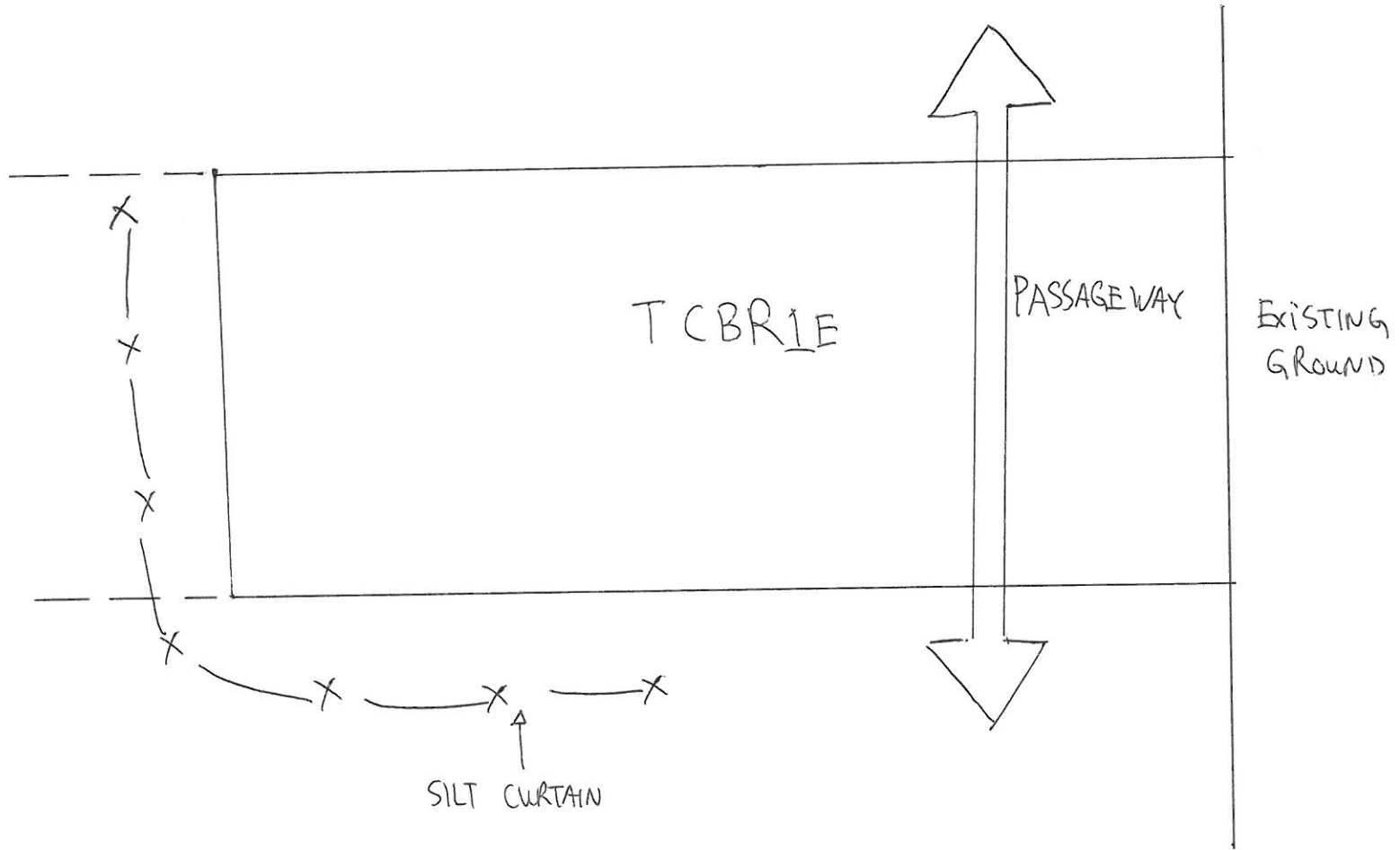
Date	Revision	Checked	Approved
06-Jan-11	Revision B		
	(File EP03)		
	(Layout EP03)		

Contract No. HY/2009/15

Central -Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)

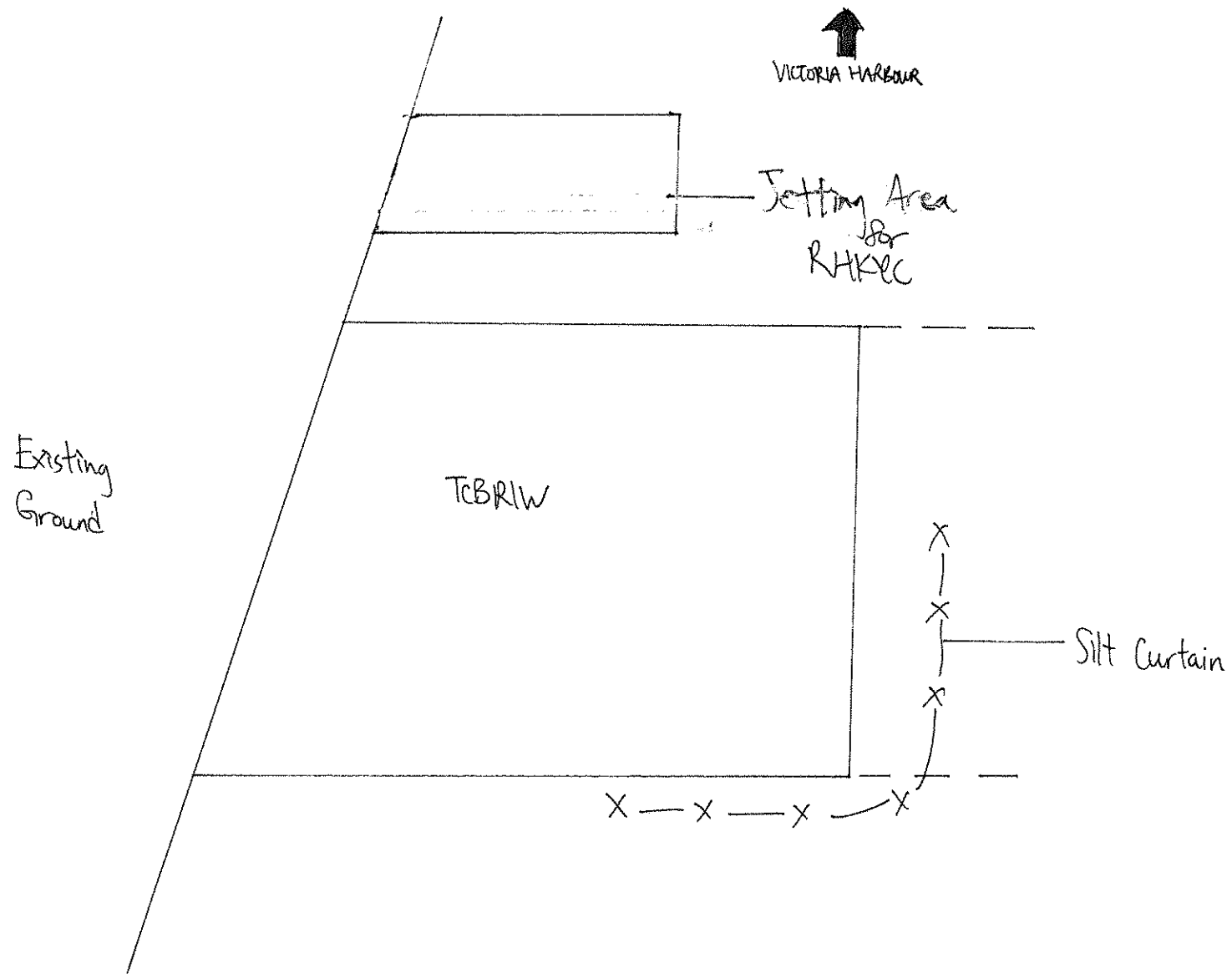
Appendix C1 – Detail Drawing of Silt Curtains

VICTORIA HARBOUR



LAYOUT PLAN FOR TCBRIE DURING DREDGING AND ROCKFILLING FOR SEAWALL CONSTRUCTION

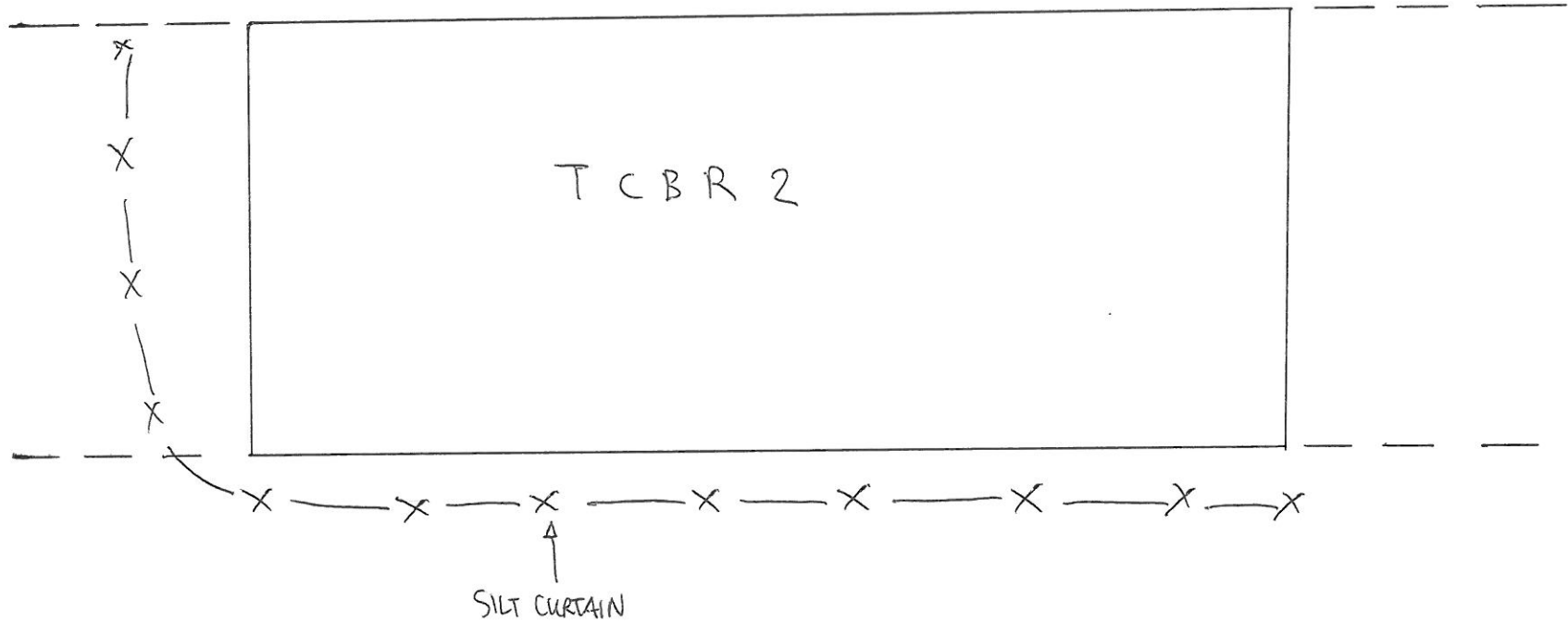
N.T.S.



LAYOUT PLAN FOR TCBRIW DURING DREDGING AND ROCKFILLING FOR SEAWALL CONSTRUCTION

N.T.S.

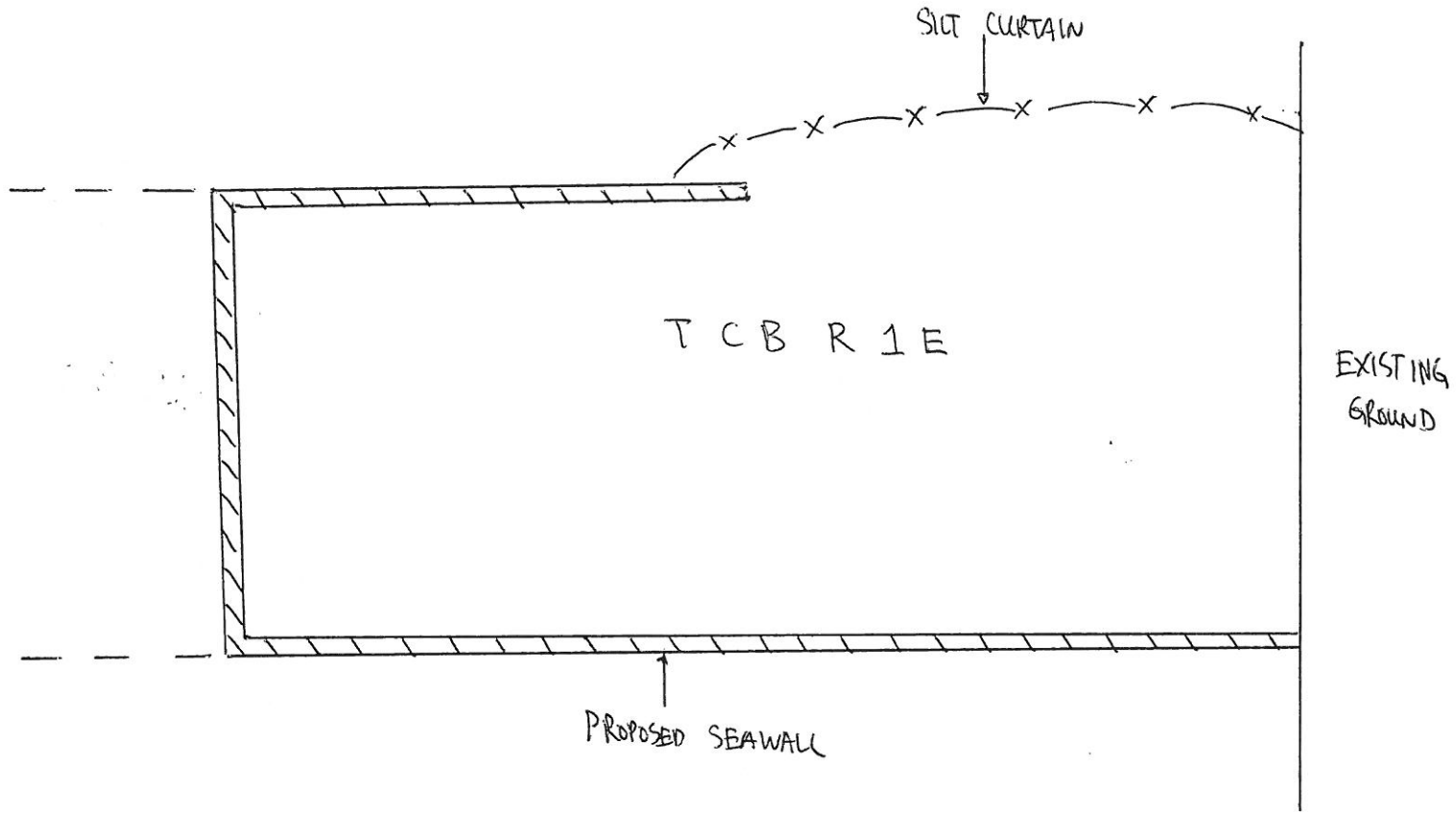
VICTORIA HARBOUR



LAYOUT PLAN FOR TCBR2 DURING DREDGING AND ROCKFILLING FOR SEAWALL CONSTRUCTION

N.T.S.

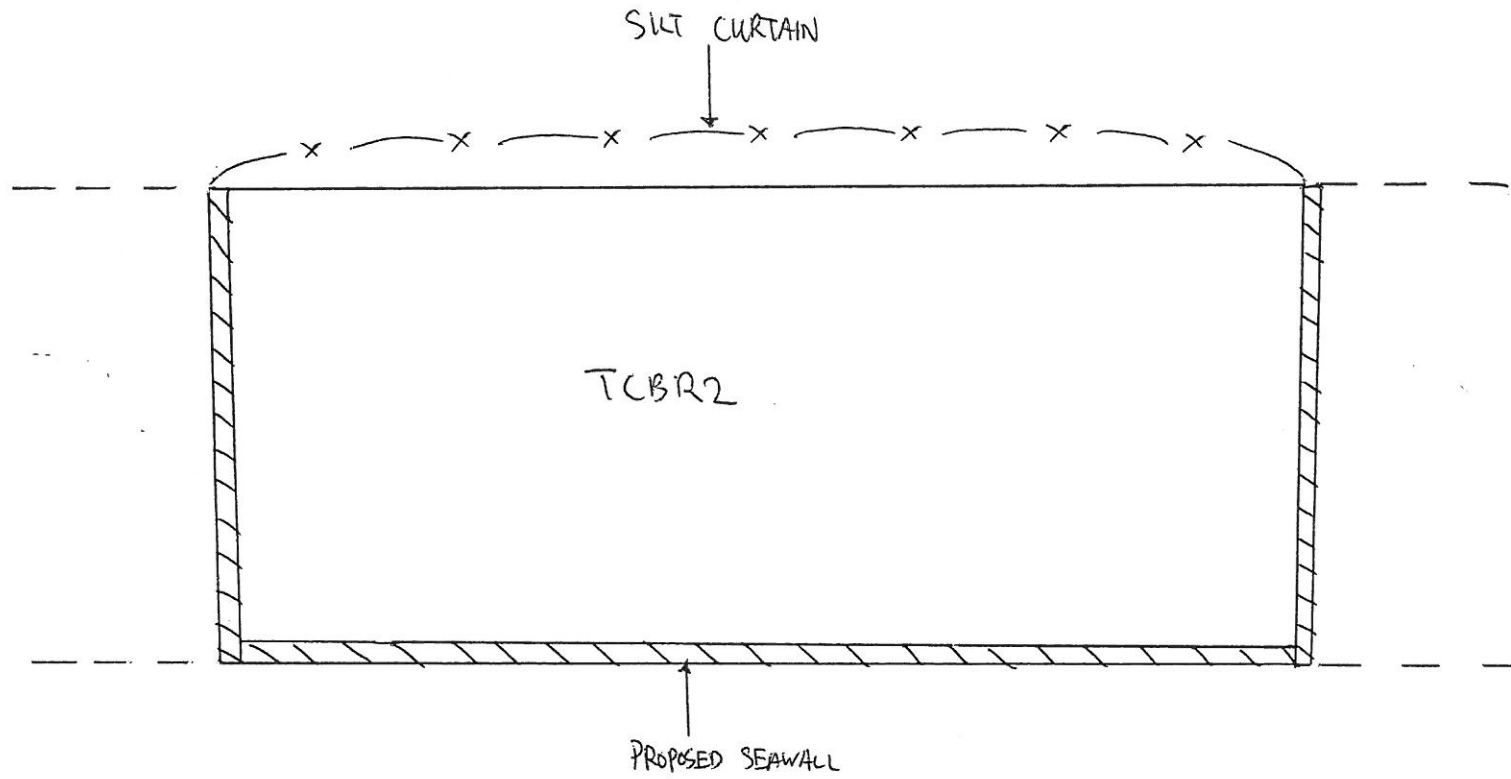
VICTORIA HARBOUR



LAYOUT PLAN FOR TCBRIE DURING FILLING AND RECLAMATION WORKS

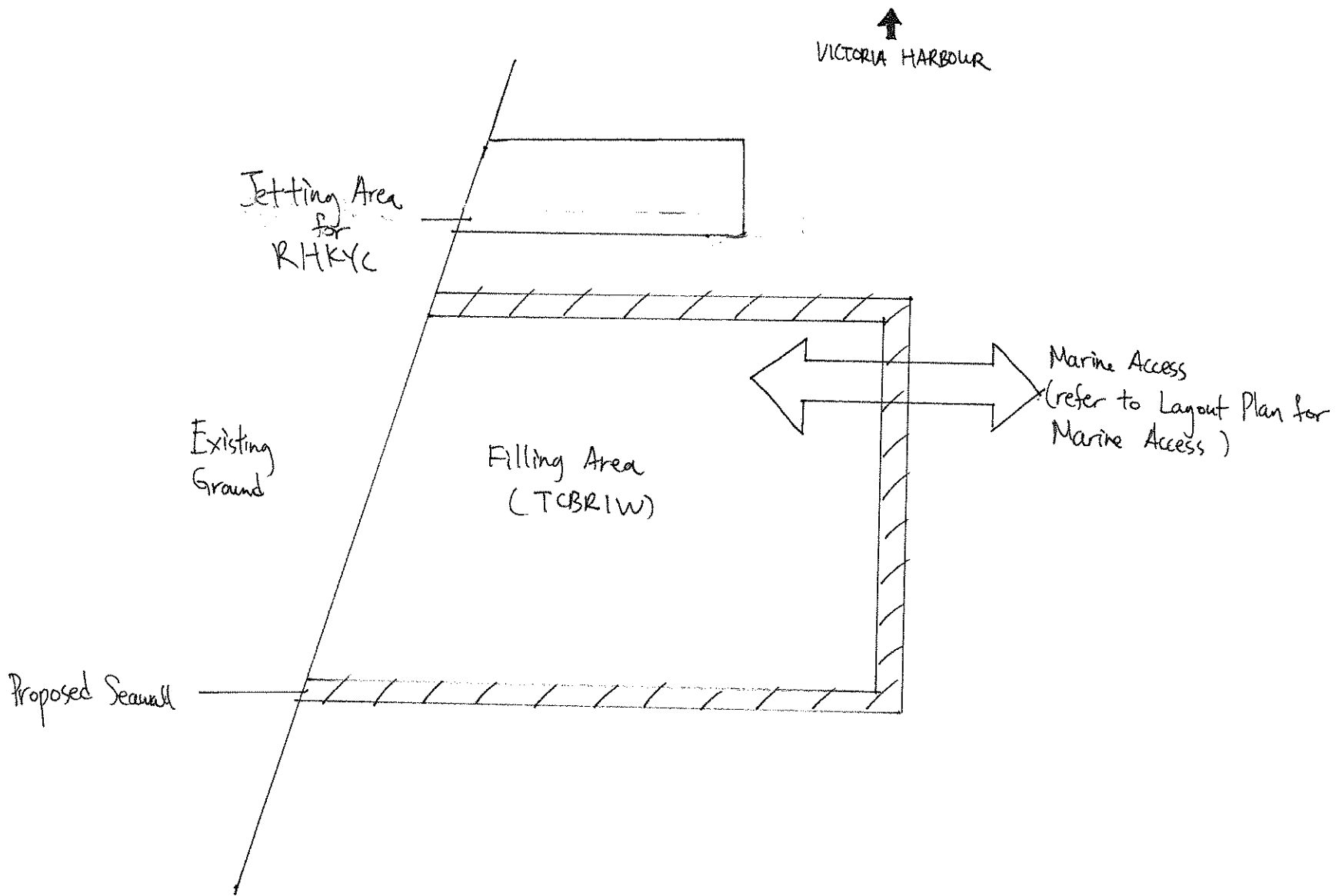
N.T.S.

VICTORY HARBOR

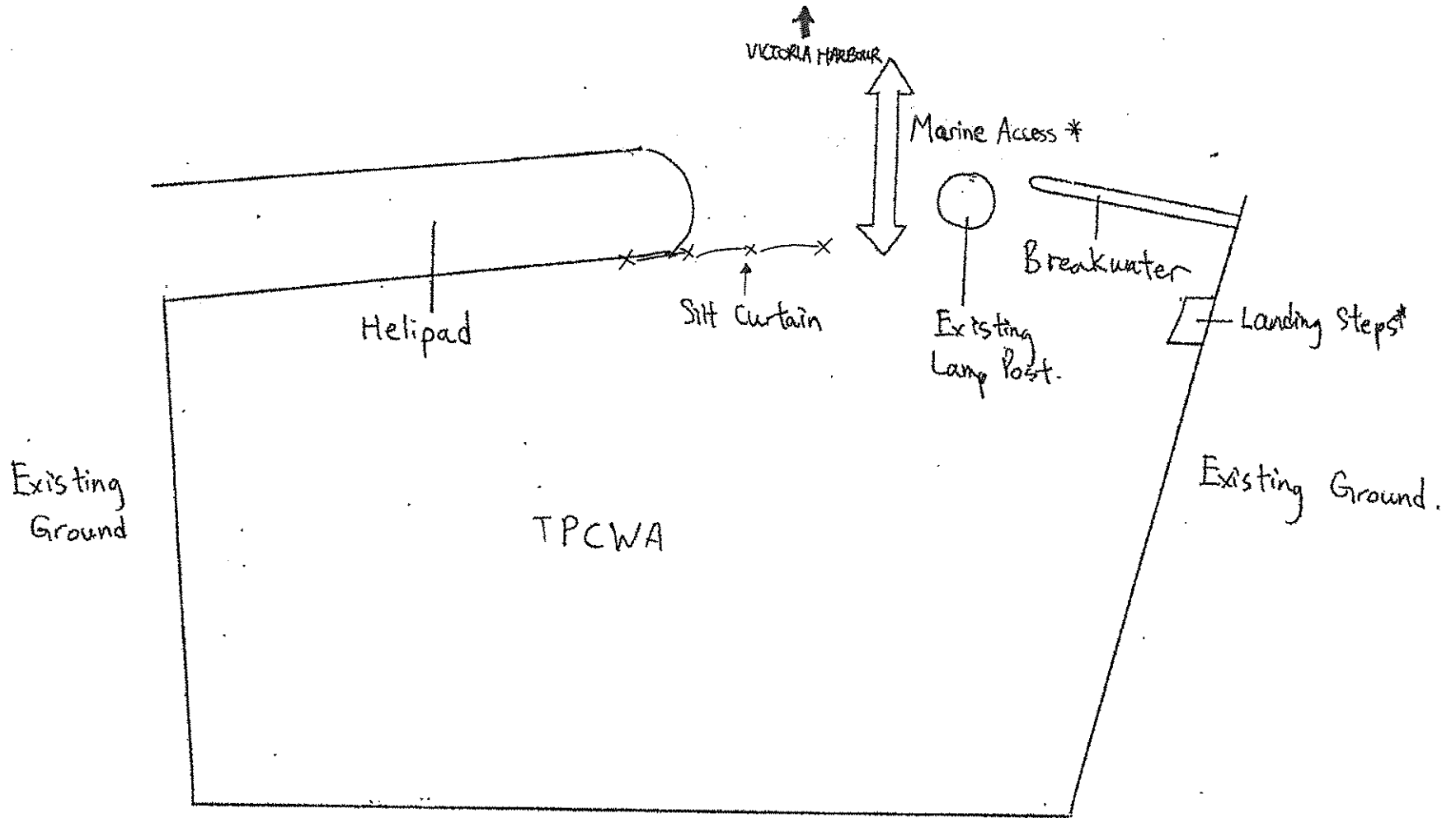


LAYOUT PLAN FOR TCBR2 DURING FILLING AND RECLAMATION WORKS.

N.C.S.



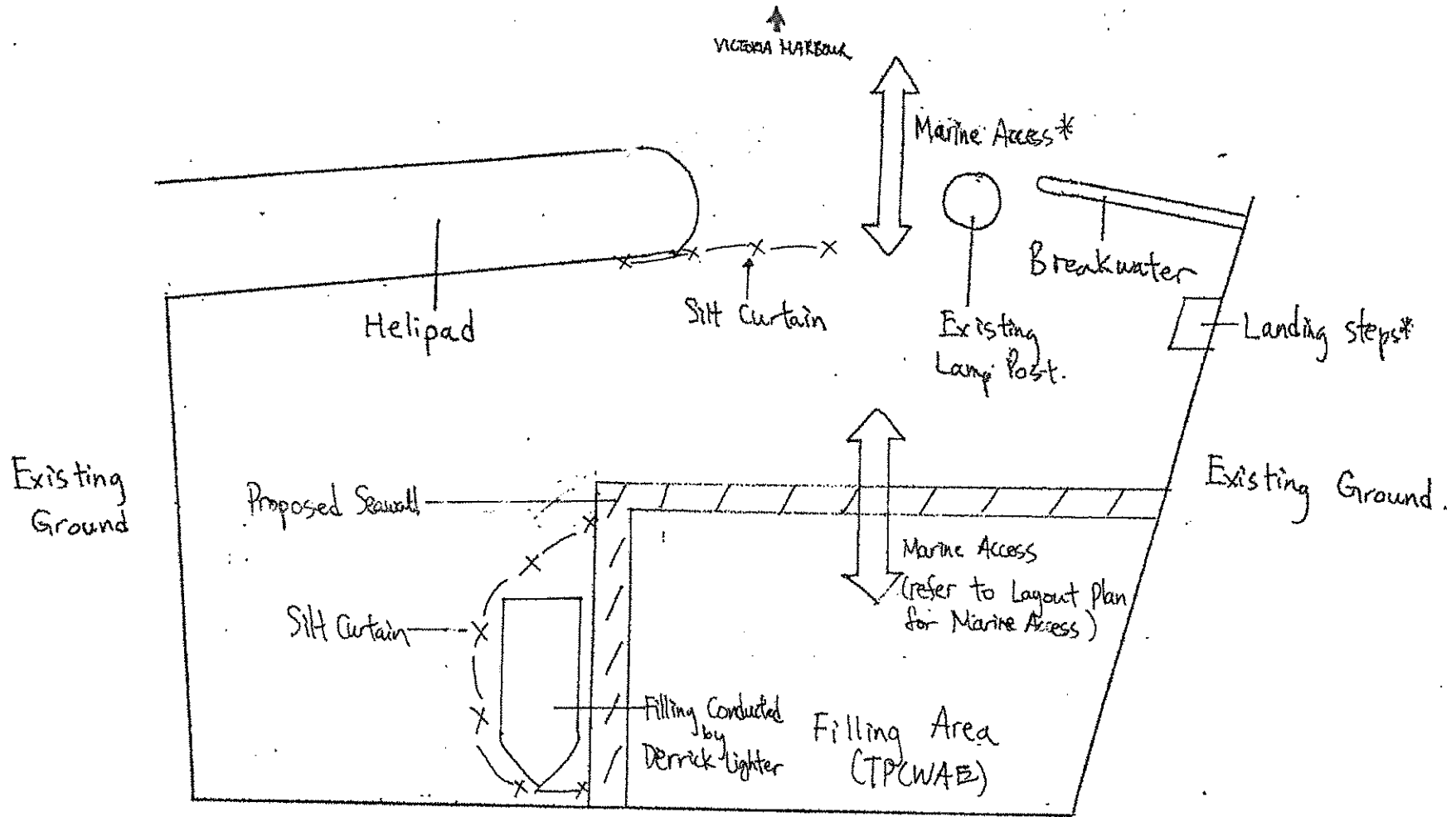
LAYOUT PLAN FOR TCBRIW DURING FILLING AND RECLAMATION WORKS



* Due to contract requirements, marine access shall be provided at all times for RHKYC to the landing step(s) in ex-PCWA abutting Kellett Island

LAYOUT PLAN FOR TPCWA DURING DREDGING AND ROCKFILLING FOR SEAWALL CONSTRUCTION

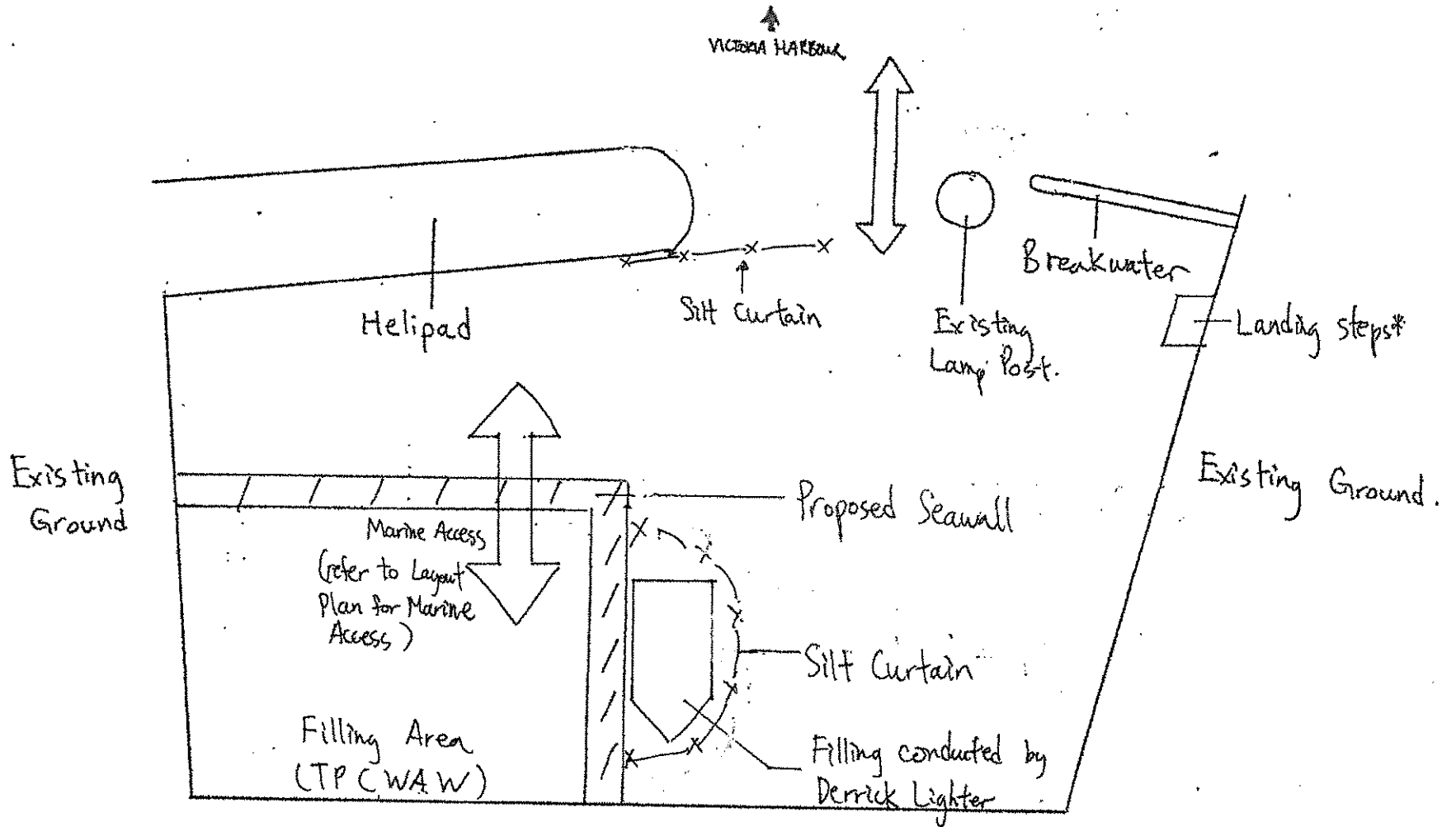
NTS.



* Due to contract requirement, marine access shall be provided at all times for RHKYC to the landing step(s) in ex-PCWA abutting Kellett Island

LAYOUT PLAN FOR TPCWAE DURING FILLING AND RECLAMATION WORKS

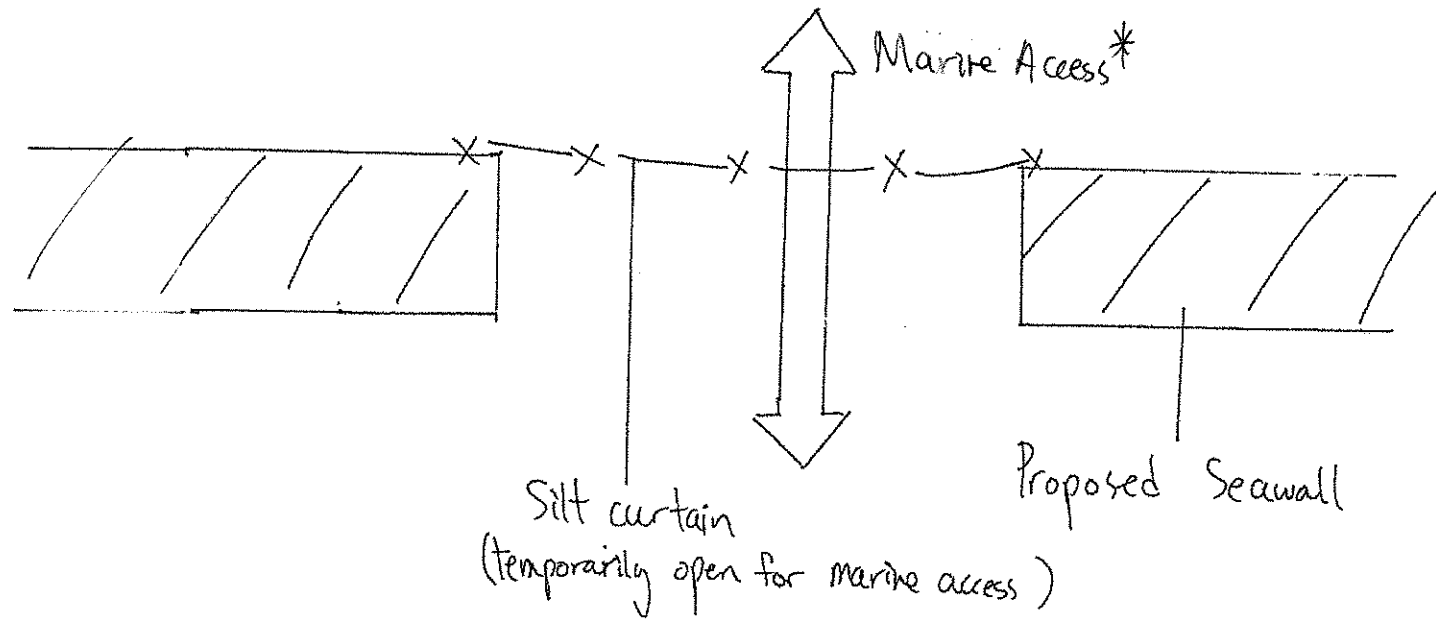
N.T.S.



* Due to contract requirements, marine access shall be provided at all times for RHKYC to the landing step(s) in ex-PCWA abutting Keillett Island

LAYOUT PLAN FOR TPCWAW DURING FILLING AND RECLAMATION WORKS

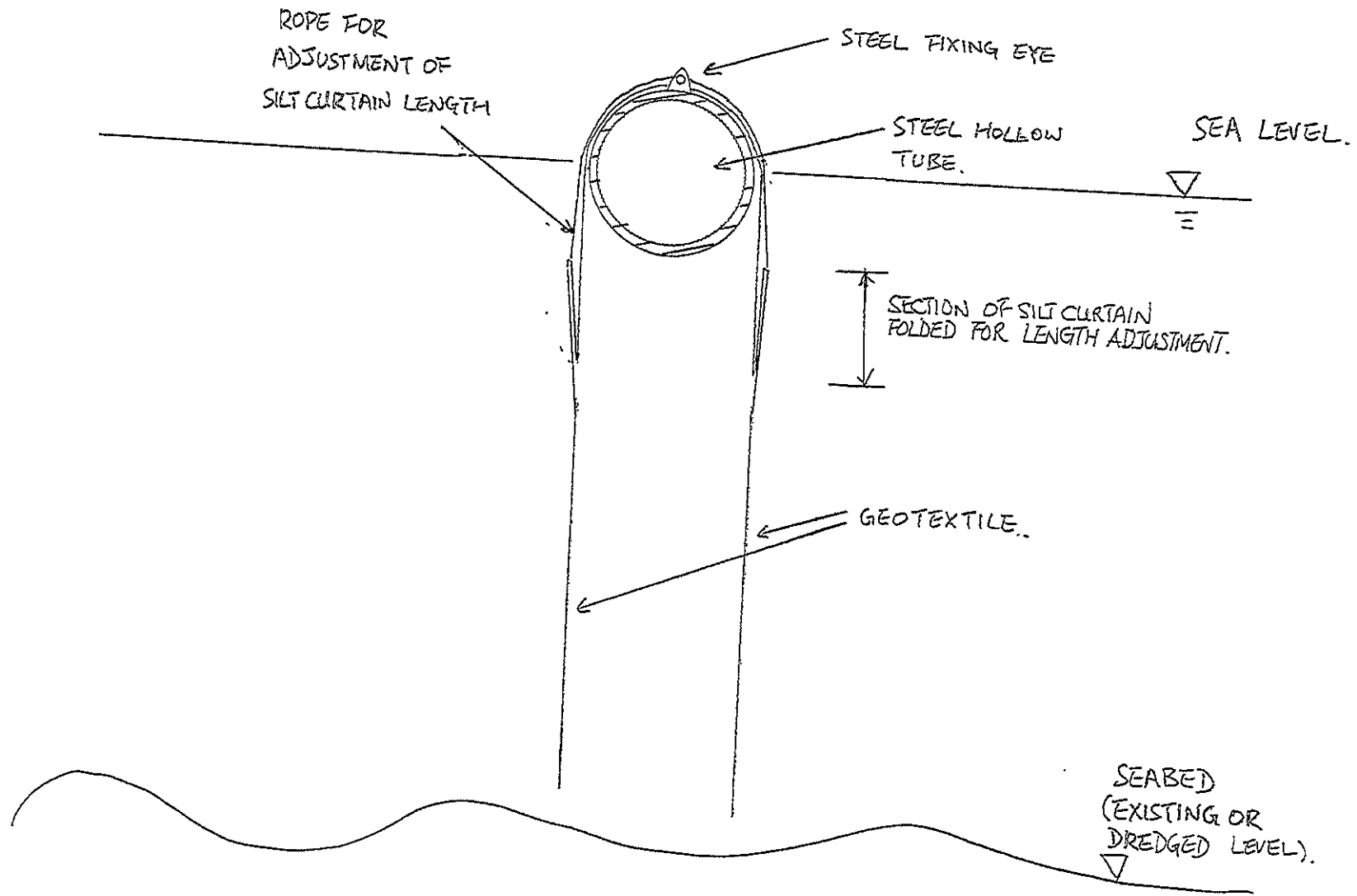
NTS.



* The layout plan for marine access is indicated for the northern seawall of TPCWAE and TPCWAW and eastern seawall of TCBRIW only.

LAYOUT PLAN FOR Marine Access

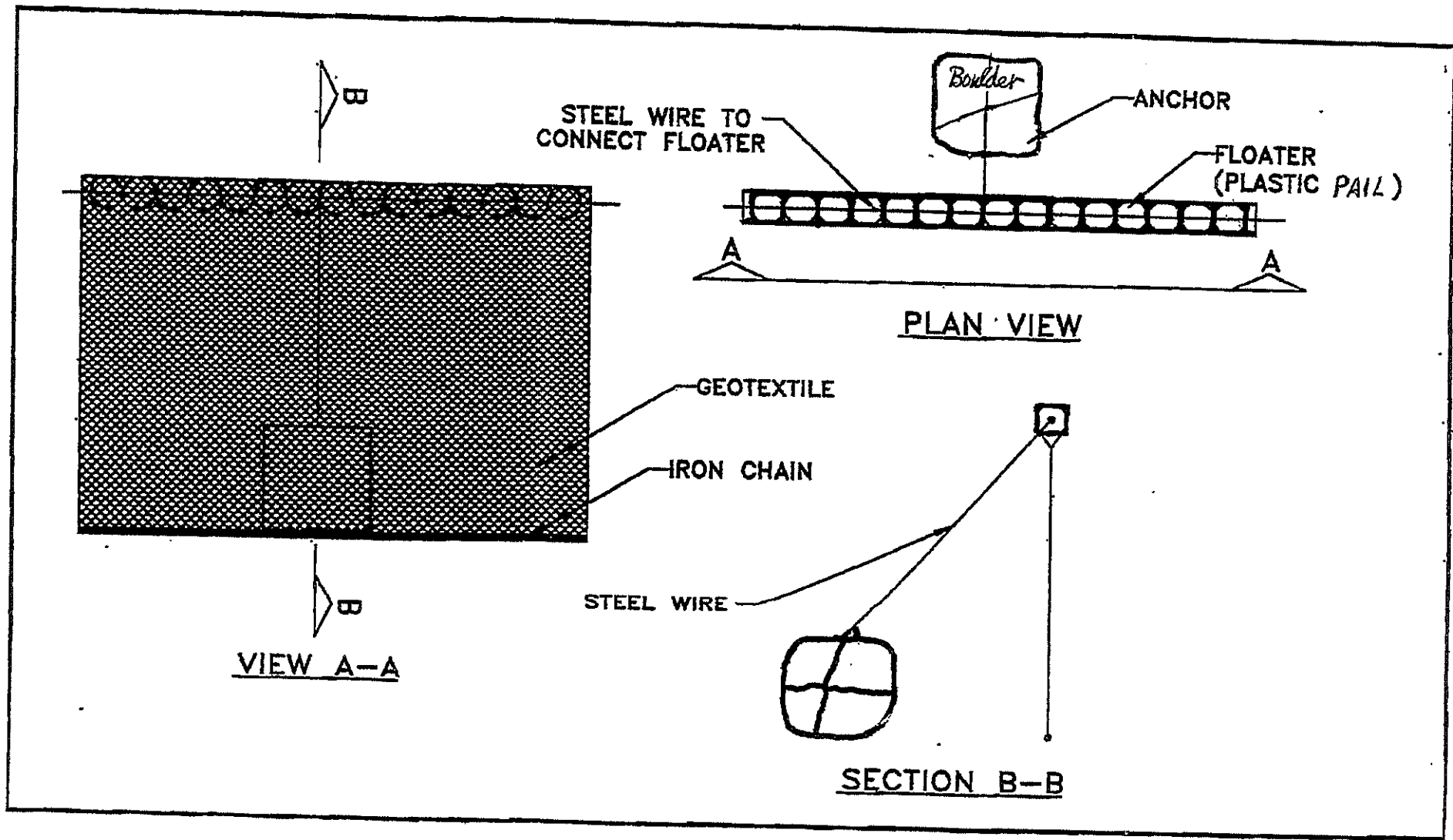
N.T.S.



DETAILS OF STEEL CURTAIN FRAME

SECTION

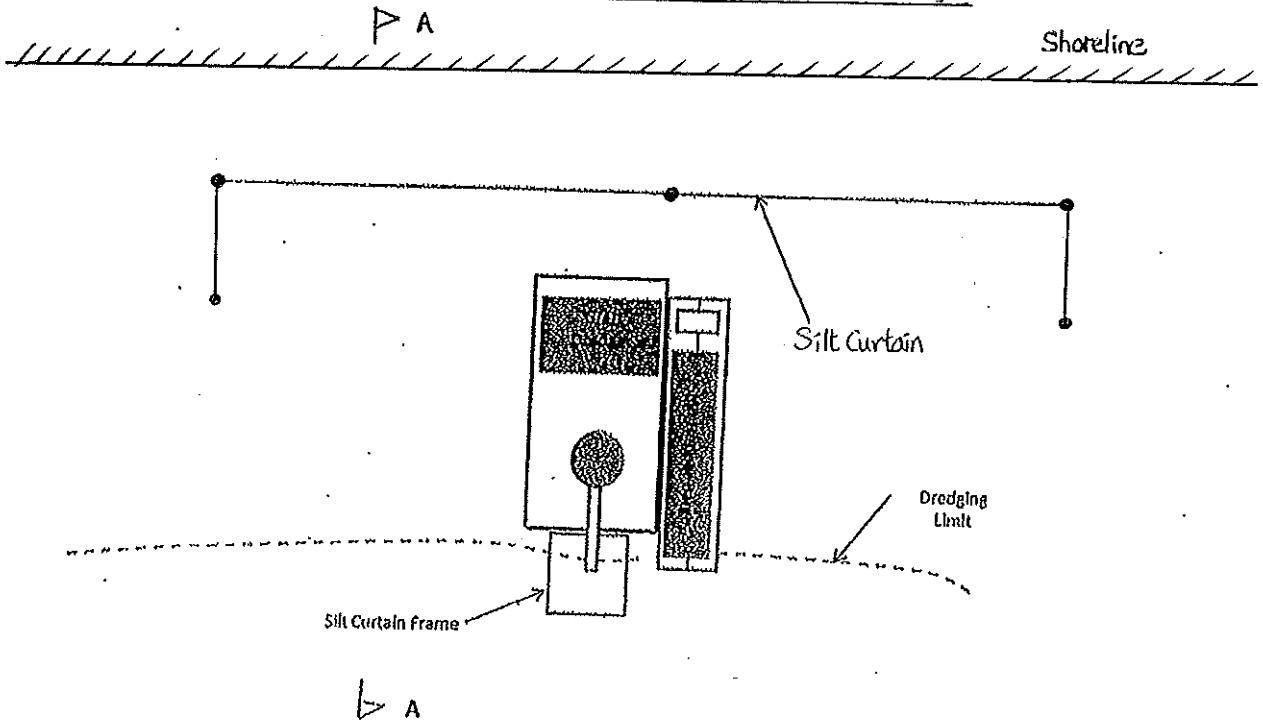
DRAWING NOT TO SCALE



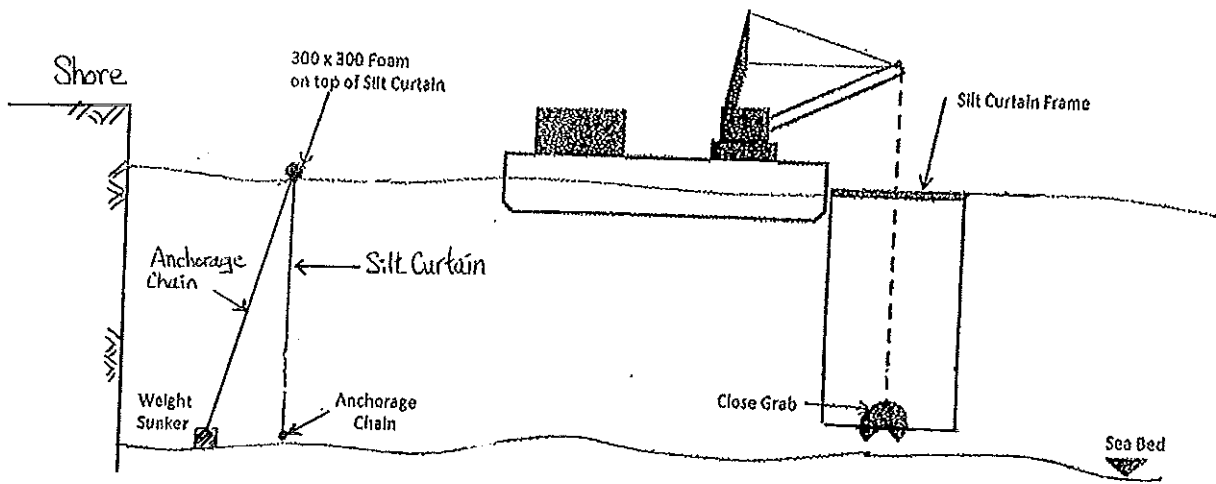
DETAILS OF STATION Silt curtain (Non DP)

Contract No. : HY/2009/15
Central - Wan Chai Bypass - Tunnel
(Causeway Bay Typhoon Shelter Section)

Details of Silt Curtain Arrangement (Applicable for Dredging in CBTS only)

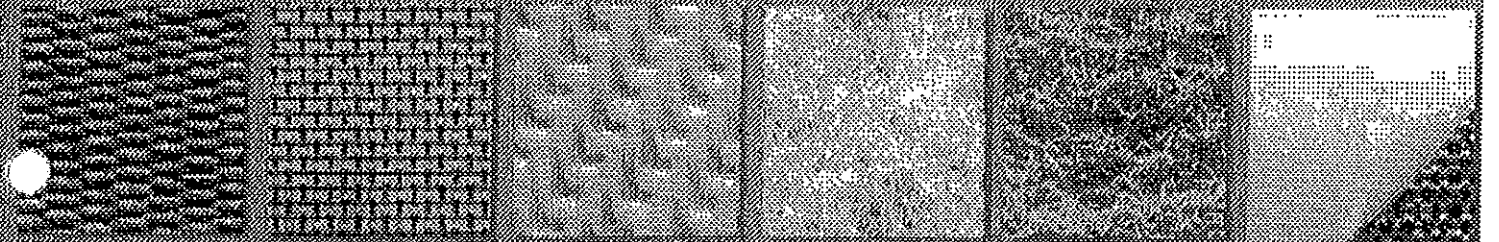


PLAN



SECTION A-A

Appendix C2 – Technical Details of Silt Curtain



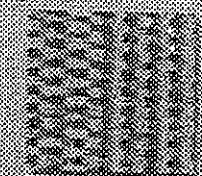
WE UNDERCOVER THE WORLD

bontec
woven and nonwoven geotextiles

A TOTAL RANGE OF GEOTEXTILES



SG WOVEN GEOTEXTILES



SG under **COVER** the world
bontec
 www.bonalf.com

A TOTAL RANGE OF GEOTEXTILES

bontec

SG Woven Geotextiles

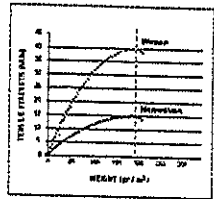
"An amazing range of Standard Grade geotextiles that offer the perfect solution to your Separation requirements. With tensile strengths ranging from 40 to 360 kN/m you can be certain that an SG fabric will be available with the performance that you are looking for."

DAILY SEPARATION, SOIL STRENGTHENING OR GROUND REINFORCEMENT

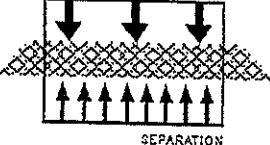
Bontec SG woven geotextiles are manufactured from polypropylene tapes & yarns and exhibit an excellent chemical resistance to commonly encountered acids and alkalis at ambient temperatures. Available in a lightweight range with products from 80 to 200g/m², and a heavyweight range from 200 to 800g/m².

Bontec SG more include:

- Tensile strengths up to 300 kN per metre (kN/m) width
- CSR Puncture Strengths ranging from 1,500 N to 12,500 N
- SG Mechanical Properties that offer maximum strength at minimal cost and ensure the products survivability both against installation damage and in the longer term.

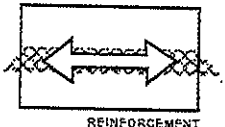


Lightweight woven geotextiles typically offer greater mechanical strengths per unit weight than comparable nonwoven grades. This makes lightweight woven geotextiles the ideal choice for separation.



SEPARATION

- Waterflows normal to the plane that are generally several times more than that required by design
- A range of consistent opening sizes suited for use in soils ranging from clay to coarse granular fill



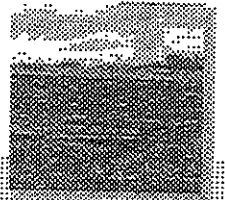
REINFORCEMENT

SG hydraulic properties that are suited to the demands of everyday separators.

Available ex-stock in 4.5m and 5.2m wide rolls or other widths to order.

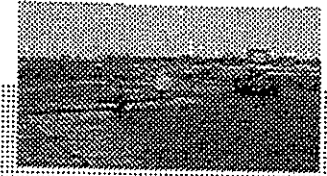
Typical applications for SG woven geotextiles include:

- As a general moisture separator for use under site access roads and areas of hardstanding.
- As a separation and strengthening layer under new roadways, car parks, industrial units etc
- As an erosion control layer under heavy rock armour in coastal defence projects.
- For any separation application where there exists a need to prevent the intermixing of soft foundation soils with good clean granular fill.



Other geotextiles available include the Bontec range include: Highflow, High strength Alkalis and Thermoally Bonded A... Needlepunched Nonwovens.

Visit us at our website www.bonalf.com



SG Woven Geotextiles have been manufactured using polypropylene tapes and yarns. They are made from polypropylene, a non-toxic, chemically resistant polymer and have a long life expectancy. They are available in a range of weights and widths to suit your application.

For further product information, please contact our technical support team. All products are manufactured in accordance with the requirements of BS EN 12324:2004 and BS EN 12325:2004.

For more information on BONTTEC WOVEN GEOTEXTILES or other geotextiles, please contact us on 01273 831234 or visit our website at www.bonalf.com. BONTTEC WOVEN GEOTEXTILES are available in a range of weights and widths to suit your application. Contact us for more information.



G AND E COMPANY LIMITED

Room B, 13/F Cheung Lee Industrial Bldg.

9 Cheung Lee Street

Chai Wan, Hong Kong

Tel: 2508 0058

Fax: 2570 0089

website: www.g-and-e.com

July 9, 2010

OFFICIAL ANNOUNCEMENT

I would like to inform you that geotextile Bontec SG100/100 is upgraded to SG110/110 effective immediately, and that SG100/100 has become obsolete. The performance of SG110/110 is superior to that of SG100/100.

No adjustment and adaptation are necessary to the current application, installation method, packaging and quality control assurance program with the improved properties of SG110/110.

Bonar Technical Fabrics is Europe's premier manufacturer of woven and non-woven geotextile products, with continuous commitment to quality, product development and production improvement. One of Bonar's many advantages is that they are vertically integrated. This means they have their own fiber production which helps ensure consistent product performance. Bonar also has a high production capacity with the facility located in close proximity to the Antwerp port. These translate into more efficient supply.

I have attached the manufacturer's letter here about the change for your reference. We would be happy to answer any questions that you may have.

Thank you for your kind attention.

Best regards

Gary Ng

Gary Ng
General Manager

bontec

a bonar technical fabrics product

Date: 5-Jul-10

To: G and E – Hong Kong
Gary

From: Isabelle Ruyffelaere – 0032 52 457 487
Philippe Grimmelprez – 0032 52 457 486

E mail: nannette@g-and-e.com

Pages: 1 +

Your reference: Bontec® SG 110/110

Our reference: G&E07052010.doc

Dear Gary,

We are pleased to confirm that the old name of the Bontec® SG100/100 has been replaced with the Bontec® SG 110/110.

Bonar constantly strives to increase the performance of the products over time. Thanks to improved polymers, extrusion and weaving techniques we managed to produce stronger geotextiles with the same unit weight. Hydraulic characteristics were not affected either.

Bonar uses very strict -in house- and ISO 9001:2000 quality and ISO 14001 environmental standards (in annex) and is using electricity generated from 100 % renewable sources.

We send hereby the newest datasheet as well for your information.

Should you require any further information, please do not hesitate to contact us.
Best regards

Philippe Grimmelprez
Global Sales & Marketing Manager



BONAR Technical Fabrics nv/oa
Internationaler Weg • B-2019 Zile • Belgium
tel. +32 (0)52 457 487 • Fax. +32 (0)52 457 486
E-mail: geotextiles@bonar.com

BONAR Yarns & Textiles Ltd.
5c, Sander Street • Dindon Road • UK • United Kingdom
tel. +44 (0)1762 949102 • Fax. +44 (0)1762 949316
E-mail: yarns@bonarfabrics.com

bontec

a bonar technical fabrics product



SG 110/110

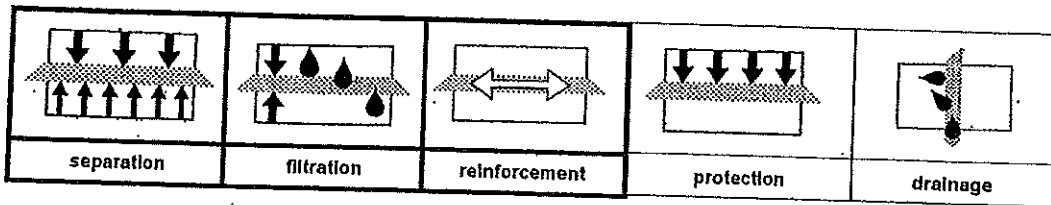
Woven polypropylene geotextile made of slit film tapes

Technical data sheet according to internal specifications Bonar TF: version 06 dd. 05/01/10
Accompanying documents CE marking: version 04 dd. 05/01/10



1137-CPD-615

10



	test method	value	tolerance
Mechanical properties			
Tensile strength MD		110,0 kN/m	-9,9 kN/m
Tensile strength CD	EN ISO 10319	110,0 kN/m	-9,9 kN/m
Elongation MD		12,0 %	+/-2,8 %
Elongation CD	EN ISO 10319	8,0 %	+/-1,8 %
Static puncture resistance - CBR	EN ISO 12236	12,60 kN	-2,60 kN
Dynamic perforation resistance - cone drop	EN ISO 13433	10,0 mm	+2,0 mm
Hydraulic properties			
Water permeability normal to the plane		25x10 ⁻³ m/s	-8x10 ⁻³ m/s
Water flow normal to the plane (*)	EN ISO 11058	25 l/m ² .s	-8 l/m ² .s
Characteristic opening size (AOS)	EN ISO 12956	230,0 µm	+/-69,0 µm
Physical properties			
Thickness under 2 kPa (*)	EN ISO 9863-1	1,53 mm	+/-0,31 mm
Weight (*)	EN ISO 9864	464,0 g/m ²	+/-46,4 g/m ²
Composition		100 % polypropylene woven geotextile	
Durability		predicted to be durable for a minimum of 25 years in natural soil with 4 < pH < 9 and soil temperatures < 25° C	

roads	railways	foundations & retaining walls	drainage systems	erosion control systems
EN 13249:2000	EN 13250:2000	EN 13251:2000	EN 13252:2000	EN 13253:2000
reservoirs & dams	canals	Tunnels & underground structures	solid waste	liquid waste
EN 13254:2000	EN 13255:2000	EN 13256:2000	EN 13257:2000	EN 13258:2000

1. This geotextile is intended for use in both functions & applications highlighted with a bold border.
 2. It is the responsibility of all users to satisfy themselves that the above data is current.
 3. Roll dimensions are 6,25 m x 100 m. Other dimensions on demand.
 4. Bonar Technical Fabrics reserves the right to alter product specifications without prior notice.
 5. Although not guaranteed, these results do to the best of our knowledge offer a true and accurate record of the product's performance.
 6. Bonar Technical Fabrics cannot accept responsibility for the performance of these products as the conditions of use are beyond our control.
 7. Geotextile has to be covered within 2 weeks after installation.
- (*) Not mandated characteristics for CE marking.



BONAR Technical Fabrics nv/sa, Industriestraat 39, 9240 Zele, BELGIUM - ☎ +32(0)52 457411 - ☎ +32(0)52 457495
BONAR Yarns & Fabrics Ltd, St. Salvador Street, Dundee DD3 7EU, UK - ☎ +44(0)1382 346102 - ☎ +44(0)1382 202378

Bonar

Date	Project	Client	Consultant	Style
Feb-05	CV/2003/06 Stanley Waterfront Improvement Project - Construction Pier and Boardwalk	Sun Fook Kong (Civil) Ltd	Civil Engineering and Development Department	SG100/100 NW10
Feb-05	99/9028 Lamma Power Station	Wai Kee (Zens) Construction & Transportation Co Ltd	Maunsell Geotechnical Services Ltd	SG100/100
Feb-05	CV/2004/02 Reconst. of Wong Shek & Ko Lau Wan Public Piers	Kin Shing Construction Co Ltd	Civil Engineering and Development Department	SG100/100
Apr-05	CV/2002/04 Penny's Bay Reclamation Stage 2	Gammon Skanska Ltd Shun Tat Construction Engineering Ltd	Scott Wilson Ltd	SG100/100 SG100/100
Apr-05	HK/12/02 CED, Central Reclamation Phase III, Engineering Works	Best Leader Engineering Ltd Leighton - China State - Van Oord Joint Venture	Atkins China Ltd	SG100/100 SG100/100
May-05	03/8013 Lamma Island to Cyberport	Leader Marine Contractors Ltd Honwin Engineering Ltd	Maunsell Geotechnical Services Ltd	SG100/100 SG100/100
Jul-05	Shenzhen to Tai Po Twin Submarine Gas Pipeline Project	Honwin Engineering Ltd		SG100/100
Sep-05	TP37/03 Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A	Leader - Wai Kee (C&T) Joint Venture	Hyder Consulting Ltd	SG100/100
Nov-05	HY/2002/26 Stone Cutter's Bridge	Hong Kong River Engineering Co Ltd	Ove Arup & Partners HK Ltd	SG100/100
Feb-06	CV/2005/12 Fill Reception Facilities at Tseung Kwan O Area 137 Quarry Bay and Mui Wo	Penta-Ocean Construction Co Ltd	Civil Engineering and Development Department	SG100/100
Mar-06	Maintenance Dredging at Castle Peak Power Station (CPPS) Jetty	New Concepts Engineering Development Ltd	Civil Engineering and Development Department	SG100/100
Mar-06	CV/2004/04 Maintenance and Repairs to Government / Public Piers and Immersed Tubes of Hung Hom Cross- Harbor Tunnel	China Harbour Engineering Co (Group)	Civil Engineering and Development Department	SG100/100
Mar-06	HY/2005/06 Castle Peak Road Improvement West of Tsing Lung Tau	Shun Tat Construction Engineering Limited Chun Wo Construction & Engineering Co Ltd	Mouchel Halcrow JV	SG100/100 SG100/100

May-06	212 Main Works for the Proposed Third Golf Course Development at Kau Sai Chau, Sai Kung	China Harbour Engineering Co (Group)	Ove Arup & Partners HK Ltd	SG100/100
Jun-06	Hong Kong Convention and Exhibition Centre Project - Silt Screening for Intake Pipe	Wai Kee (Zens) Construction & Transportation Co Ltd Kaden - Wai Kee (C&T) Joint Venture	NA	SG100/100 SG100/100
Aug-06	EP/SP/52/06 Development of EcoPark in Tuen Mun Area 38	Kaden Construction Limited	Scott Wilson Ltd	SG100/100
Sep-06	CV/2004/06 Management and Capping of Contaminated Mud Pit IV at East of Sha Chau - Phase III	Kaden - Wai Kee (C&T) Joint Venture	Civil Engineering and Development Department	SG100/100
Oct-06	Lamma Island Cable Landing	United Marine Co Ltd	Hong Kong Electric Co Ltd	SG100/100
Nov-06	CV/2004/01 Maintenance and Repairs to Seawalls, Piers and Other Port Works	Kin Shing Construction Co Ltd	Civil Engineering and Development Department	SG100/100
Dec-06	Private project	Friendly Benefit Engineering Ltd		SG100/100
Feb-07	Prebored Socketted H-Piles at Hong Kong Convention & Exhibition Centre	Yee Hop Engineering Co Ltd	NA	SG100/100
May-07	HY/2005/06 Castle Peak Road Improvement - West of Tsing Lung Tau	Chun Wo Construction & Engineering Co Ltd	Mouchel Halcrow JV	SG100/100
May-07	CV/2004/05 Dredging Maintenance	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100
Aug-07	Dredging Project in Lai Chi Kok Shipyard	Maritime Mechanic Ltd	NA	SG100/100
Aug-07	6/WSD/06 Construction of Salt Water Supply System for Penny's Bay	Univic Engineering Ltd	Water Supplies Department	SG100/100
Nov-07	Permanent Aviation Fuel Facility Hong Kong International Airport (Contract No. H2104)	UDL Dredging Ltd	Babtie Asia Ltd	SG100/100
Dec-07	Seawall Modify, Tuen Mun Area 38	Cheer Engineering Ltd	Scott Wilson Ltd	SG100/100
May-08	DC/2007/10 Design and Construction of HK West Drainage Tunnel	Tapbo Civil Engineering Co Ltd	Ove Arup & Partners HK Ltd	SG100/100
Sep-08	CV/2006/05 Maintenance of Seawalls and Navigation Channels	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100



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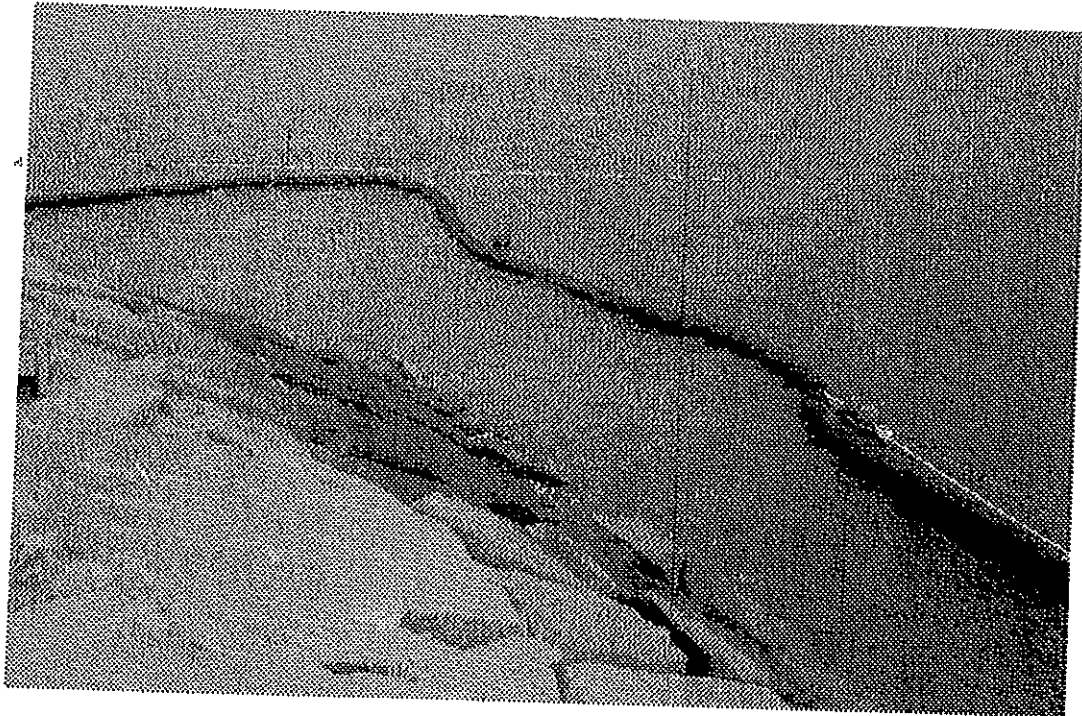
Room B, 13/F Cheung Lee Industrial Building
9 Cheung Lee Street,
Chai Wan, Hong Kong
Tel: 852-2508 0058 Fax: 852-2570 0089
website: www.g-and-e.com



Date	Mar 2010
Project	Contract No. KL/2009/01 Site formation for Kai Tak Cruise Terminal Development
Client	CEDD
Consultant	Scott Wilson Ltd
Main Contractor	Penta-Ocean Construction Co. Ltd
Works	SG100/100 as Silt Curtain
Size	1,050 sq m



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Date	March 2010
Project	KL/2009/01 Site formation for Kai Tak Cruise Terminal Development
Client	CEDD
Consultant	Scott Wilson Ltd
Main Contractor	Penta-Ocean Construction Co. Ltd
Materials	SG100/100
Size	1,050 sqm

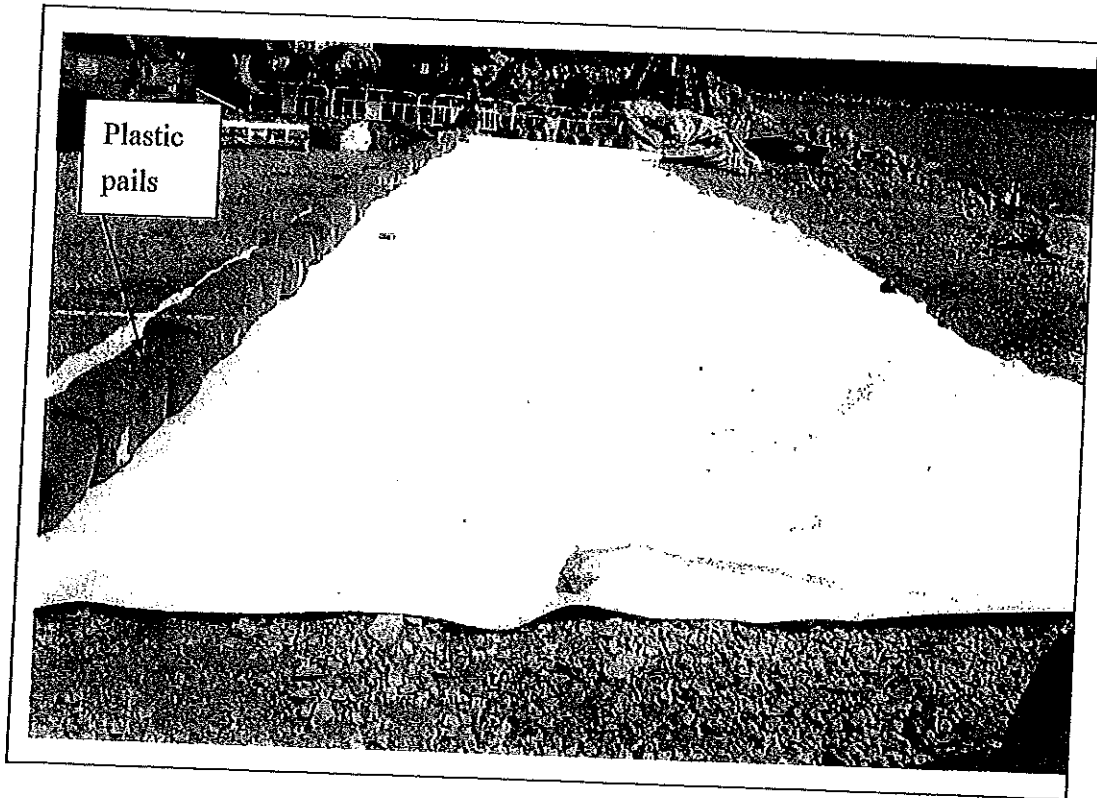


Photo shown Geotextile and Plastic Pails



中國建築工程(香港)有限公司

CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD

Contract No. HY/2009/15

Central -Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)

Appendix D – Daily Checklist Template

Silt Curtain每日檢查表

位置：_____ 編號：_____

日期：_____ 檢查員：_____

	星期一	星期二	星期三	星期四	星期五	星期六
1. 整潔						
1.1 沒有垃圾在浮架內						
1.2 已清理架內垃圾						
1.3 其它 (請註明):						
2. 浮架狀況						
2.1 浮架沒有損壞						
2.2 浮架接口沒有損壞						
2.3 螺絲及繩索沒有鬆脫						
2.4 其它 (請註明):						
3. 隔泥布狀況						
3.1 隔泥布沒有損壞						
3.2 隔泥布沒有鬆脫						
3.3 其它 (請註明):						
簽署:						

說明: ✓ = 滿意

x = 不滿意須改善

- = 不適用