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

Central – Wan Chai Bypass Tunnel
(Slip Road Section 8)
Contract No. HY/2010/08

Silt Curtain Deployment Plan under condition 2.8 of FEP- 07/356/2009

Revision: 3

November 2014

Prepared by: Environmental Officer	C. M Wong	Date: 25 November 2014

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1.0 Introduction

In accordance of the Further Environmental Permit No. FEP-07/356/2009, the purpose of this deployment plan is to illustrate the general layout, the construction programme, details on the design, operation and maintenance of silt curtain to be installed for dredging and reclamation works under the Central – Wan Chai Bypass Tunnel (Slip Road 8 Section) Project at Temporary Reclamation of Causeway Bay Typhoon Shelter TCBR4 as shown in Figure 2 of the Further Environmental Permit No. FEP-07/356/2009.

As the permit holder of the Further Environmental Permit No. FEP-07/356/2009, China State Construction Engineering (Hong Kong) Limited (hereafter CSHK) would be responsible for installation, maintenance, repairing (if necessary) and removal of the temporary works of silt curtain.

2.0 Scope of Works

In accordance with the Part B of Further Environmental Permit No. FEP-07/356/2009, this project is part of the designated project referred to as DP3 in the EIA report (Registration No.: AEIAR-125/2008) which involve

i) Temporary reclamation works of around 3 ha in size including associated dredging works at Causeway Bay Typhoon Shelter (hereafter CBTS);
ii) Removal of the temporary reclamation after the construction of the Trunk Road; and reinstatement of CBTS and
iii) Other associate works.

Location Plan of Dredging Works, please refers to **Appendix A**.

3.0 List of Reference Document

Relevant conditions in the EP and FEP are listed as follows for ease of references.

EP and FEP Condition	Remarks
EP No. EP-356-2009, Condition 2.8 and FEP-07/356/2009, Condition 2.8	- Referring to the Condition 2.8 stipulated in Environmental Permit No. EP-356/2009 and FEP-07/356/2009. The Permit Holder shall submit a silt curtain deployment plan at least two weeks prior to the commencement of the marine works. - 4 hard copies & 1 electronic copy of silt curtain deployment plan shall be certified by ET Leader and verified by the IEC as conforming to the relevant information and recommendation contained in the approved EIA Report (Register No.: AEIAR-125/2008).

4.0 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:-

4.1 The seawall construction and reclamation, including dredging and filling works will be carried out inside the CBTS. 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.

4.2 The existing North Breakwater of the CBTS forms two openings for the typhoon shelter, which allow vessels to and from the shelter. Generation of sediment plumes (such as dredging works operation) within typhoon shelter cannot be dispersed into the Victoria Harbour apart from these open ends. Please refer to Photo 01.

Photo 01: General view of the Causeway Bay Typhoon Shelter (CBTS).

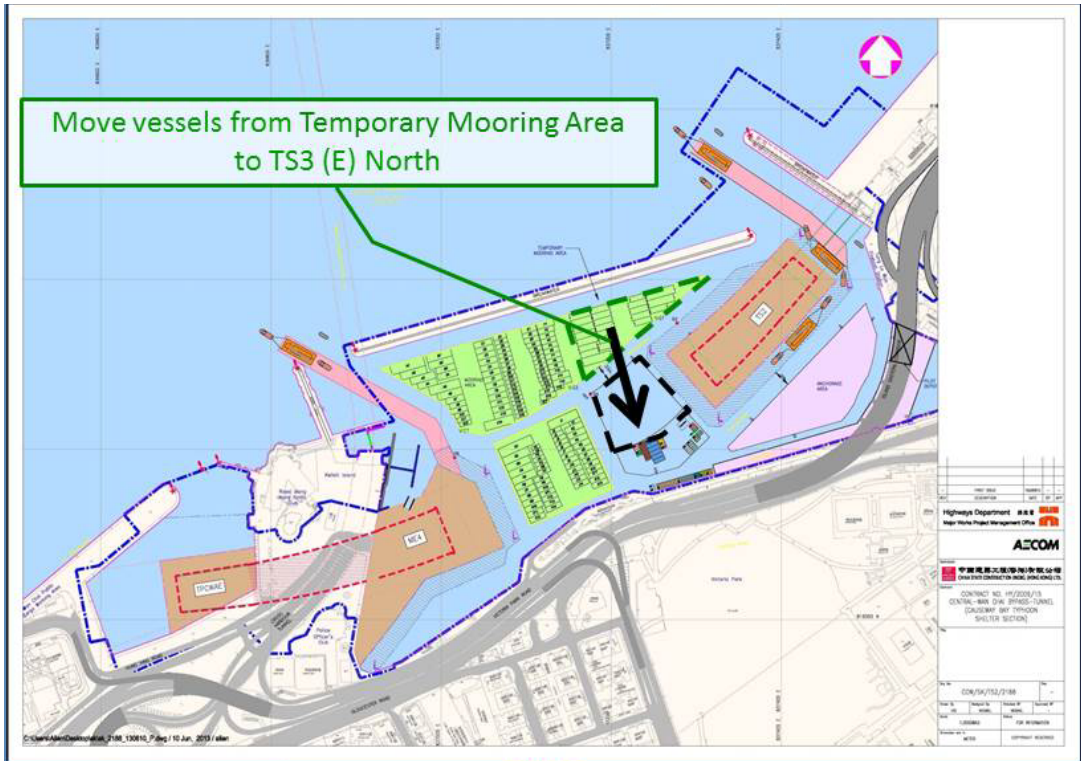
4.3 The existing cooling seawater intake for Windsor House (C7) has been protected against any potential sediment plumes by the deployment of silt screen following the requiement in the conditions of the relevant EP and FEPs.
[Remark: Protection of seawater intake(s) would be addressed under the condition 2.9 (silt screen deployment plan) of FEP-07/356/2009 in a separate submission. As the reclamation of TCBR4 will coincide with the existing Windsor House cooling water intake, diversion of the source of seawater and newly silt screen are described in silt screen deployment plan.]

4.4 To minimize the loss of sediment affecting the water quality due to filling works,

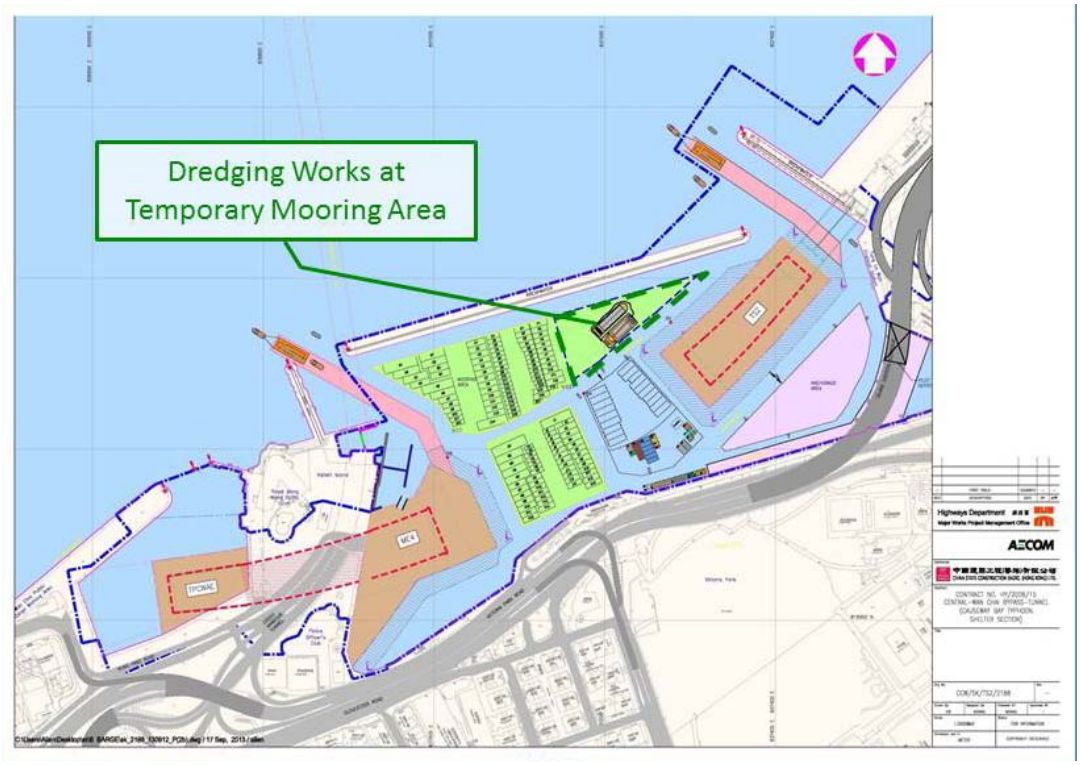
(a) the filling works for seawall construction shall be carried out behind silt curtain(s);
(b) all filling works for temporary reclamation shall be conducted behind the seawalls which shall be completed to a height above the high water mark; and
(c) any seawall gap that need to be provided for marine access shall be surrounded by silt curtain(s)

4.5 The rate of dredging works at CBTS has been strictly governed by the conditions stated in the table 2 of FEP-07/356/2009, i.e. 6,000m^3 per day (i.e. 375m^3 per hour).

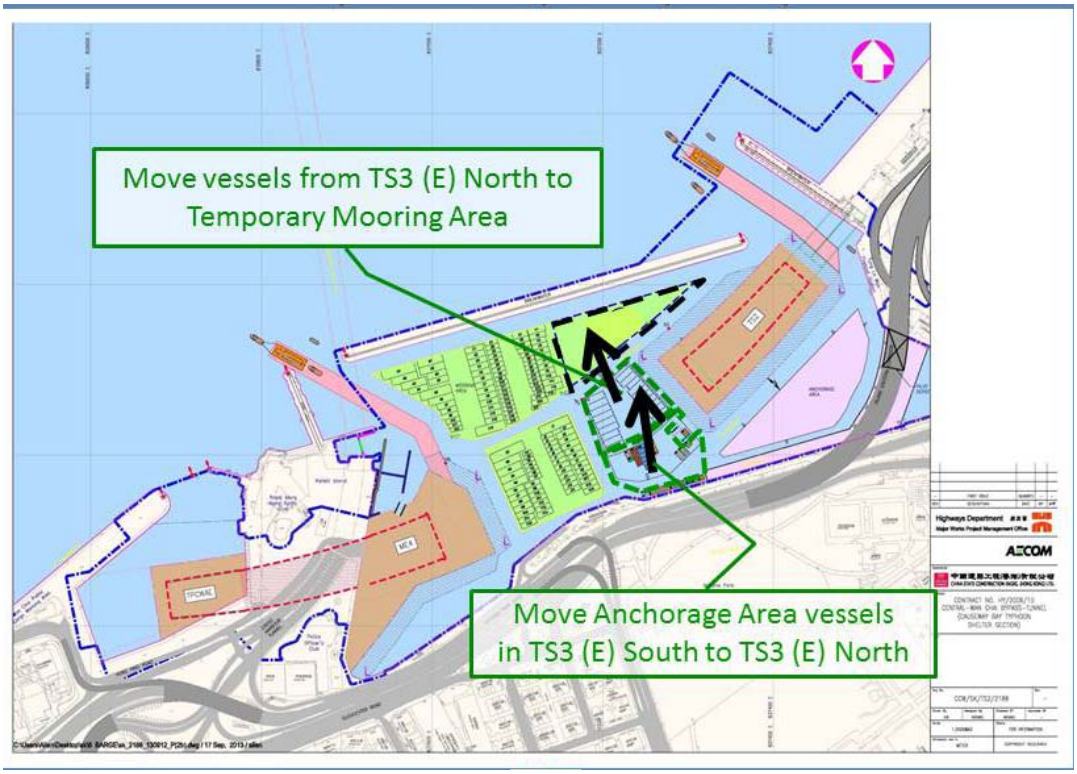
4.6 The existing CBTS is very congested and the marine works area is located in close proximity to the vessels in the anchorage area. Also the marine works area is entirely surrounded by the public navigation channels, installation of silt curtain at the boundary between the works area and navigation channels will induce obstruction to the channel.



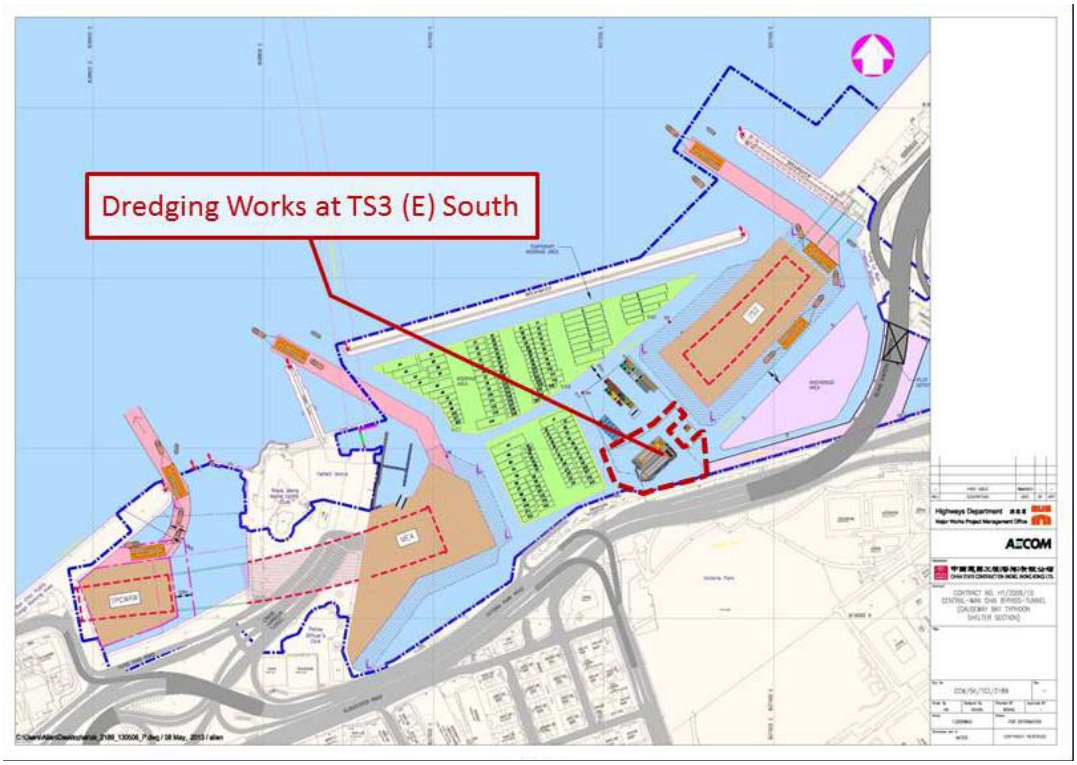
Sequence 01: Feb 2014



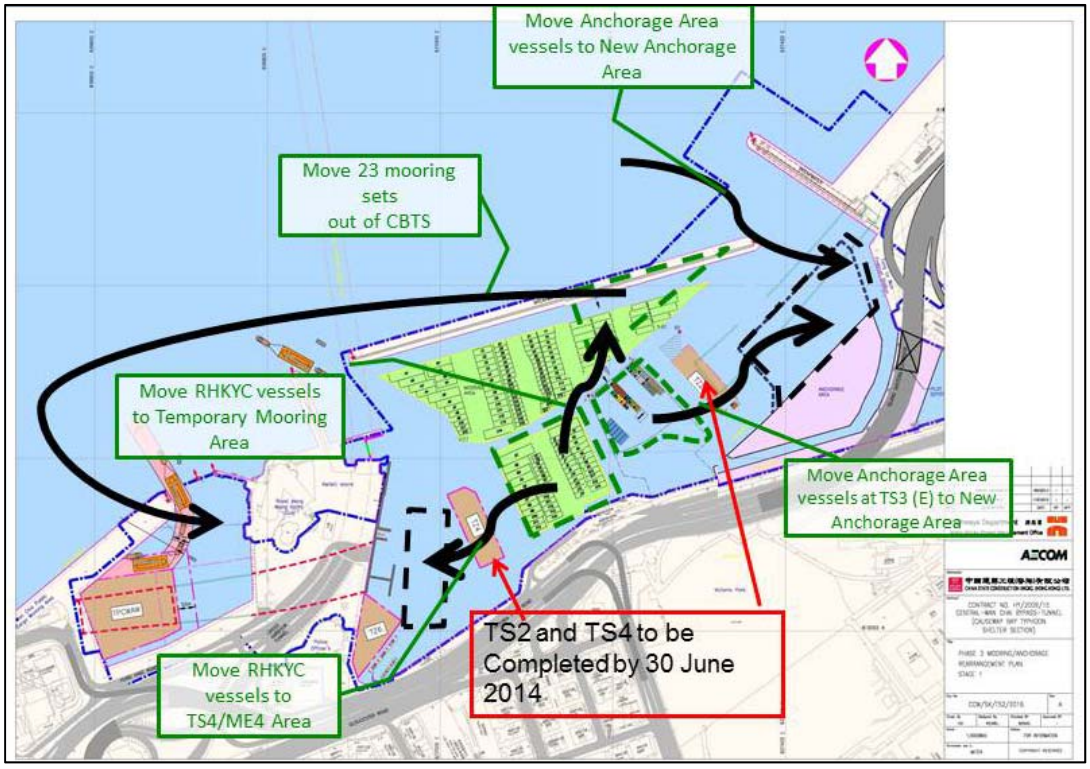
Sequence 02: Feb 2014 to Mar 2014



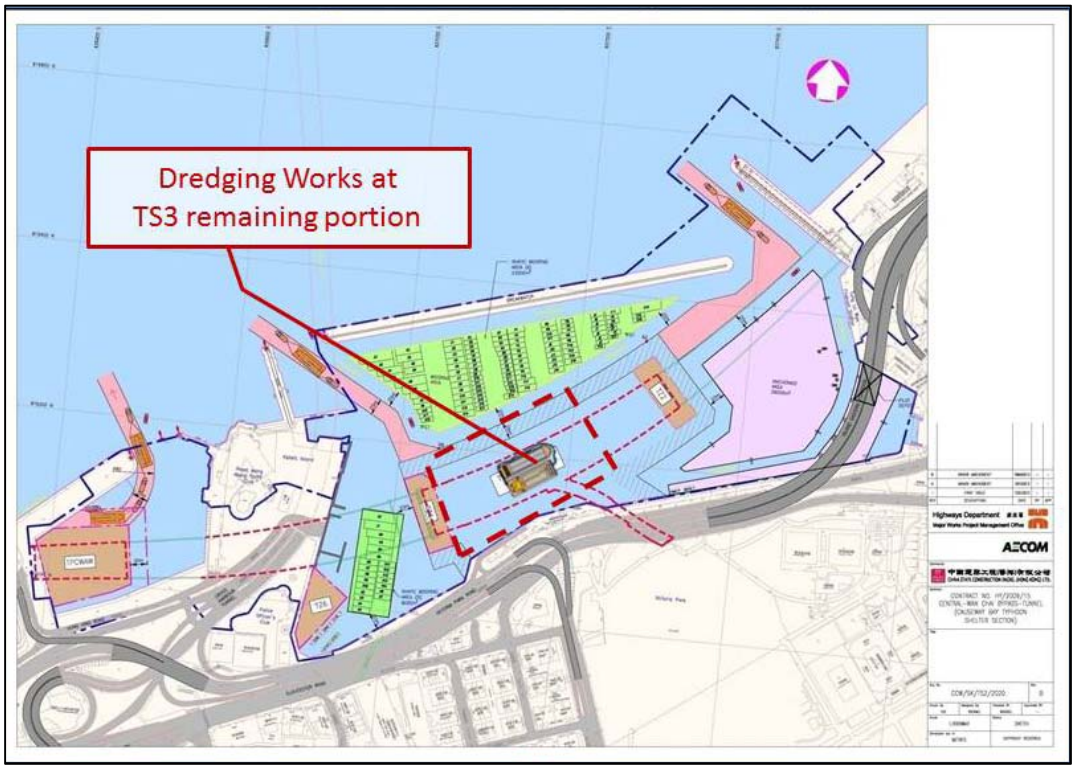
Sequence 03: Apr 2014



Sequence 04: May 2014 to Jun 2014



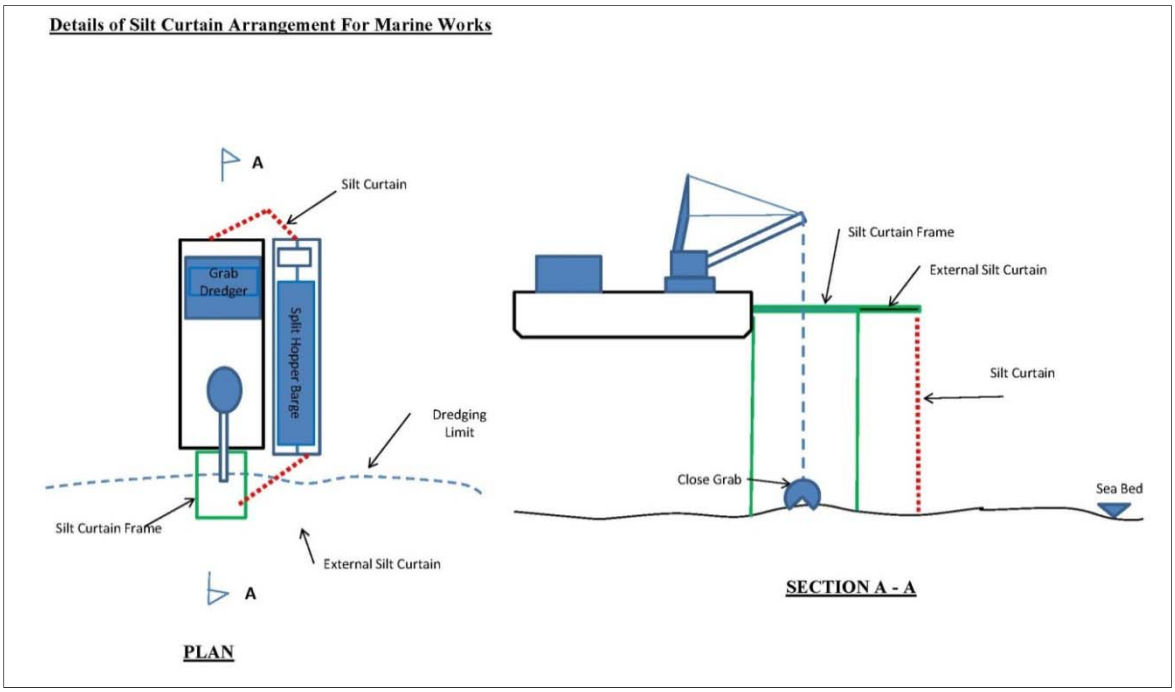
Sequence 05: Jul 2014



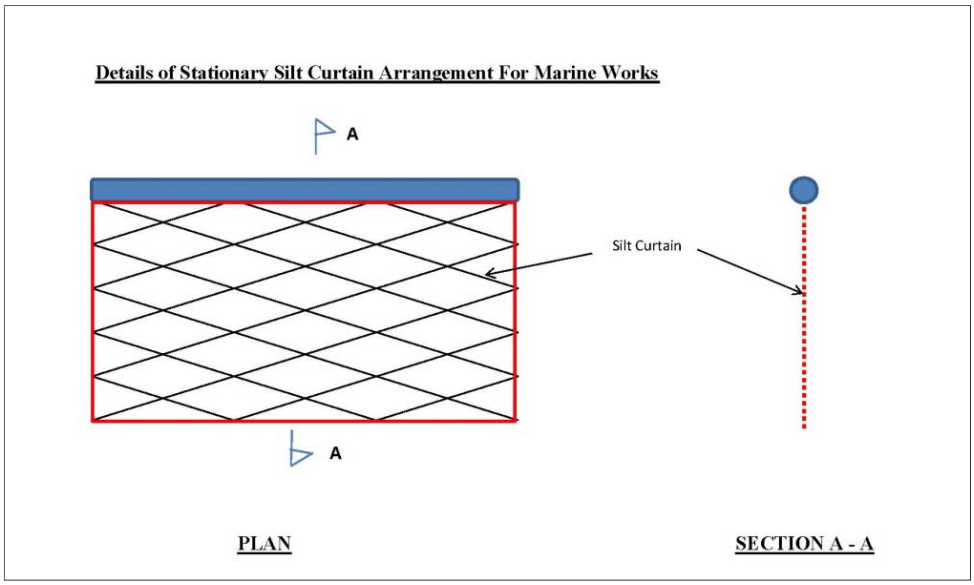
Sequence 06: Aug 2014 to Nov 2014.

5.0 Details of Proposed Silt Curtain System

5.1 Details and Installation of Silt Curtain.



Drawing 1: Details of Hanged Type Silt Curtain Arrangement For Marine Works



Drawing 2: Details of Stationary Type Silt Curtain Arrangement For Marine Works

Both two types of silt curtains (Hanged Type & Stationary Type) will be deployed for the Project Works.

5.2 Taking into account of the key factors mentioned in Section 4 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. CDD/TS3/0035 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 for the nearby intake, proper tidal flushing to circulate the embayed water and navigation safety of vessels can all be ensured during the dredging operation. Extend of the silt curtain would be down to seabed level.

(c) Apart from the silt curtain mentioned in paragraph 5.2 (b), a silt curtain frame mounted on the grab dredger will be constructed with double layer of geotextile materials. The toe of the curtain will be lowered simultaneously with the increase of dredging depth. The migration of sediment plume is under control within silt curtain enclosed area. The entire the water column should be enclosed by the silt curtain.

5.3 Maintenance for Silt Curtain

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

5.3.1 Site supervisors should be responsible to inspect the condition of the silt curtain during the course of marine works.

5.3.2 If any silt curtain is found damaged and repairing works are considered necessary, the respective parts of works at location from the damaged curtain will be temporarily ceased unless the damaged silt curtain have been repaired or replaced by another silt curtain. 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.

5.3.3 Before and during removal of the damaged silt curtain, site supervisor should closely communicate with operators of other marine plant to ensure no dredging works will be carried out in region from the location of silt curtain maintenance. The ceased dredging works will be resumed after the damaged silt curtain is satisfactorily repaired or replaced by another silt curtain.

5.3.4 During regular daily maintenance, refuse or debris around the silt curtain would be collected within site boundary, both inside or outside area enclosed by silt curtain. This is to avoid adverse effect to marine plant as well as to the marine access and the public.

5.3.5 Sufficient stock of spare geotextile materials and other associated components shall be kept for readily repairing/replacement in case of damages.

6.0 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. Silt curtain would be deployed along temporary seawall to protect water quality.

	Anticipated Installation Works	Anticipated Removal Works
TCBR4		
Dredging works for seawall	Nov. 2013	Nov 2014
Temporary Reclamation	May 2014	Jul. 2015
Removal of temporary Reclamation	Aug 2015	Jan 2017

Deployment of silt curtain on site will match the works to be carried out. For details of Works programme please refer to **Appendix B**.

In accordance with the works programme, deployment of silt curtain(s) are separated into different stages. They are:

i) Advance dredging works;
ii) Dredging works & seawall construction (by stages);
iv) Construction of Tunnel works (Stationary silt curtain arrangement & no marine works); &
v) Removal of reclamation area (by stages).

Detailed drawings of deployment of silt curtain by stages are given in **Appendix C**.

7.0 Construction Programme

The updated marine works programme for the project is summarized and enclosed in **Appendix B**.

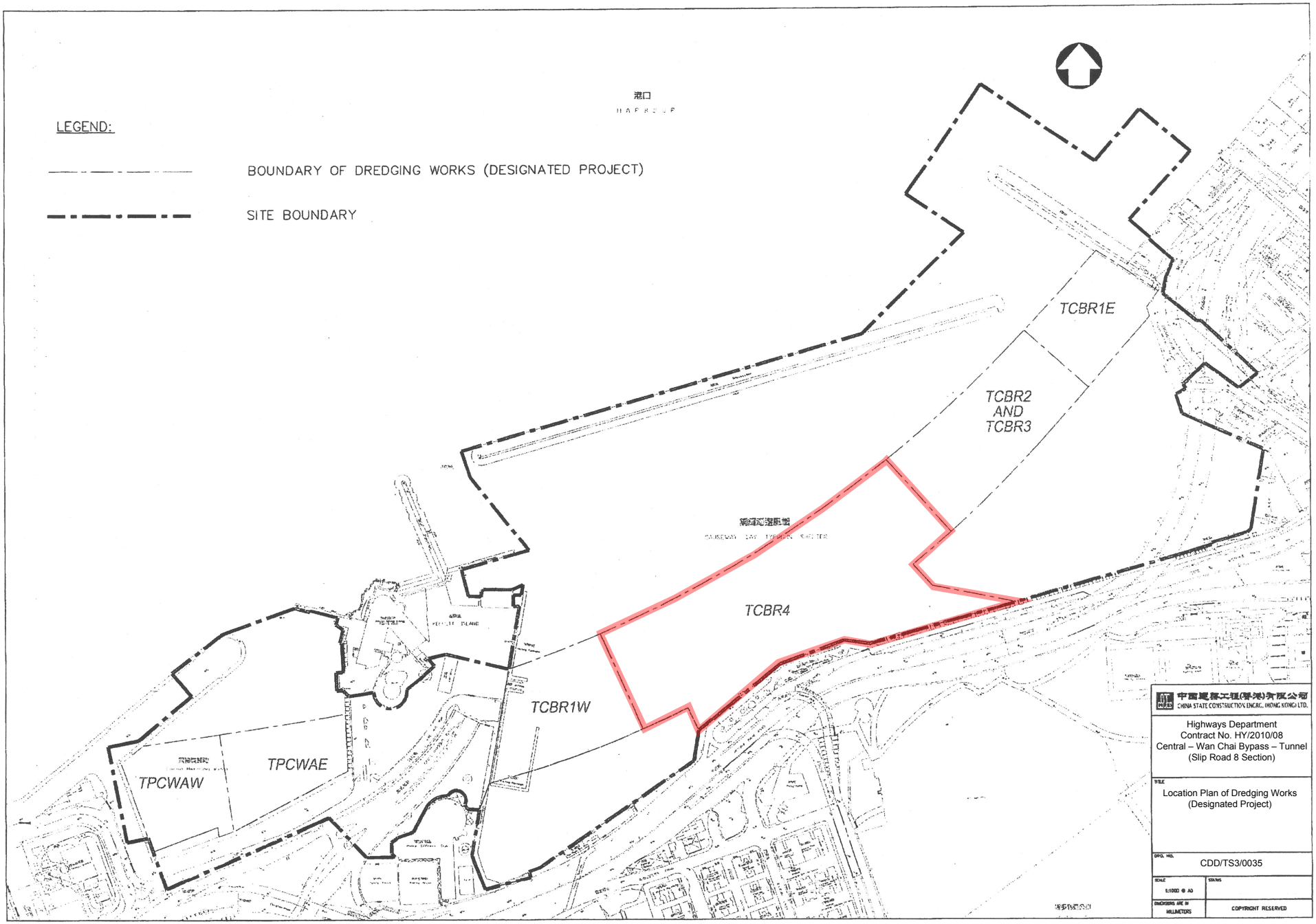
8.0 Technical Details of Silt Curtain

8.1 “Thrace Plastics” WG 105 woven geotextile will be used for all proposed silt curtains and double-layered silt curtain.

8.2 The technical data of the proposed geotextile material is enclosed in **Appendix D**.

Appendix A

Location Plan of Dredging Works


LEGEND:
BOUNDARY OF DREDGING WORKS (DESIGNATED PROJECT)
SITE BOUNDARY
港口
TCBR1E
TCBR2
AND
TCBR3
TCBR4
TCBR1W
TPCWAE
TPCWAW
中国建筑工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.
Highways Department
Contract No. HY/2010/08
Central – Wan Chai Bypass – Tunnel
(Slip Road 8 Section)
Location Plan of Dredging Works
(Designated Project)
CDD/TS3/0035
1:1000 @ A0
DIMENSIONS ARE IN MILLIMETERS
COPYRIGHT RESERVED

Appendix B

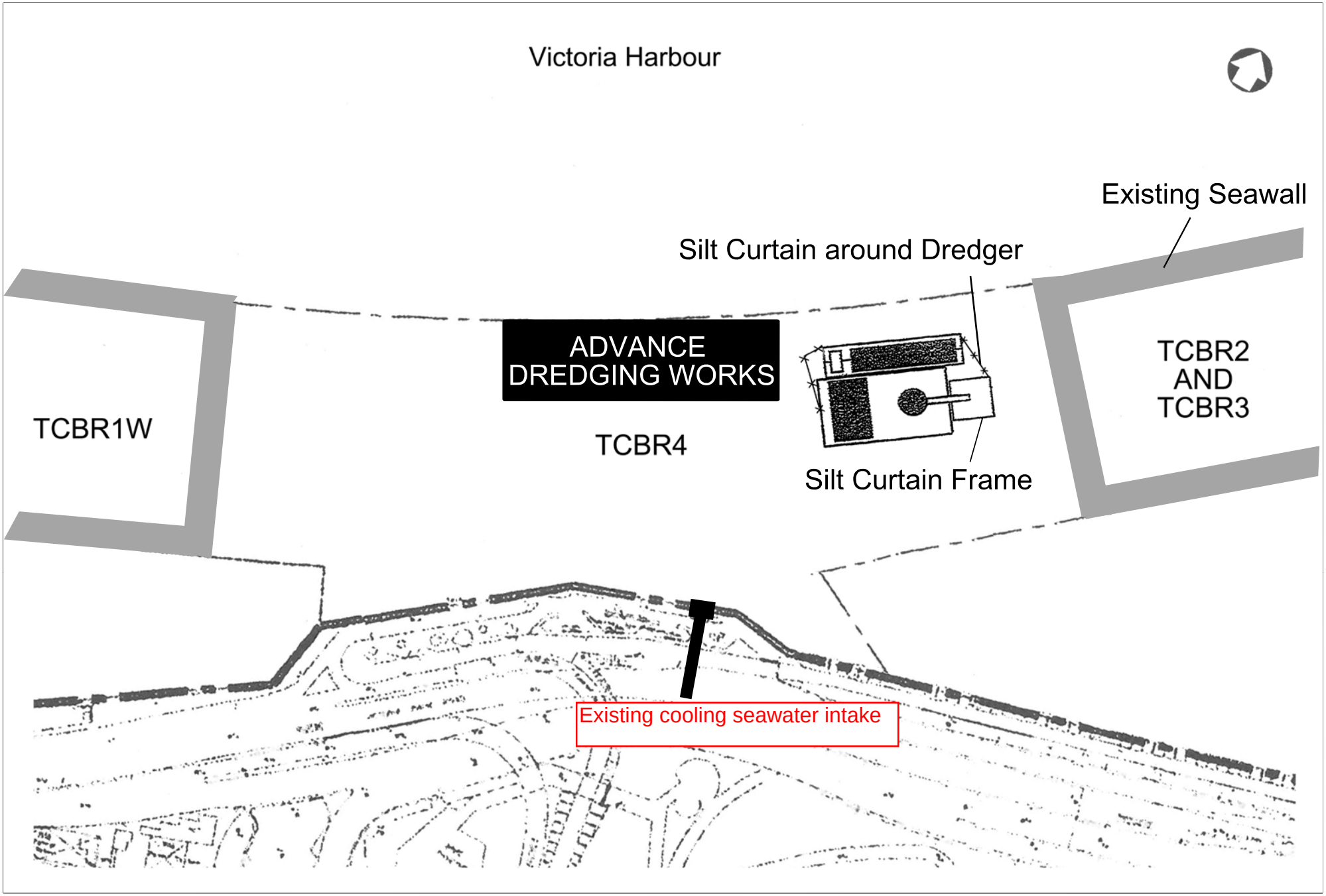
Works Programme

HY/2010/08 Central - Wan Chai Bypass Tunnel (Slip Road 8 Section)
Marine Works Programme

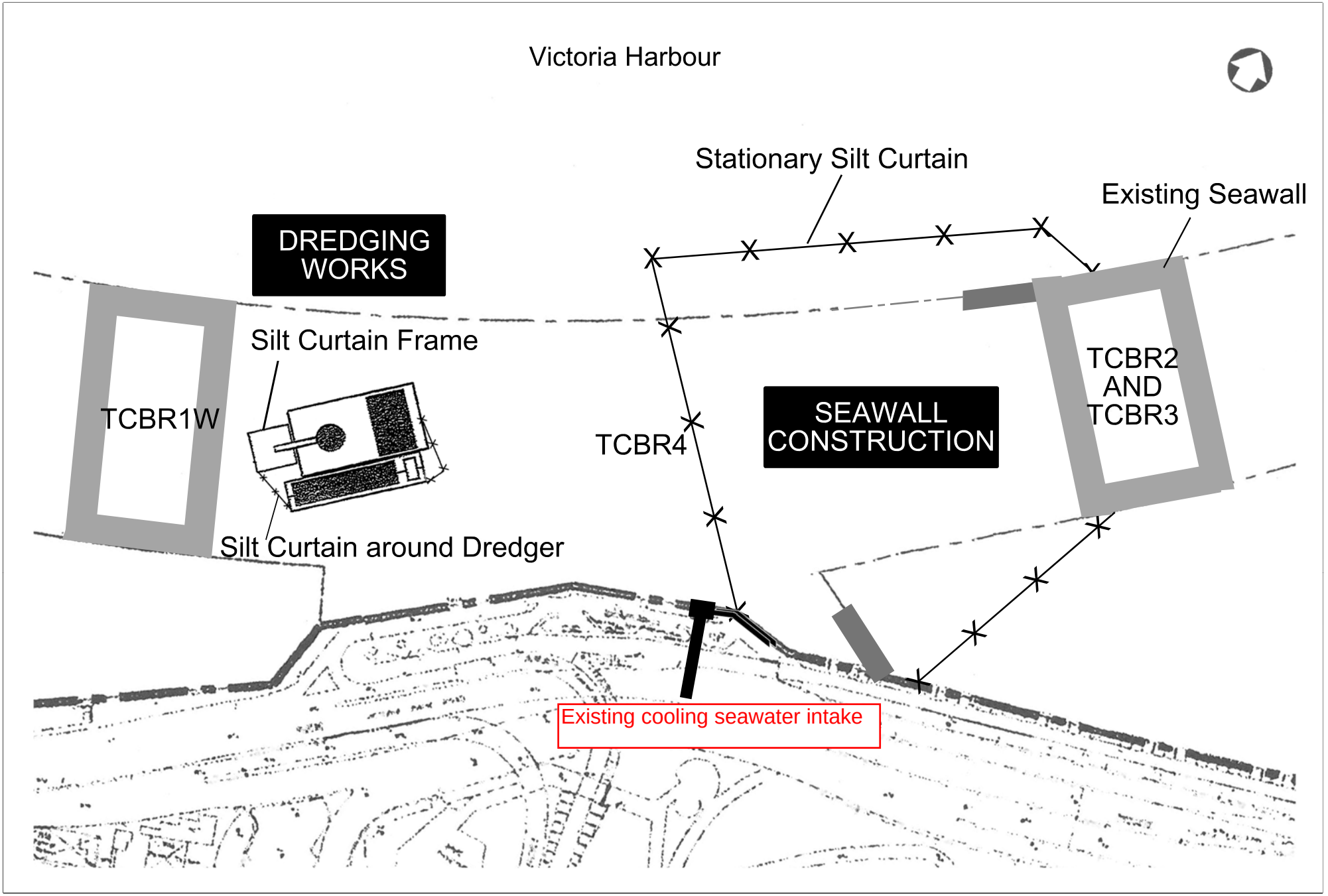
Item	Activity	Duration (day)	Start	Finish		2014				2015				2016				2017			
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Dredging Works	380	15/11/2013	30/11/2014																	
2	Seawall Construction & Filling Works	252	9/5/2014	16/1/2015																	
3	Removal of Reclamation Area	512	25/8/2015	18/1/2017																	

Appendix C

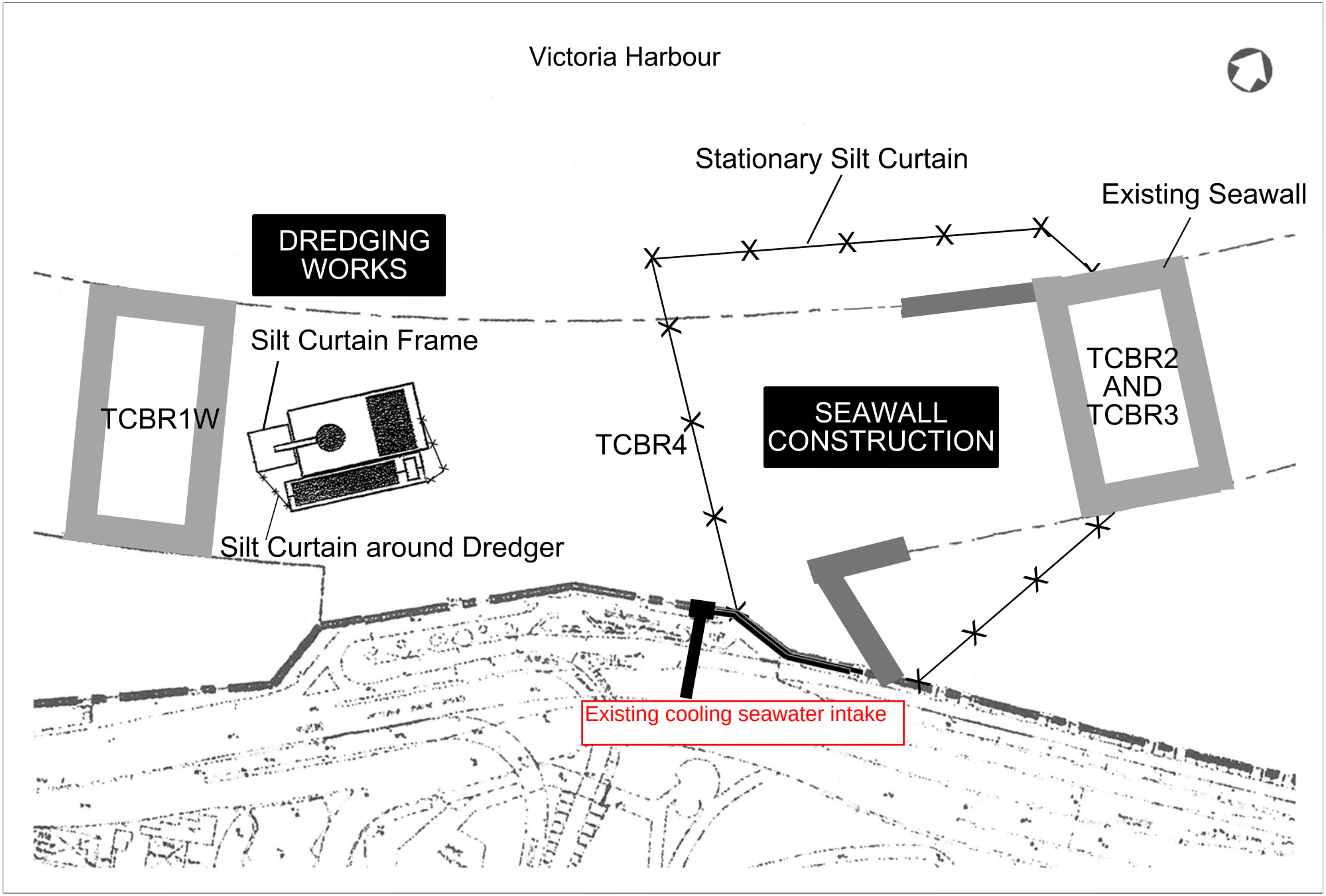
Detailed Drawings of Deployment of Silt Curtain by Stages



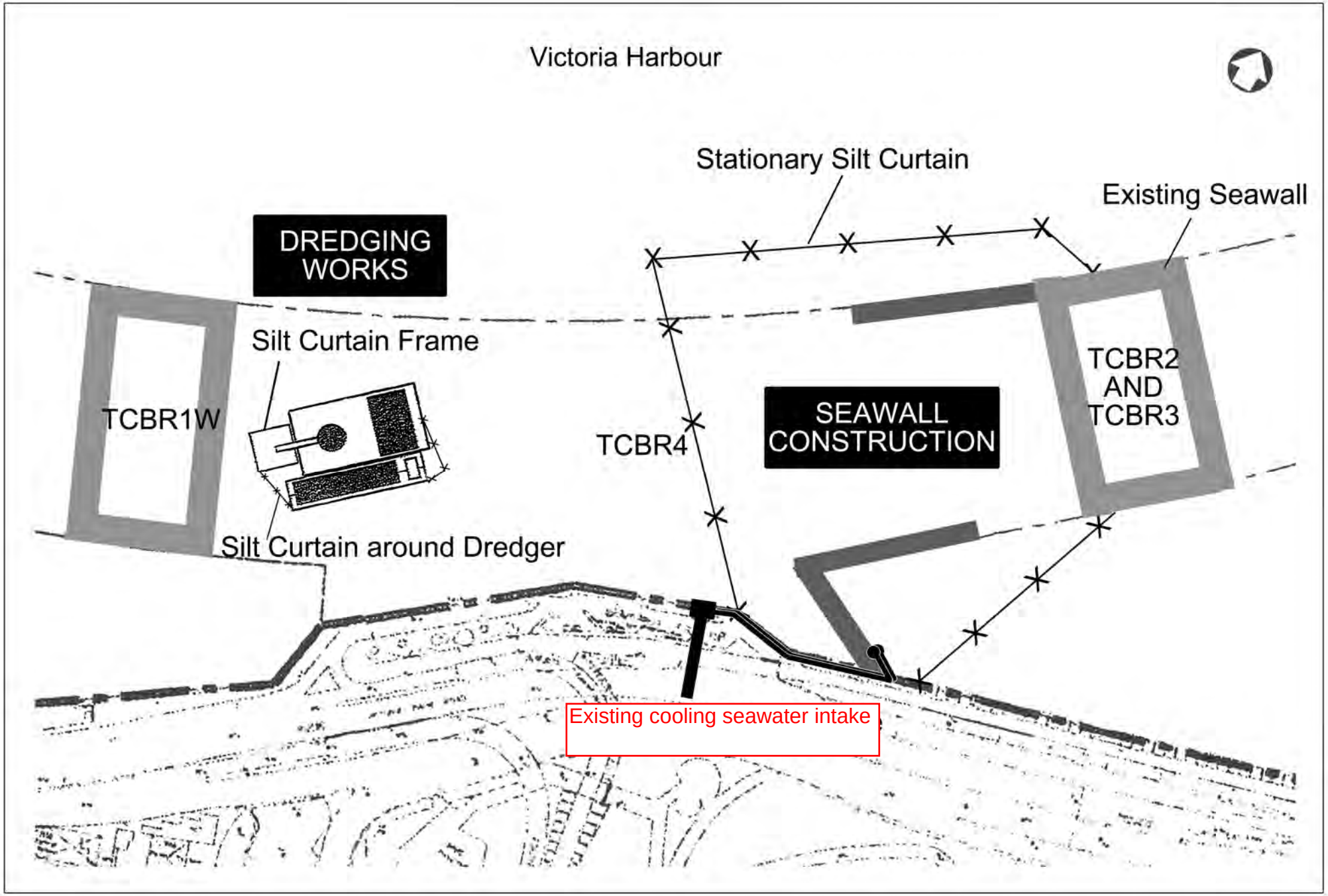
Stage 01 Silt Curtain Arrangement during Advance Dredging Works



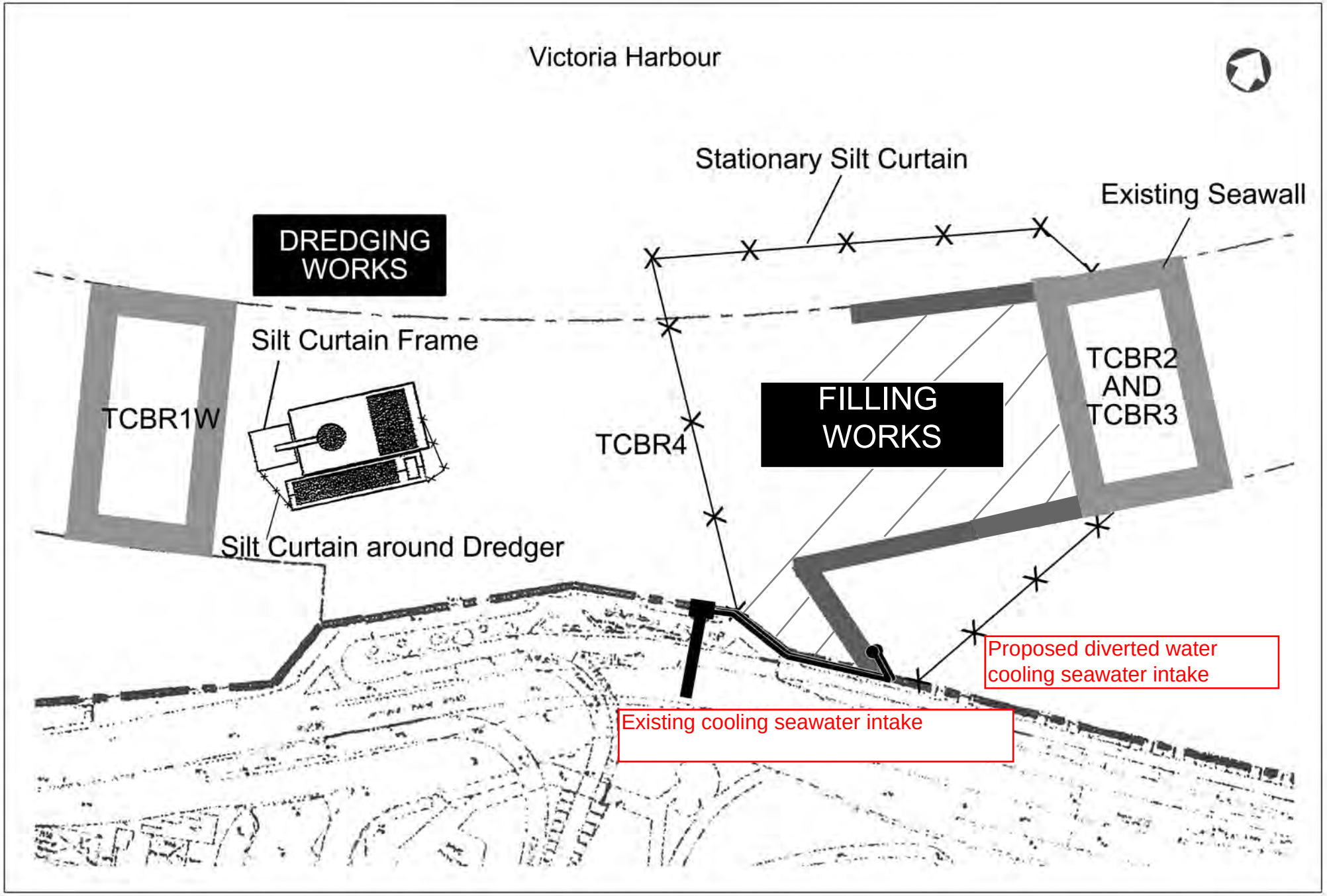
Stage 02 Stationary Silt Curtain Arrangement during Dredging Works and Seawall Construction (1)



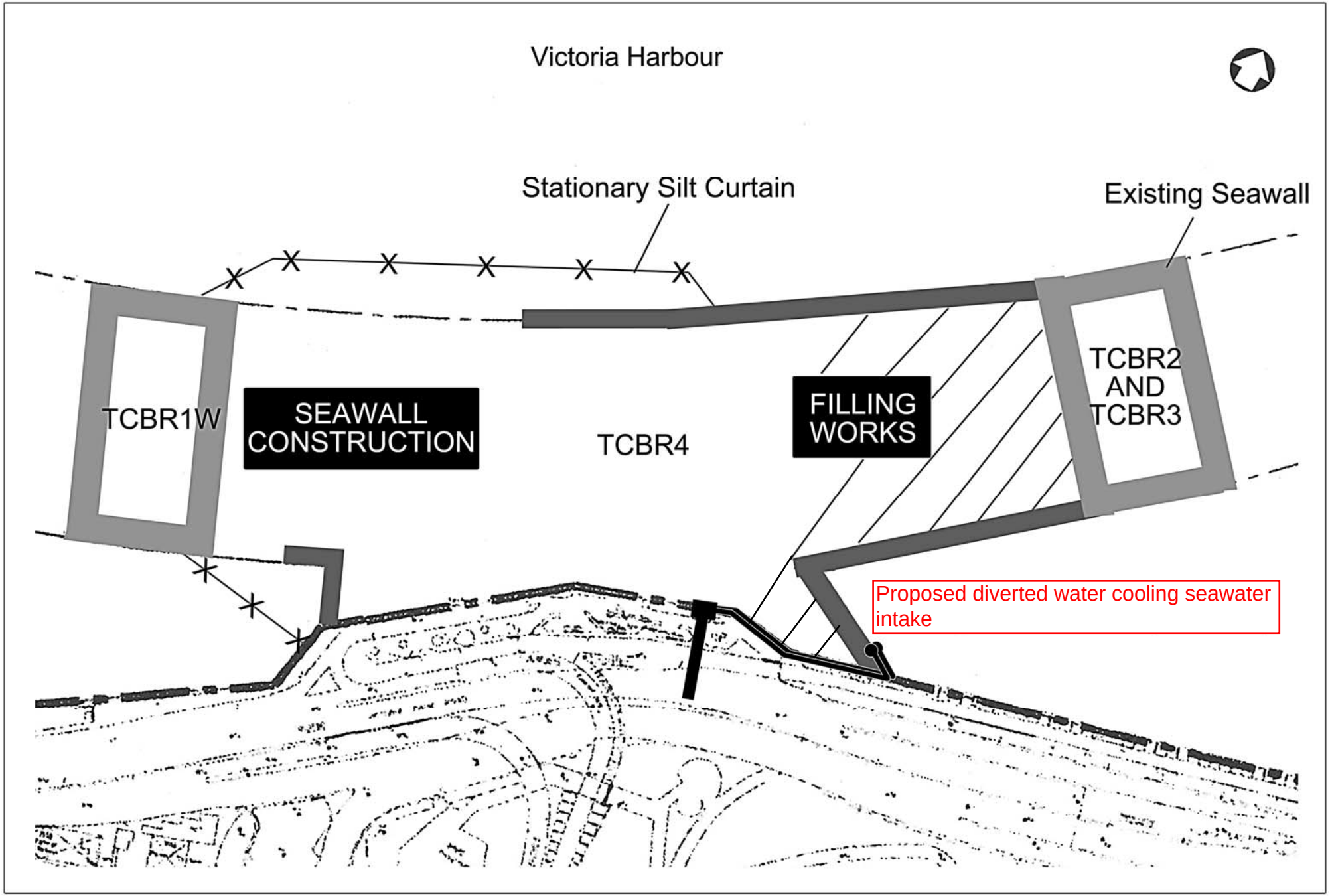
Stage 03 Stationary Silt Curtain Arrangement during Dredging Works and Seawall Construction (2)



Stage 04 Stationary Silt Curtain Arrangement during Dredging Works and Seawall Construction (3)

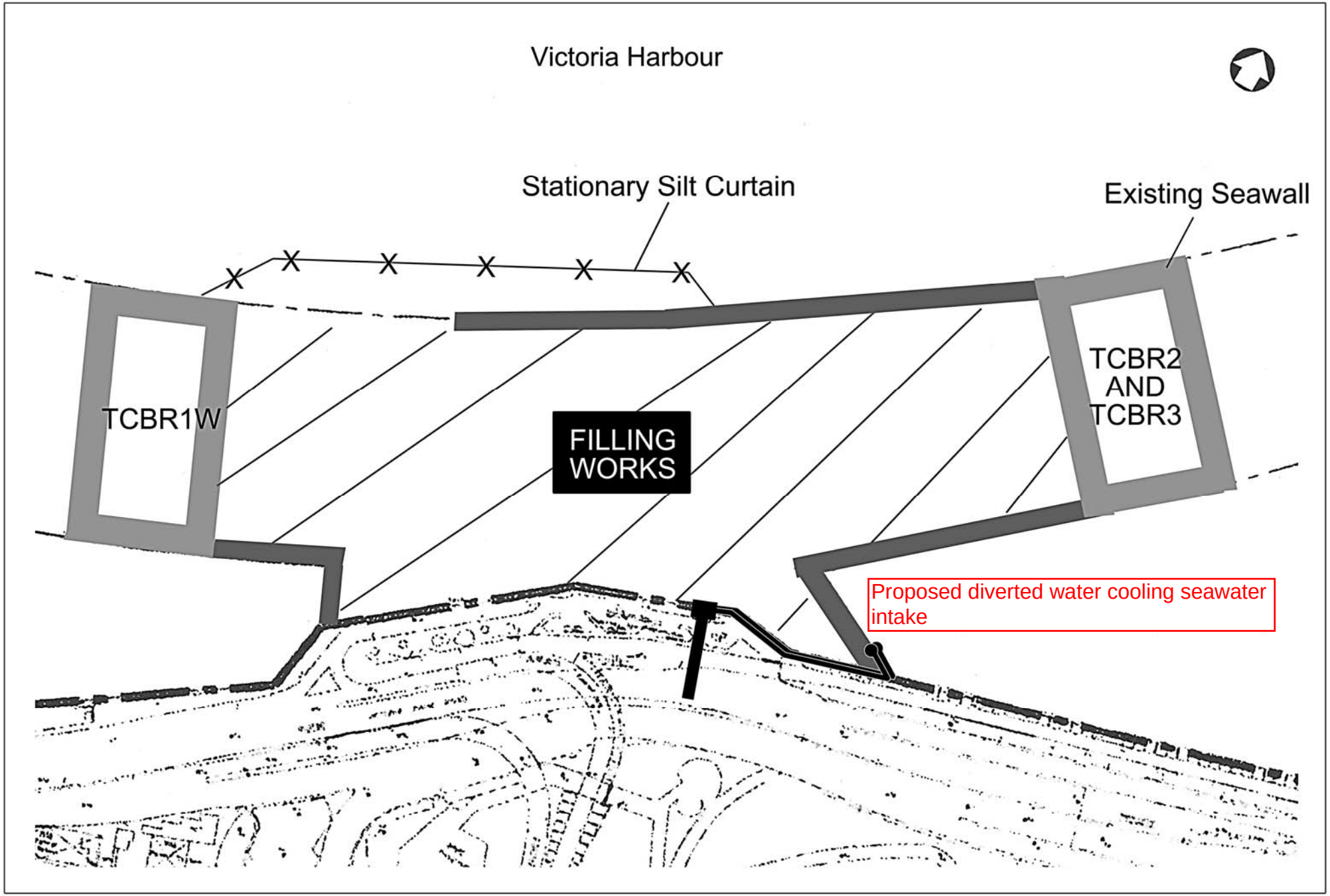


Stage 05 Stationary Silt Curtain Arrangement during Seawall Construction and Filling Works [1]



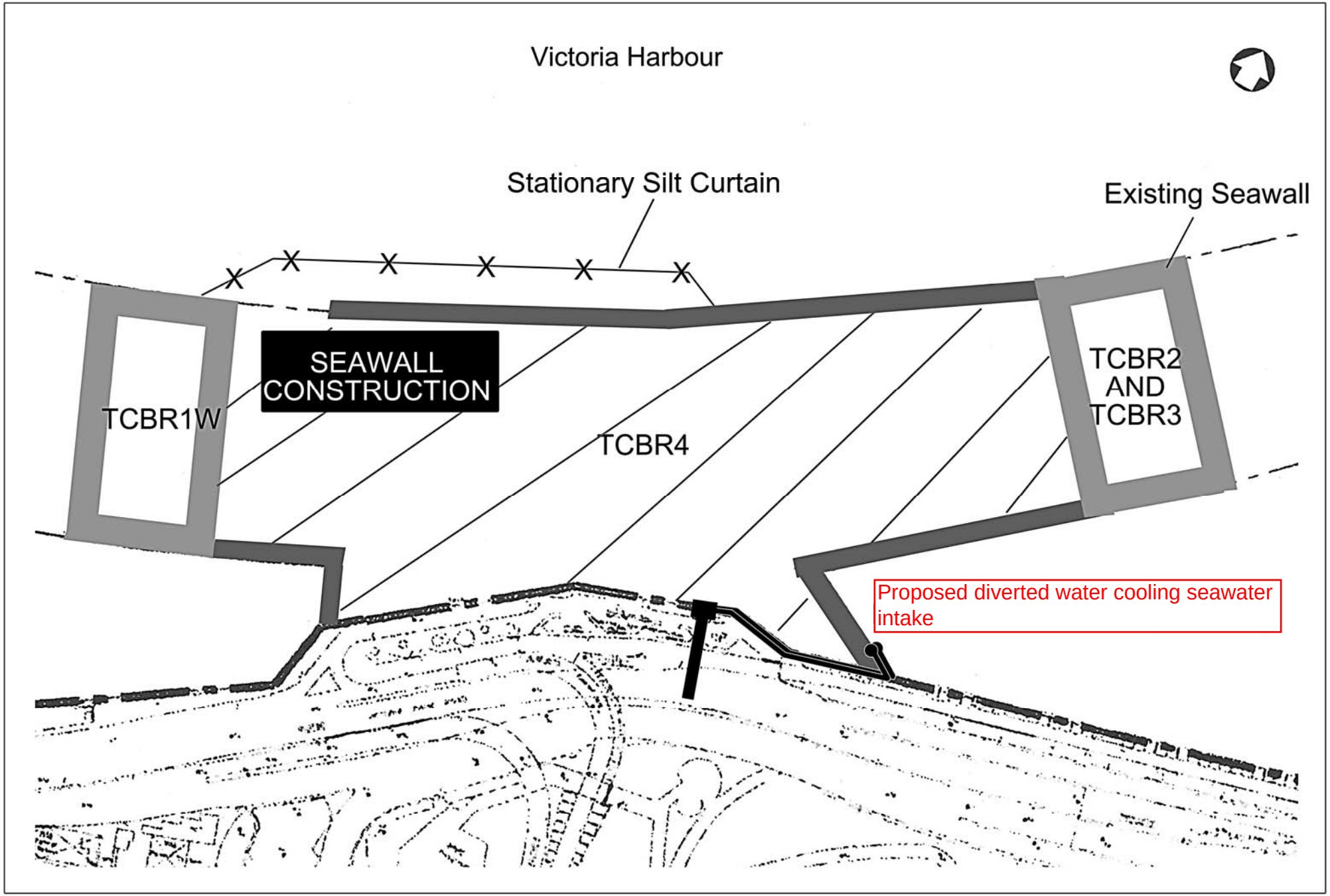
Stage 06

Stationary Silt Curtain Arrangement during Seawall Construction & Filling Works [2]

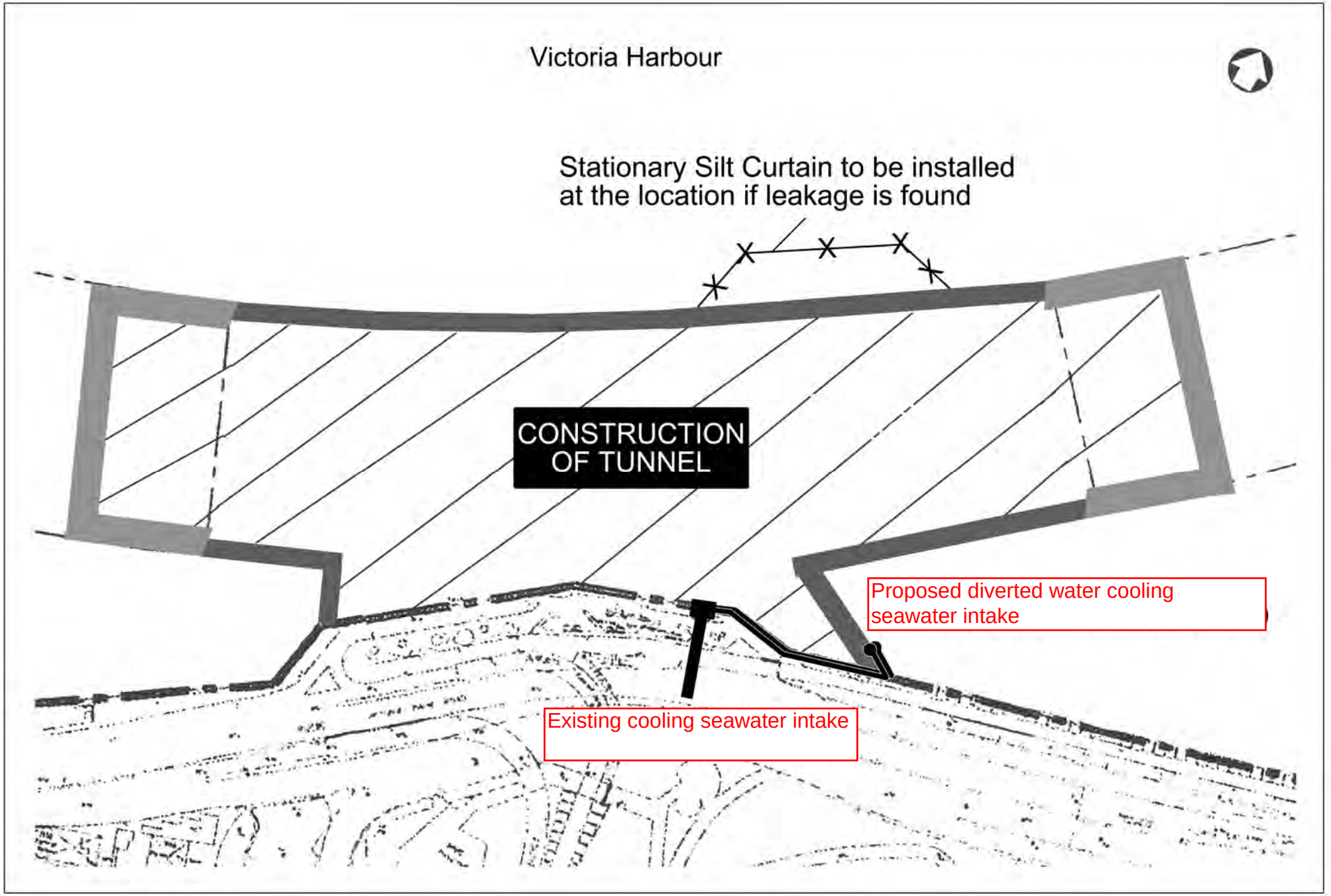


Stage 07

Stationary Silt Curtain Arrangement during Seawall Construction & Filling Works [3]

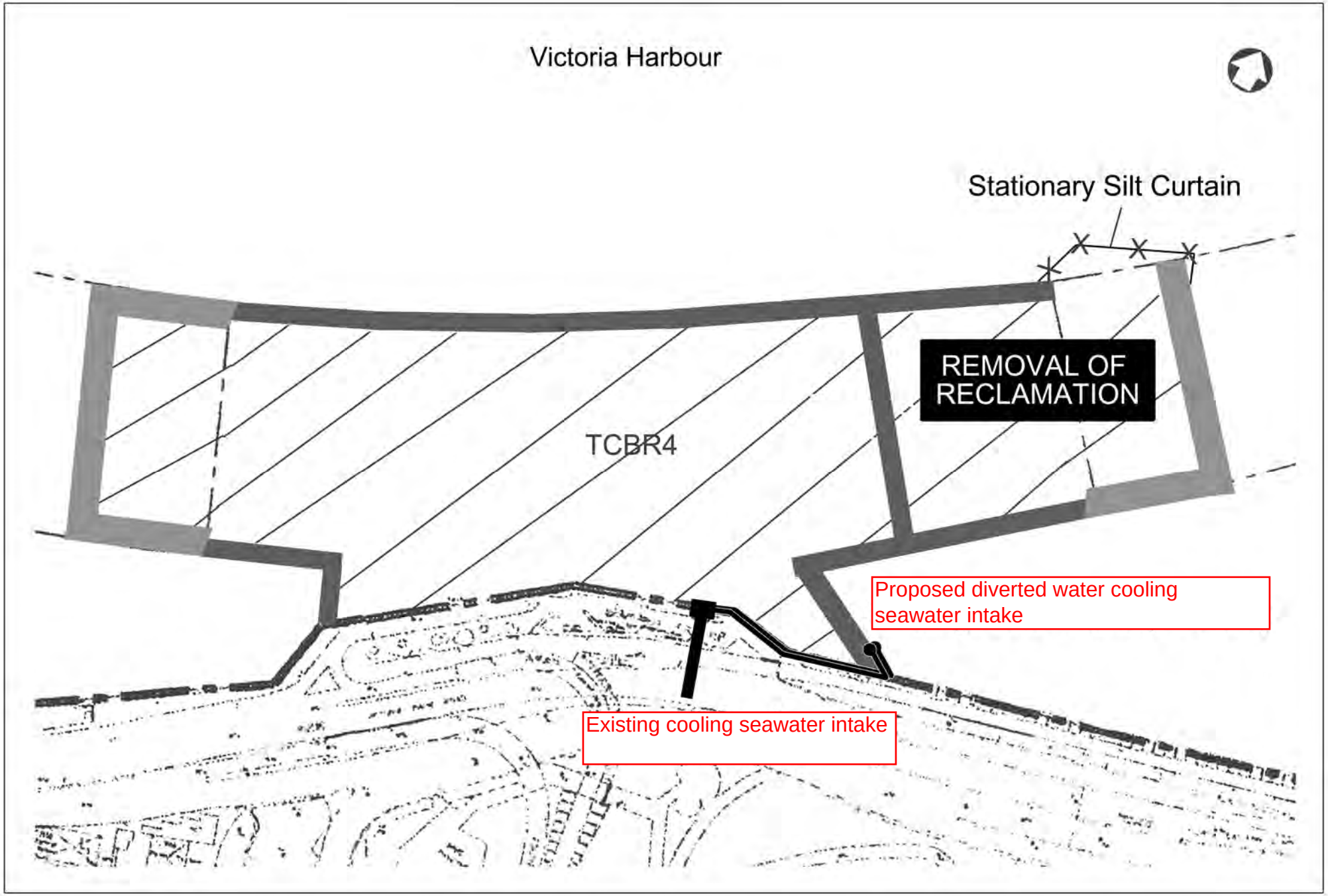


Stage 08 Stationary Silt Curtain Arrangement during Seawall Construction & Filling Works 4



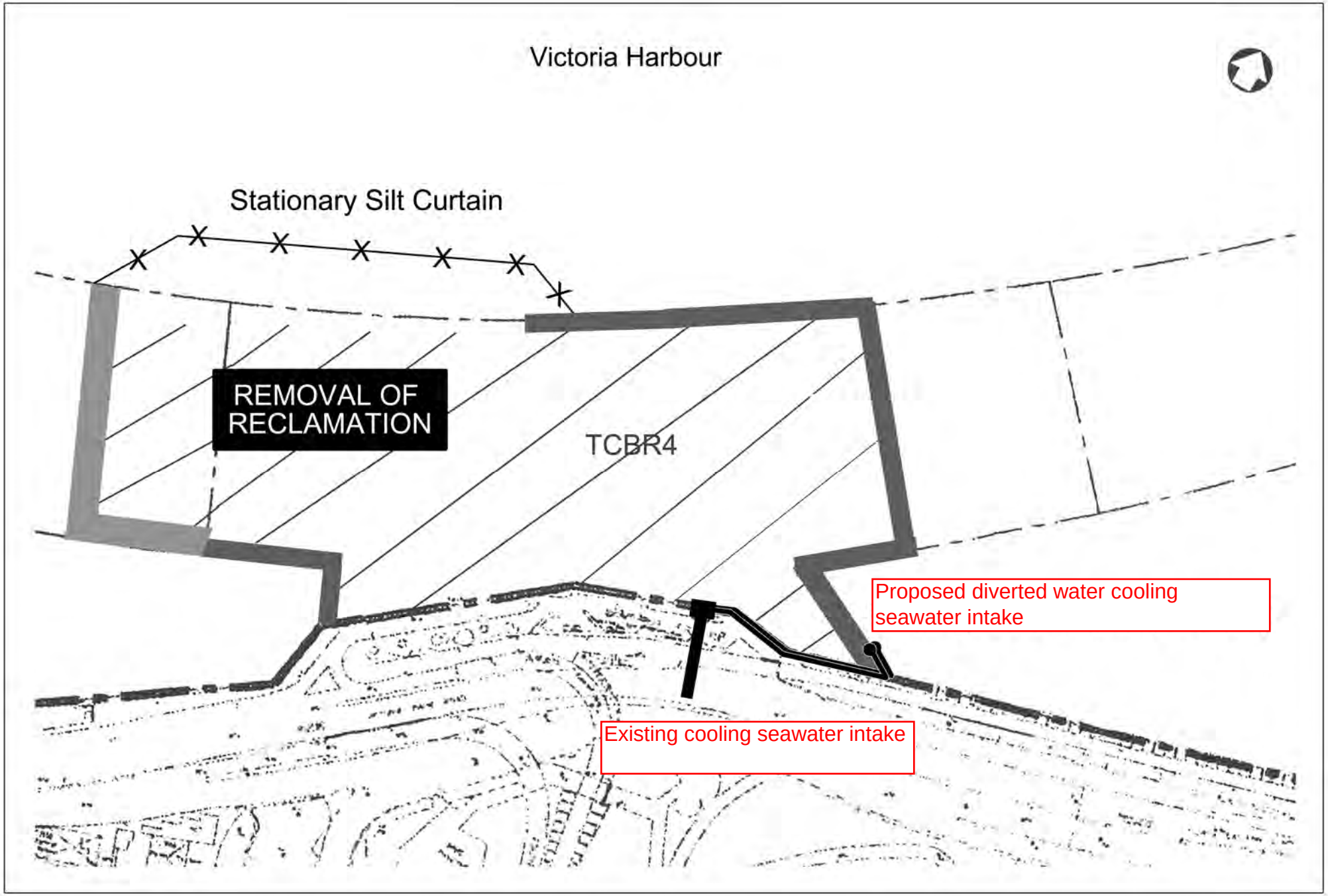
Stage 09

Stationary Silt Curtain Arrangement during Construction of Tunnel



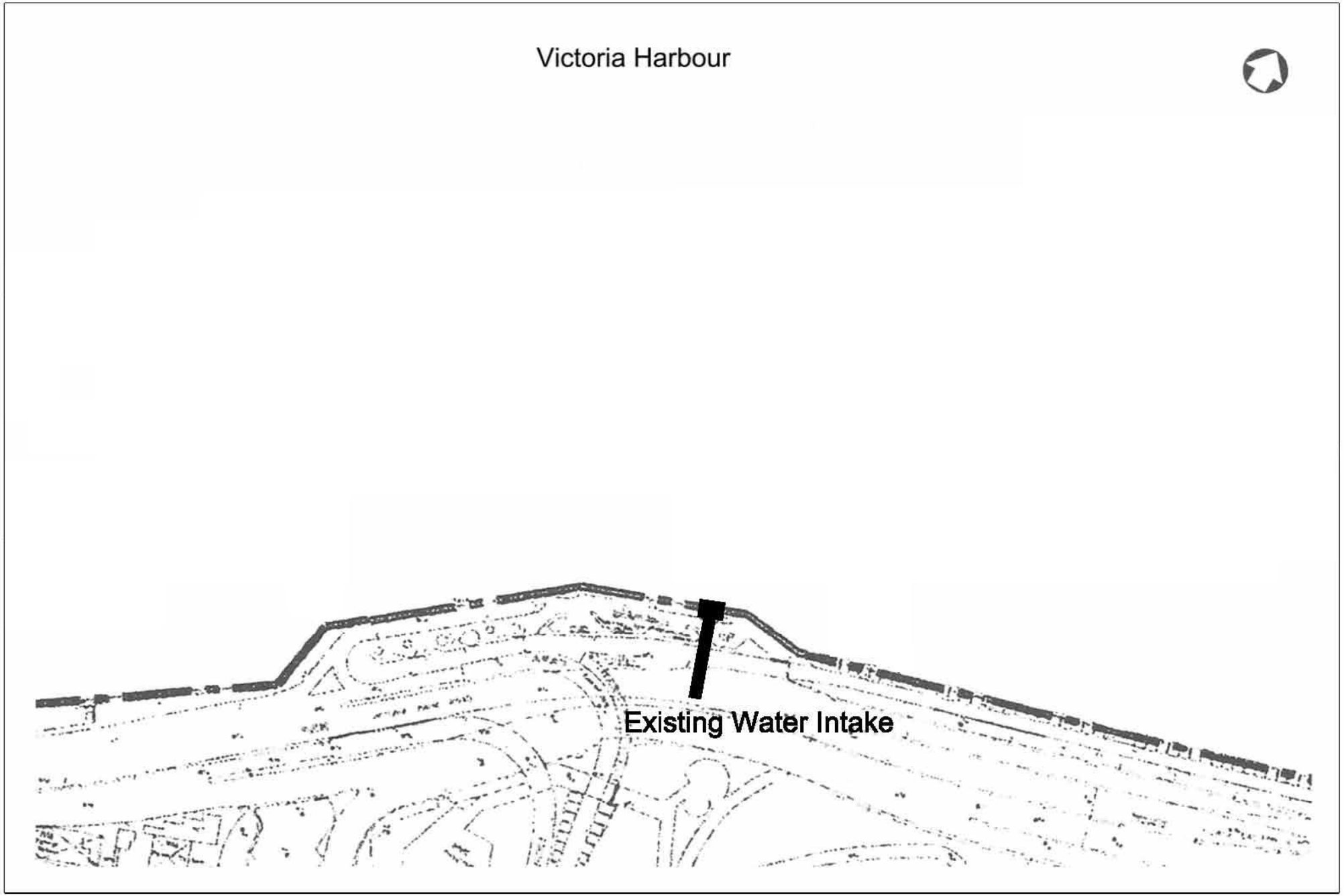
Stage 10

Stationary Silt Curtain Arrangement during Removal of Reclamation Area (1)



Stage 11

Stationary Silt Curtain Arrangement during Removal of Reclamation Area (2)



Stage 12

After Reclamation Works

Appendix D

Technical Details of Silt Curtain

中國建築工程(香港)有限公司 CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.	Contract No. HY/2010/08 Contract Title: Central – Wan Chai Bypass – Tunnel (Slip Road 8 Section)

CONTRACTOR'S SUBMISSION FORM (MATERIAL)

To : The Engineer's Representative
Attn: Mr. Peter Poon

Submission Ref. No:	**CDD/2002/CSF/MTL/TC/001015**	
CSF No:	**000296**	AECOM ref. no. (if applicable) :
Title of Submission:	**Geotextiles for Marine Works**	

Required Information	**Details Provided**
Name of Product or Service	Woven Geotextiles – Silt Curtain for Marine Works
Supplier's Address	Workshop E, 2/F., Effort Industrial Building, 2-8 Kung Yip Street, Kwai Chung, N. T. Hong Kong
Supplier's Name	Million Target Enterprises Ltd
Type of Product or Service	WG105
Applicable Specification Clause	
Applicable Standard	
Test / Backup Data Provided	As per attached
Previous History of Used	As per attached
Proposed Location of use	Silt curtain and Marine works
Proposed Duration for use	Whole Contract Period
Health and Safety Information provided	N/A
BD reference No.	N/A
FSD reference No.	N/A

Remarks :

The information, technical data sheet and sample of the proposed material are attached.

Purpose of Submission:

☑ **For Approval** ☐**For Information** ☐**For Record Purposes**

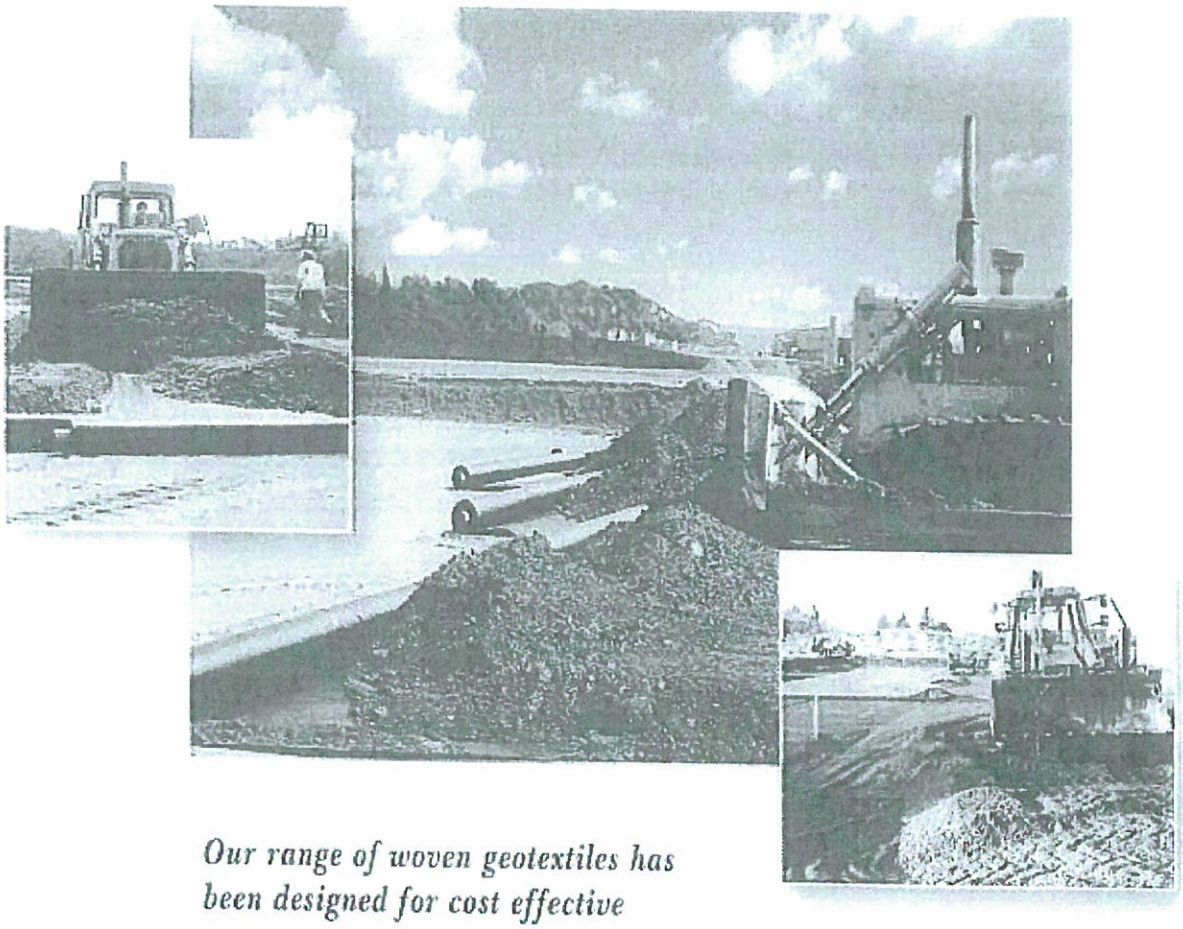
Date of Required Response : 15/9/2013	**Total Page : 1 + 6**

From: **Site Agent**
Name: **Dr. Dave Chan**
Signature: Dave
Date: **23 August 2013**

Prepared by: DC/SML/CPY/ysk
c.c.:MasterFile/QA/originator

Technical Fabrics

WOVEN Geotextiles



Our range of woven geotextiles has been designed for cost effective

- *Reinforcement*
- *Separation*
- *Filtration*

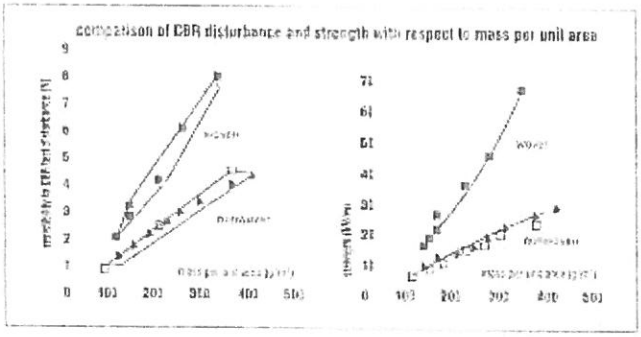
With over 25 years of experience Thrace Plastics continues to demonstrate its ability to extend project life and reduce construction cost.

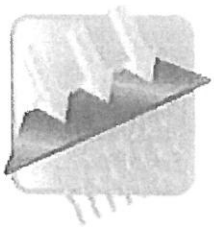
Thrace Plastics

Million Forget Enterprises Ltd T/A
MANDAS ENTERPRISES
明 達 企 業
Workshop E, 2/F., Effort Industrial Building, 2-8 Kung Yip Street, Kwai Chung, N.T., Hong Kong
Tel. +852 2301 1693 Fax. +852 2398 3495 E-mail. info @mandas.com.hk Website. www.mandas.com.hk

WOVEN Geotextiles

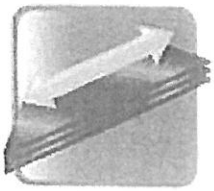
TECHNICAL FABRICS





Separation

Using Thrace woven geotextiles that provide strength, puncture resistance and the proper elongation properties separating layers in construction works can be achieved properly. Preventing the intermixing of two layers of soil is a common requirement in road works and railway constructions.

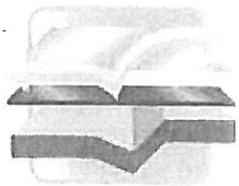


Reinforcement

The mechanical properties of Thrace woven geotextiles when installed under or in-between soil layers, help improve the soil layers mechanical properties by absorbing the tensile forces and reducing deformation. High strength & low elongation are ideal for reinforcing embankments of roads, slops, retaining walls.

Filtration

Thrace woven geotextiles creates a bridging zone and its pore size helps retain soil particles allowing movement of water , making it possible to maintain water flow while avoiding clogging.



Erosion Control

Using Thrace woven geotextiles helps prevent soil particles from washing away from slopes and shoreline. Geotubes and Thrace silt fence are both additional products made from Thrace woven geotextiles to prevent erosion control.

Million Target Enterprises Ltd. t/a
MANDAS ENTERPRISES
明 達 企 業
Workshop E, 2/F., Effort Industrial Building, 2-8 Kung Yip Street, Kwai Chung, N.T., Hong Kong
Tel. +852 2301 1693 Fax. +852 2398 3495 E-mail. info @mandas.com.hk Website. www.mandas.com.hk

Thrace
Nonwovens & Geosynthetics

High Strength Woven Geotextiles

WG series – Technical table (Metric values)


F=Filtration


S=Separation


D=Drainage


R=Reinforcement


Erosion Control

THRACE NWs&GEOs S.A. WG technical fabrics are polypropylene, UV stabilized, high strength, black woven geotextile, used for many civil engineering and building applications. It is manufactured at one of THRACE NWs&GEOs S.A. facilities that have achieved **ISO 9001:2008** certification for its systematic approach to quality. They are also resistant to chemicals and biological agents. WG geotextiles conform to the property values listed below. All technical data are based on statistical analysis from internal and external laboratory results.

PROPERTY	METHOD	UNIT	WG14	WG16	WG18	WG22	WG25	WG30	WG32	WG40	WG42	WG48	WG55	WG60	WG65	WG80	WG85	WG105
Tensile Strength (MD/CD)	EN 10319	kN/m	22/14	22/16	22/18	22/22	25/25	30/30	32/32	40/40	42/42	48/48	55/55	65/60	65/65	85/75	85/85	105/105
Elongation (MD/CD)	EN 10319	%	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12	15/12
Resistance to static puncture	EN ISO 12236	N	2300	2400	2500	3150	3400	3800	4000	5000	5600	6500	7000	7500	8500	10000	11000	13000
Dynamic Perforation resistance	EN 13433	mm	17	17	17	14	12	10	9	8	8	6	5	5	5	3	3	3
Characteristic Opening Size (O_{90})	EN ISO 12956	µm	250	250	250	250	250	230	230	200	200	200	180	180	225	225	200	175
Water Permeability normal to the plane (V_{H50})	EN ISO 11058	$m/s*10^{-3}$	15	7	7	10	10	10	10	7	15	15	10	10	9	9	9	7
Water Flow Rate (dh =50mm)	EN ISO 11058	l/m^2s	15	7	7	10	10	10	10	7	15	15	10	10	9	9	9	7
Mass/Unit Area	EN 9864	g/m^2	95	95	100	120	120	150	160	190	200	220	260	270	290	350	360	430
Thickness	EN 9863-1	mm	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.1	1.1	1.2	1.2	1.3	
UV Resistance	EN 12224	%retained @500hr	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Roll Width / Roll Length	Measured	m	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.3/100	5.2/100	5.2/100	5.2/100	5.2/100
Roll Area	Calculated	m^2	530	530	530	530	530	530	530	530	530	530	530	530	520	520	520	520

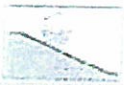
Applications and intended uses of High Strength Woven Geotextiles


EN 13249
F
R
F+S
R+S
F+R
F+R+S

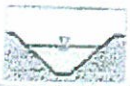

EN 13250
F
R
F+S
R+S
F+R
F+R+S


EN 13251
F
R
F+S
R+S
F+R
F+R+S


EN 13252
F
D
F+S
F+D
F+S+D


EN 13253
F
R
F+S
R+S
F+R
F+R+S


EN 13254
F
R
F+S
R+S
F+R
F+R+S


EN 13255
F
R
F+S
R+S
F+R
F+R+S


EN 13256


EN 13257
F
R
F+S
R+S
F+R
F+R+S


EN 13265
F
R
F+R

NOTES:

1. All the above figures are averages values obtained from testing to current EN standard in our laboratory and at external institutes.
2. THRACE NWs&GEOs S.A. Technical Fabrics reserve the right to alter product specifications at any time without prior notice. It is the responsibility of all users to satisfy themselves that the above data are current.
3. Polypropylene is the constituent polymer used in the production of the WG geotextiles series.
4. To be covered within one month after installation. All the above geotextiles are predicted to be durable for more than 50 years in soil temperatures >25°C and are resistant to highly acid and alkaline environments on the basis of a durability assessment. All of them have been satisfactorily assessed for resistance to oxidation (ENV ISO 13438), microbiological degradation (ENV 12225) and chemical ageing (ENV ISO 12960-Method A: inorganic acid and Method B: organic base).

The information contained herein is furnished without charge or obligation and the recipient assumes all the responsibility for its use. Because conditions for use and handling may vary and are beyond our control, we make no representation about, and are no responsible or liable for, the accuracy or reliability of said information or performance of any product. Any specification, properties or applications listed herein are provided as information only in no way modify, amend, enlarge or create any warranty. Nothing contained herein is to be construed as permission or as any recommendation to infringe any patent.

CE

TÜV AUSTRIA HELLAS
ISO 9001:2008
Reg.No: 01010018

Certificate No: 338-CPD-382

Million Target Enterprises Ltd T/A
MANDAS ENTERPRISES
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Tel. +852 2301 1693 Fax. +852 2398 3495 E-mail: info @mandas.com.hk

Thrace
Nonwovens & Geosynthetics

CE

Certificate No: 0338-CPD-392

Product Data Sheet
WG105

WG105 technical fabric is a polypropylene, UV stabilized, high strength, black woven geotextile, used for many civil engineering and building applications. It is manufactured at one of THRACE NWs&GEOs S.A. facilities that have achieved **ISO 9001:2008** certification for its systematic approach to quality. It is also resistant to many chemicals and biological agents. **WG105** conforms to the property values listed below. All technical data are based on statistical analysis from internal and external laboratory results.

PROPERTY	TEST METHOD	VALUE	METRIC VALUES		TOLERANCE
MECHANICAL					
Tensile Strength (MD/CD)	EN 10319	Average	kN/m	105/105	-5.0/-5.0
Elongation (MD/CD)	EN 10319	Average	%	20/15	±4/±3
Resistance to static puncture	EN ISO 12236	Average	N	12000	-1000
Dynamic Perforation resistance	EN 13433	Average	mm	3	+1
HYDRAULIC					
Characteristic Opening Size (O_{90})	EN ISO 12956	Average	µm	175	±50
Water permeability VI_{H50}	EN ISO 11058	Average	$m/sec*10^{-3}$	9	-3
Water flow rate	EN ISO 11058	Average	l/m^2*s	9	-3
PHYSICAL					
Mass/Unit Area	EN 9864	Average	gr/m^2	480	±20
Thickness (2kPa)	EN 9863-1	Average	mm	1.4	±0.1
ENDURANCE					
Weathering Resistance (MD/CD)	EN 12224	Average	%retained @500hr	90	±10
STANDARD PACKAGING					
Roll Width	Measured	Typical	m	5.2	-0.01
Roll Length	Measured	Typical	m	100	-2
Roll Area	Calculated	Typical	m^2	520	-0.02


F=Filtration


S=Separation


D=Drainage


R=Reinforcement


Erosion Control

Applications and Intended uses of High Strength Woven Geotextiles

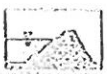

EN 13249
F,R
F+S
R+S
F+R
F+R+S


EN 13250
F,R
F+S
R+S
F+R
F+R+S


EN 13251
F,R
F+S
R+S
F+R
F+R+S


EN 13252
F,R
F+S
F+D
F+S+D


EN 13253
F,R
F+S
R+S
F+R
F+R+S


EN 13254
F,R
F+S
R+S
F+R
F+R+S


EN 13255
F,R
F+S
R+S
F+R
F+R+S


EN 13256


EN 13257
F,R
F+S
R+S
F+R
F+R+S


EN 13265
F,R
F+R

NOTES:

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4. To be covered within one month after installation. All the above geotextiles are predicted to be durable for more than 50 years in soil temperatures >25°C and are resistant to highly acid and alkaline environments on the basis of a durability assessment. All of them have been satisfactorily assessed for resistance to oxidation (ENV ISO 13438), microbiological degradation (ENV 12225) and chemical ageing (ENV ISO 12960-Method A: inorganic acid and Method B: organic base).

TÜV AUSTRIA HELLAS
ISO 9001:2008
Reg.No: 01010018

CERTIFICATION BTTG SERVICES
Notified Body

The information contained herein is furnished without charge or obligation and the recipient assumes all the responsibility for its use. Because conditions for use and handling may vary and are beyond our control, we make no representation about, and are no responsible or liable for, the accuracy or reliability of said information or performance of any product. Any specification, properties or applications listed herein are provided as information only in no way modify, amend, enlarge or create any warranty. Nothing contained herein is to be construed as permission or as any recommendation to infringe any patent.

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CERTIFICATION SERVICES

BTTG

Certificate of Factory Production Control

BTTG Ref No: 5100316/1

0338-CPD-0687

In compliance with *Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products* (the Construction Products Directive or CPD), as later amended, it has been stated that the construction products

Polypropylene, UV Stabilized, Black Woven Geotextile Fabric

TP019011P, TP019013P, TP019016P, TP020014P, TP025025W, TP030030W, TP040035W, TP045045W, TP060060W, TP080080W, TP100100W

WG42HF, WG48HF, WG55HF, WG60HF, WG65HF, WG80HF, WG85HF, WG105HF

WG14, WG16, WG18, WG22, WG25, WG30, WG32, WG40, WG42, WG48, WG55, WG60, WG65, WG80, WG85, WG105

placed on the market by

Thrace Nws&GEOs S.A
20 Marinou Antipa str.
GR-174 55 Alimos Athens
Greece

factory address

Magiko Xanthis
GR-671 00
Greece

are submitted by the manufacturer to the initial type-testing of the product, a factory production control and that the notified body No. 0338 - BTTG - has performed the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

This certificate attests that all provisions concerning the attestation of factory production control described in Annex ZA of the standards

Intended uses: F + R + S	**EN 13249:2000/A1:2005; EN 13250:2000/A1:2005; EN 13251:2000/A1:2005; EN 13253:2000/A1:2005; EN 13254:2000/A1:2005; EN 13255:2000/A1:2005; EN 13257:2000/A1:2005**
Intended uses: F + S + D	**EN 13252:2000/A1:2005**
Intended uses: F + R	**EN 13265:2000/A1:2005**

were applied.

This certificate was first issued on 5 March 2012 and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

Signed for and on behalf of BTTG

.....

Mike Nunney
Operational Head, Certification
BTTG
Date Signed: 5 March 2012

For terms and conditions of issue, see Page 2

BTTG Ltd. Registered Office: Wira House, West Park Ring Road, Leeds. LS16 6QL. United Kingdom
Registered in England No. 4628697
Tel: +44 (0)113 259 1999 Fax: +44 (0)113 278 0306 e-mail: info@bttg.co.uk

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Terms and Conditions associated with the issue of EC Certificate of Factory Production Control No: 0338-CPD-0687

1. This certificate is issued subject to BTTG's standard terms of business.

2. Any change to the product and/or technical specification shall be immediately notified to BTTG.

3. The Manufacturer / Authorised Representative shall have continuous surveillance of Factory Production Control carried out by a Notified Body and a re-assessment of Factory Production Control every three years.

4. This certificate remains the property of BTTG and will be withdrawn if any of the conditions attached to its issue are not complied with.

5. Marking and instructions have been assessed in the English language only. It is the Manufacturers/Authorised Representatives responsibility to obtain and supply language versions acceptable to the country where the product is to be sold.

6. This certificate remains valid only if satisfactory maintenance of independent certification against ISO 9001 is achieved.