



The Government of the Hong Kong Special Administrative Region

Civil Engineering Department

**PWP Item No. 3393 RO –
Stanley Waterfront Improvement Project –
Construction of Boardwalk**

Project Profile

July 2003

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

CONTENTS

1.	Basic Information	1
1.1	Project Title	1
1.2	Purpose and Nature of the Project	1
1.3	Name of Project Proponent	1
1.4	Location of Project, Scale of Project and History of Site	1
1.5	Name and Telephone Number of Contact Persons	2
1.6	Number and Types of Designated Projects to be covered by the Project Profile	2
1.7	Estimated Cost	2
2.	Outline of Planning and Implementation Programme	2
3.	Major Elements of the Surrounding Environment	3
4.	Construction Method	3
5.	Possible Impacts on the Environment	4
5.1	Ecology	4
5.2	Noise	4
5.3	Traffic Impact	5
5.4	Water Quality	5
5.5	Air Quality	6
5.6	Solid Waste	6
5.7	Odour.....	7
5.8	Dangerous Goods	7
5.9	Fisheries	7
5.10	Visual Appearance	7
5.11	Landscape Impact	7
6.	Environmental Protection Measures to be Incorporated in the Design and Any Further Environmental Implications	7
6.1	Measures to minimize environmental impacts	7
6.1.1	Noise	8
6.1.2	Water Quality	8
6.1.3	Air Quality	8
6.1.4	Solid Waste	9
6.1.5	Visual Appearance	9
6.1.6	Landscape Impact	9
6.2	Possible severity, Distribution and Duration of Environmental Effects ...	9
6.3	Public Consultation	10
6.4	History of Similar Project	10

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

7.	Use of Previously Approved EIA Reports	10
8.	Conclusion	11

Appendices

Appendix A	Drawing No. TS 2164 - General Layout
Appendix B	Drawing No. TS 2165 - Location of Sensitive Receivers
Appendix C	Drawing No. TS 2205 - General Arrangement
Appendix D	Drawing No. TS 2204 - Diving Inspection Report
Appendix E	Drawing No. TS 2201 - Proposed Mitigation Measures to Environmental Impact
Appendix F	Implementation Schedule for Mitigation Measures

Stanley Waterfront Improvement Project - Construction of Boardwalk Project Profile

1. Basic Information

1.1 Project Title

Stanley Waterfront Improvement Project - Construction of Boardwalk

1.2 Purpose and Nature of the Project

1.2.1 Purpose

The main purpose of the project is to construct a boardwalk along the shoreline of Stanley Main Street, with a view to widening the existing promenade for promoting tourism at Stanley.

1.2.2 Nature

This is a marine work project comprises mainly the following:-

- (a) construction of a vertical seawall with cantilevered boardwalk;
- (b) dredging of about 1,500 m³ rubbles for the seawall foundation; and
- (c) backfilling behind the seawall with the dredged rubbles.

1.3 Name of Project Proponent

Economic Development and Labour Bureau is the policy bureau whilst Technical Services Division of Civil Engineering Department is the works agent for the planning, detailed design and supervision of the proposed vertical seawall and boardwalk.

1.4 Location of Project, Scale of Project and History of Site

The proposed boardwalk is located adjacent to Stanley Main Street. The Drawing No. TS 2164 showing the location of the boardwalk is attached in Appendix A. The scale of works involved is small and the major items are as follows:-

- (1) construction of about 120 m long vertical seawall with reinforced concrete cantilevered boardwalk;
- (2) dredging of about 1,500 m³ rubbles for the seawall foundation; and
- (3) backfilling behind the seawall with the dredged rubbles.

The site is located along Stanley Main Street. In 1999, typhoon York destroyed part of the seawall which was subsequently repaired by Civil Engineering Department.

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

1.5 Name and Telephone Number of Contact Persons

Technical Services Division
Civil Engineering Office
Civil Engineering Department

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1.6 Number and Types of Designated Projects to be covered by the Project Profile

This project profile only covers the “Stanley Waterfront Improvement Project – Construction of Boardwalk”. The project is classified as a Designated Project in accordance with C.12 (a) (vii) of Schedule 2, Part I of the EIAO as the proposed dredging operation is about 140m from the nearest boundary of an existing “Coastal Protection Area”.

1.7 Estimated Cost

\$ 25 million (at December 2002 price level)

2. Outline of Planning and Implementation Programme

2.1 The detailed design and site supervision of construction works of the project will be carried out by Technical Services Division of Civil Engineering Department.

2.2 The tentative implementation programme is as follows:-

Design and Tender Documents	5/2003 to mid 2004
Construction	mid 2004 to early 2006

2.3 The detailed construction sequence is shown below:-

	Major construction activities	Duration
1.	Dredging of rubbles in existing seawall	3 months
2.	Formation of foundation of vertical seawall	4 months
3.	Placing of seawall blocks	3 months
4.	Backfilling of C&D materials behind the seawall	2 months
5.	Casting of cantilevered boardwalk	4 months

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

- 2.4 CED has another project in the vicinity – “Stanley Waterfront Improvement Project – Construction of Pier”. The construction of the pier will commence in mid 2004 for completion by end 2005. The boardwalk construction will be carried out concurrently with that of the pier.

3. Major Elements of the Surrounding Environment

- 3.1 Sensitive receivers which are located within 500m of the site are shown in Drawing No. TS 2165 in Appendix B. They include:-
- (a) coastal protection areas, which comprise flat rock area and other visually important landscape features;
 - (b) recreational facilities at Ma Hang Estate;
 - (c) residential buildings and schools at Stanley Peninsula. The nearest residential building and the nearest school are about 12 m and 70m from the site respectively; and
 - (d) Stanley Bay, which is delineated as secondary contact recreation zone under Water Pollution Control Ordinance.
- 3.2 There are three historical buildings (St. Stephen’s College, Stanley Public Dispensary, St. Stephen’s College Preparatory School) and one declared monument (Old Stanley Police Station) within 500m of the site. However, no impact on them is anticipated as they are all on land while our works are mainly at sea.
- 3.3 Major elements of the surrounding environment which might affect the site area include a public road (Stanley Main Street). The site is zoned as “Open Space” and the construction of the boardwalk is always permitted without any planning application required.

4. Construction Method

- 4.1 The proposed boardwalk consists of a reinforced concrete cantilevered slab sitting on a vertical seawall. A cross-section diagram of the existing and the proposed seawall is shown in Drawing No. TS 2205 in Appendix C. Major construction activities involved in the boardwalk construction include:-
- (a) erection of silt curtain around the site and implementation of water quality monitoring;
 - (b) dredging of 1,500 m³ rubbles;
 - (c) laying of seawall blocks and rubbles;
 - (d) backfilling behind the vertical seawalls with dredged rubbles;
 - (e) construction of the reinforced concrete cantilevered boardwalk; and
 - (f) installation of associated E&M facilities.

5. Possible Impacts on the Environment

Possible impacts on the environment during both the construction and the operation stages are outlined in the following sections.

5.1 Ecology

- 5.1.1 Diving surveys were carried out on 17.3.2003, 18.3.2003 and 14.4.2003 by our CED diving team to search for any marine species within intertidal zone and under the water. The inspection results revealed that most of the seabed area was composed of sand. Only small amount of mussel, barnacle and sea urchin, but no coral species and endangered lives, were found near our works area. Therefore, minimal ecological impact is anticipated. The inspection results are shown in Drawing No. TS 2204 in Appendix D.
- 5.1.2 The seawall below the high watermark (+2.5 mCD) will remain sloping which can provide substrate for the colonization of marine life. Therefore, impact on marine ecology is minimal.
- 5.1.3 Most of the works will be carried out at sea and so the environmental impact on the ecology on land will be minimal.
- 5.1.4 The existing coastline is formed by man-made seawall and so no loss of natural coastal area will be involved.
- 5.1.5 The area of the bay fronting the boardwalk is about 20,440 m² and the length of the existing coastline is about 395m. The area of the proposed boardwalk is 1411m² which occupies 7% of the bay area. The new coastline is 377m long, resulting in a reduction of 5% of the existing one. Therefore, the net loss of the coastal area and coastline will be insignificant. Since the alignment of the boardwalk follows in general that of the existing shoreline, the geographic condition of the site will not be affected significantly.

5.2 Noise

- 5.2.1 No piling works will be involved. Since other works including dredging of rubbles, backfilling and reinforced concrete works will not arouse substantial noise, noise impact to the surrounding is minimal.
- 5.2.2 The distances between the site and the nearest residential building and school are 12m and 70m respectively, as indicated in Drawing No. TS 2165 in Appendix B. Although they seem to be quite close, low noise level is anticipated as no piling works will be involved for the boardwalk construction. Plants to be used during the construction are probably of the following:-

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

Major construction activities	Construction plants likely to be used	Anticipated Noise Level (dB)
Dredging of rubbles in existing seawall	Backhoe	70 - 75
Formation of foundation of vertical seawall	Derrick barge	65 – 70
Placing of seawall blocks	Derrick barge	65 – 70
Backfilling of C&D materials behind the seawall	Derrick barge + roller	70 – 75
Casting of cantilevered boardwalk	Derrick barge + skip	70 - 75

5.3 Traffic Impact

5.3.1 Marine Traffic

Although transportation of major construction materials will be restricted to marine access, the impact is considered insignificant because the number of plant involved (about two barges) will be relatively small for project of this scale.

5.3.2 Land Traffic

The impact is considered insignificant because the number of lorries involved will be relatively small (occasionally, about two lorries for transporting construction materials) for project of this scale.

5.3.3 Site hoarding will be erected along the cope line of the existing seawall so that Stanley Main Street will remain accessible during the boardwalk construction. As transportation of major construction materials will be restricted to marine access, minimal traffic impact on local roads in the town centre is anticipated.

5.4 Water Quality

5.4.1 As shown in Drawing No. TS 2205 in Appendix C, the boardwalk construction will only involve dredging of rubbles which are part of the existing seawall structure. Dredging of marine mud will not be required for the construction works.

5.4.2 Part of the rubbles of the existing seawall will be removed for the construction of the new seawall. The quantities of rubbles involved will be about 1,500 m³ and the rubbles will be re-used within the site as backfill behind the new seawall. As dredging of marine mud will not be involved, the water turbidity will not be increased significantly. To further safeguard the water quality in the area, silt curtain will be installed and environmental monitoring will be implemented.

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

- 5.4.3 The placing of backfill behind the new seawall will unlikely have any adverse effects on water quality because the fill materials will be retained by the seawall.
- 5.4.4 As the alignment of the boardwalk follows in general to that of the existing shoreline, water circulation will not be impeded and no stagnant water body will be produced around the site.
- 5.4.5 A new pier will be constructed outside Murray House in the vicinity of the boardwalk site. Pre-bored H-piles will be adopted as the foundation of the pier. As a general practice, silt curtain will be installed around the pier and boardwalk site to safeguard the water quality, therefore, cumulative water quality impact is expected to be minimal.
- 5.4.6 In the site office, foul water effluent will be directed to a foul sewer so that water quality within Stanley Bay will not be affected.
- 5.4.7 One existing storm drain falls within the site area. The existing pipe will be extended. No diversion will be required.

5.5 Air Quality

- 5.5.1 Dust emission resulting from on-site construction activities is expected. However, dust problem is expected to be minimal since no concrete batching will be allowed on site and the scale of the works is small. The major earthwork involved will be the handling of dredged rubbles which will generate only a few dusts on site.
- 5.5.2 The emitted gas from construction plant is also expected to be minimal since the number of construction plant on site is small. During peak period, only two diesel plants - a mobile crane and an air compressor - will be involved on site.

5.6 Solid Waste

- 5.6.1 All the dredged materials will be inert C&D materials which comprise mainly rubbles, artificial hard materials and marine sand. They will be temporarily stored in a container inside the barge before re-use.
- 5.6.2 The types and quantities of each type of waste generated and their recommended disposal methods are summarized below:

Type of waste generated	Quantity (m³)	Recommended Disposal Method
Rubbles	1300	Re-use in the foundation of seawall
Artificial hard materials	400	Re-use as backfill behind the seawall
Grade 700 rockfill	250	Re-use in the foundation of seawall
Marine sand	200	Re-use as backfill behind the seawall

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

5.7 Odour

As no mud dredging will be involved, no odour problem is expected.

5.8 Dangerous Goods

No dangerous goods will be involved.

5.9 Fisheries

No fish culture zone is identified in the vicinity.

5.10 Visual Appearance

5.10.1 As the alignment of the boardwalk follows in general that of the existing shoreline and the sea view of the area will not be blocked by the proposed boardwalk, the visual appearance of the area will not be affected.

5.10.2 The rock outcrop in the coastal protection area will not be affected by the works and so its visual value can be maintained.

5.10.3 Views to Chek Chue Wan from Stanley Main Street and Murray House will not be blocked by hoarding as special hoarding with openings and see-through panels will be used during the construction period.

5.11 Landscape Impact

5.11.1 The boardwalk only occupies 7% of the bay area and the existing coastline will only be reduced by 5%. Therefore, the net loss of the coastal area is insignificant. On the other hand, its appearance will be substantially improved, as new vertical seawall with natural stone cladding will be constructed above the existing rubble. In general, a total of about 700 m² of vertical seawall will be exposed above the average water level.

5.11.2 Since there are no existing trees growing within the site area, tree transplanting/felling work will not be required.

6. Environmental Protection Measures to be Incorporated in the Design and Any Further Environmental Implications

6.1 Measures to minimise environmental impacts

Stanley Waterfront Improvement Project - Construction of Boardwalk Project Profile

6.1.1 Noise

- 6.1.1.1 Although the nearest receiver is very close to the site (12m away from the site), the anticipated noise level is very low since no piling works will be involved and the other works including dredging of rubbles, backfilling, and reinforced concrete works will not arouse substantial noise.
- 6.1.1.2 Even though the anticipated noise is low, clauses will be incorporated into the contract and appropriate mitigation measures will be implemented to control noise levels within acceptable limit as stipulated under Noise Control Ordinance, EIAO and other relevant regulations during the construction.
- 6.1.1.3 To minimize the nuisance to tourists and nearby residents, no construction work will be allowed to be carried out at night times and during weekends and public holidays.

6.1.2 Water Quality

It is expected that there will be no appreciate impact on water quality during construction. However, to further safeguard the surrounding water, the following measures will be implemented:-

- (a) Installation of silt curtain around the site
The proposed locations of silt curtain are shown in Drawing No. TS 2201 in Appendix E. Silt curtain, which was commonly adopted in similar contracts, will be installed in order to minimize the water quality impact. With its bottom side reaching the seabed and its top supporting on floating booms, silt curtain can accommodate tidal rise and fall, and the ingress of turbid water is limited.
- (b) Water quality monitoring throughout the whole construction period
The water quality monitoring programme in this project will follow the “Environmental Monitoring and Audit, Guidelines for Development Projects in Hong Kong”. The proposed monitoring stations are shown in Drawing No. TS 2201 in Appendix E. Baseline monitoring, impact monitoring and post-construction monitoring on turbidity and suspended solids will be carried out one month prior to the construction, during the construction and one month after the construction respectively at mid-flood and mid-ebb tides, at a frequency of three days per week. EM&A manual and monthly EM&A reports will be submitted to EPD for comments.

6.1.3 Air Quality

The site is situated along commercial and residential area. Since the works will not involve appreciable earthworks, dust pollution will not be a cause for concern and Air Pollution Control (Construction Dust) Regulation will be followed to ensure no adverse dust impact to the sensitive receivers.

Stanley Waterfront Improvement Project - Construction of Boardwalk Project Profile

6.1.4 Solid Waste

- 6.1.4.1 As all the dredged materials will be re-used within the site, minimal solid waste will be generated.
- 6.1.4.2 Dust problem will likely to be created by the dredging, handling, collection and deposition of materials. Therefore, water will be sprayed on the filling materials to minimize the air pollution.
- 6.1.4.3 Specifications on environmental mitigation measures and monitoring will be incorporated in the contract documents for the contractor to comply with. In addition, the contractor has to submit waste management plan and review the plan at monthly interval in accordance with contract requirements.

6.1.5 Visual Appearance

In order to maintain visual connection to Chek Chue Wan from Stanley Main Street and Murray House, special hoarding with openings and see-through panels will be designed and constructed along the boundary to allow maintain the sea view during the construction period. Its location can be referred to Drawing No. TS 2201 in Appendix E.

6.1.6 Landscape Impact

It is expected that there will be no negative impact to the area during the construction and the operation stages. For extra precaution, existing trees at Stanley Main Street will be protected during the construction period and protective measures will follow Leisure and Cultural Services Department's requirements.

6.2 Possible Severity, Distribution and Duration of Environmental Effects

The possible severity, distribution and duration of environmental effects and further implications are summarised below:-

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

	Effects	Severity	Distribution	Duration
Ecology	Minimal disturbance to seabed from formation of seawall foundation	Minimal	Local – Near the boardwalk	About 10 months
Noise	Noise nuisance from construction plants	Minimal	Local – Near the boardwalk	About 16 months
Water Quality	Minimal disturbance to seabed from formation of seawall foundation	Minimal	Local – Near the boardwalk	About 10 months
Air Quality	Dust emission from construction activities	Minimal	Local – Near the boardwalk	About 10 months
Visual Appearance	Views to Chek Chue Wan from Stanley Main Street and Murray House will be partially blocked	Minimal	Local – Near the boardwalk	About 16 months
Landscape Impact	Enhance attractiveness of the local area	Beneficial	Focal point near the boardwalk	Long term

6.3 Public Consultation

- 6.3.1 The Southern District Council was consulted on 19.09.2002. The SDC supported the project in principle. Through gazetting of the proposed project under the Foreshore and Seabed (Reclamation) Ordinance, the public likely to be affected by the project can express their views which may be subsequently taken into consideration during the planning and design stages.
- 6.3.2 The project is political sensitive as The Hon CHOY So-yuk, a LegCO Member, strongly supports the project.

6.4 History of Similar Project

No similar project is found.

7. Use of Previously Approved EIA Reports

As there is no adjacent Designated Project, no previously approved EIA report can be used.

**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

8. Conclusion

8.1 Ecological, noise, water quality, air quality, visual appearance and landscape impact arising from the project are minimal.

8.2 The following mitigation measures will be incorporated into the project:-

- (a) standard mitigation measures;
- (b) installation of a silt curtain around the site; and
- (c) environmental monitoring around the site.

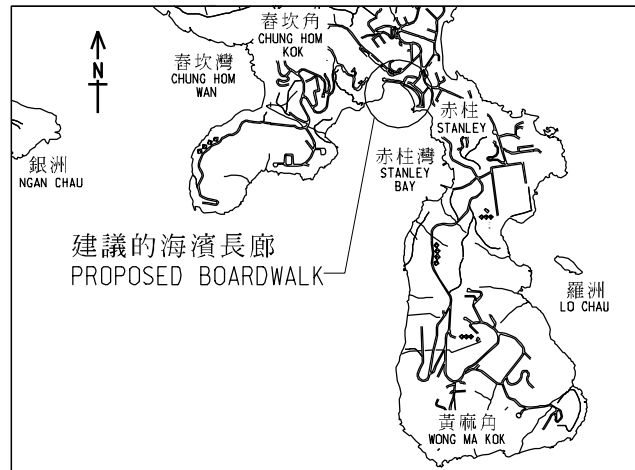
An implementation schedule for mitigation measures is shown in Appendix F.

8.3 As the environmental impact arising from the project is insignificant, direct application of Environmental Permit under EIAO will be adopted.

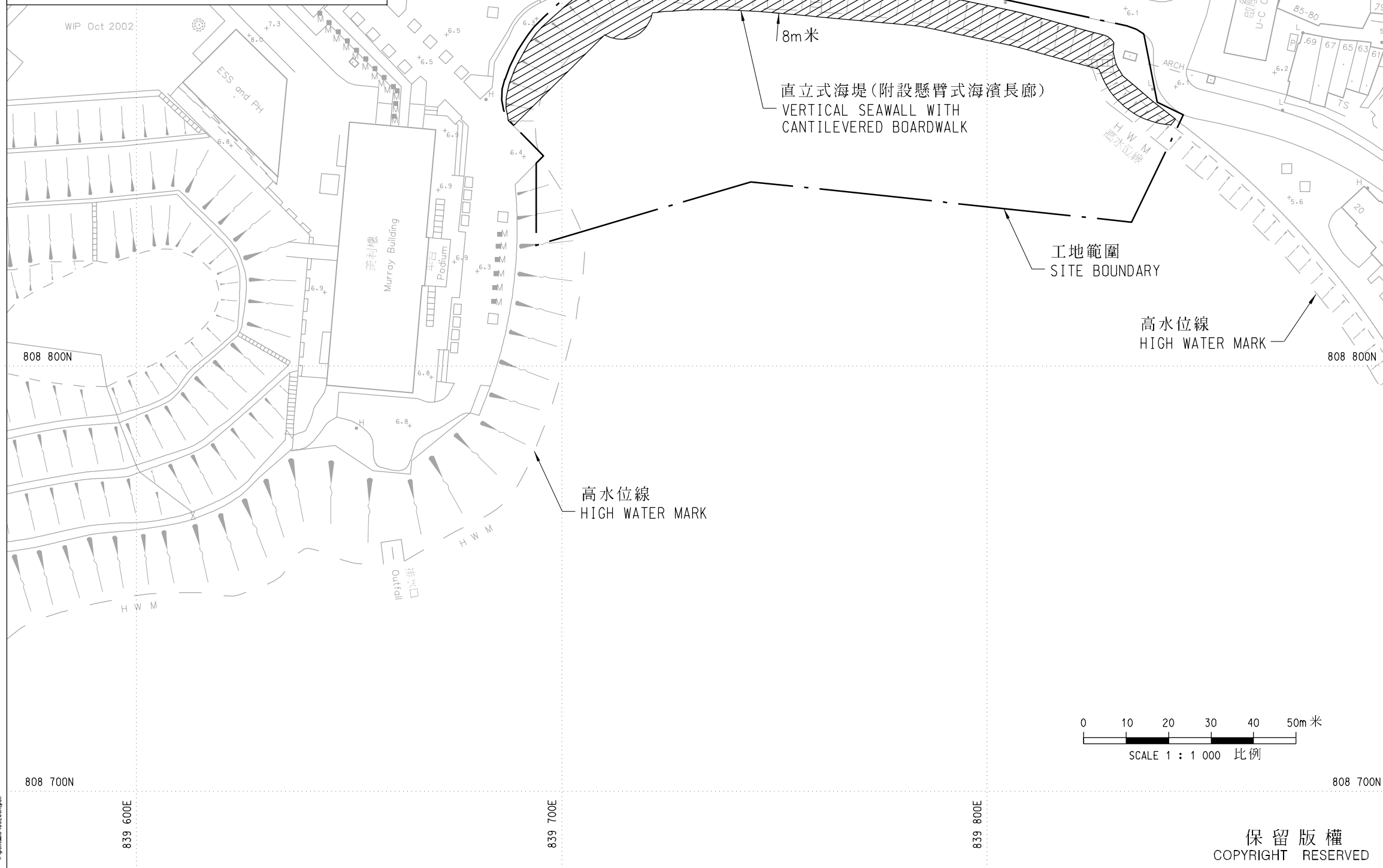
**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

Appendix A

Drawing No. TS 2164 - General Layout



KEY PLAN 位置圖
SCALE 1 : 50 000 比例



圖例
LEGEND:
 擬建的海濱長廊
 PROPOSED BOARDWALK

編號 no.	日期 date	說明 description	核對 checked	核准 approved
修訂 REVISION				
		姓名 name	簡簽 initial	日期 date
設計 designed		Y K AU	SIGNED	27.6.03
繪畫 drawn		K L CHAN	SIGNED	27.6.03
摹描 traced		K L CHAN	SIGNED	27.6.03
核對 checked		Y W LI	SIGNED	27.6.03

核准 approved
 SIGNED
 (N P TONG)
 日期 date : 27.6.03
 Chief Engineer

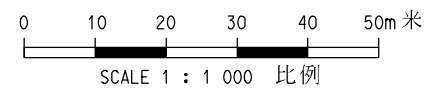
合約編號 contract no. -
 檔案編號 file no. -
 工程編號 project no. 3393 R0
 合約 contract

名稱 drawing title
 赤柱海濱改善工程-建造海濱長廊-總平面圖
 STANLEY WATERFRONT IMPROVEMENT PROJECT - CONSTRUCTION OF BOARDWALK - GENERAL LAYOUT

圖則編號 drawing no. TS 2164
 比例 scale 1 : 1 000

office 辦事處
 TECHNICAL SERVICES DIVISION 工程技術部
 CIVIL ENGINEERING OFFICE 土木工程處

CIVIL ENGINEERING DEPARTMENT 香港
 HONG KONG 土木工程署



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**Stanley Waterfront Improvement Project - Construction of Boardwalk
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Appendix B

Drawing No. TS 2165 - Location of Sensitive Receivers

圖例
LEGEND:
 工地範圍
SITE BOUNDARY

編號 no.	日期 date	說明 description	核對 checked	核准 approved
修訂 REVISION				
		姓名 name	簡簽 initial	日期 date
設計 designed		Y K AU	SIGNED	27.6.03
繪畫 drawn		K L CHAN	SIGNED	27.6.03
摹描 traced		K L CHAN	SIGNED	27.6.03
核對 checked		Y W LI	SIGNED	27.6.03


核准
approved
 SIGNED
 (N P TONG)
 日期
Chief Engineer
 date : 27.6.03

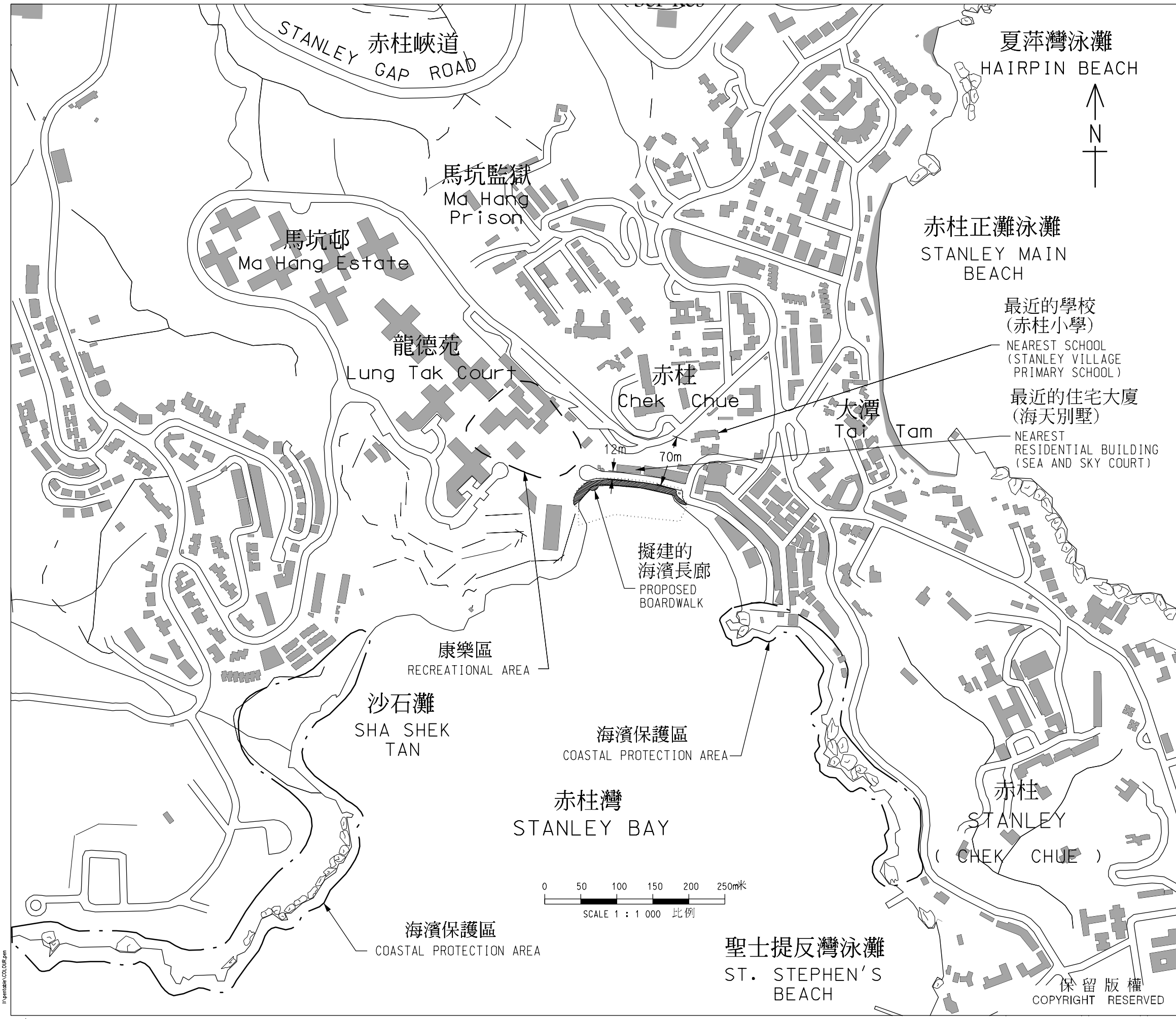
合約編號 contract no.	-
檔案編號 file no.	-
工程編號 project no.	3393 R0
合約 contract	

名稱
drawing title
 赤柱海濱改善工程-建造海濱
 長廊-敏感受體位置圖
 STANLEY WATERFRONT IMPROVEMENT
 PROJECT - CONSTRUCTION OF
 BOARDWALK - LOCATION OF
 SENSITIVE RECEIVERS

圖則編號 drawing no.	比例 scale
TS 2165	1 : 5000

office 辦事處
 TECHNICAL SERVICES DIVISION 工程技術部
 CIVIL ENGINEERING OFFICE 土木工程處

 CIVIL ENGINEERING
 DEPARTMENT 香港
 HONG KONG 土木工程署



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**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

Appendix C

Drawing No. TS 2205 - General Arrangement

- 注釋
NOTES
1. ALL DIMENSIONS ARE IN METRES.
以米為量度單位。
 2. ALL LEVELS REFER TO CHART DATUM (C.D.) AND ARE IN METRES.
所有高程均根據海圖基準面(C.D.)，以米標示。
 3. THIS DRAWING IS FOR ILLUSTRATION ONLY. THE DETAILED DIMENSION WILL VARY SUBJECT TO DETAILED DESIGN. 此圖則只用作附加說明。準確的尺寸會在詳細設計階段時決定。

- 圖例
LEGEND:
- 擬建的海濱長廊
PROPOSED BOARDWALK
 - 工地範圍
SITE BOUNDARY

編號 no.	日期 date	說明 description	核對 checked	核准 approved
修訂 REVISION				
		姓名 name	簡簽 initial	日期 date
設計 designed		Y K AU	SIGNED	27.6.03
繪畫 drawn		K L CHAN	SIGNED	27.6.03
摹描 traced		K L CHAN	SIGNED	27.6.03
核對 checked		Y W LI	SIGNED	27.6.03

核准
approved

SIGNED
(N P TONG)
日期
Chief Engineer
date : 27.6.03

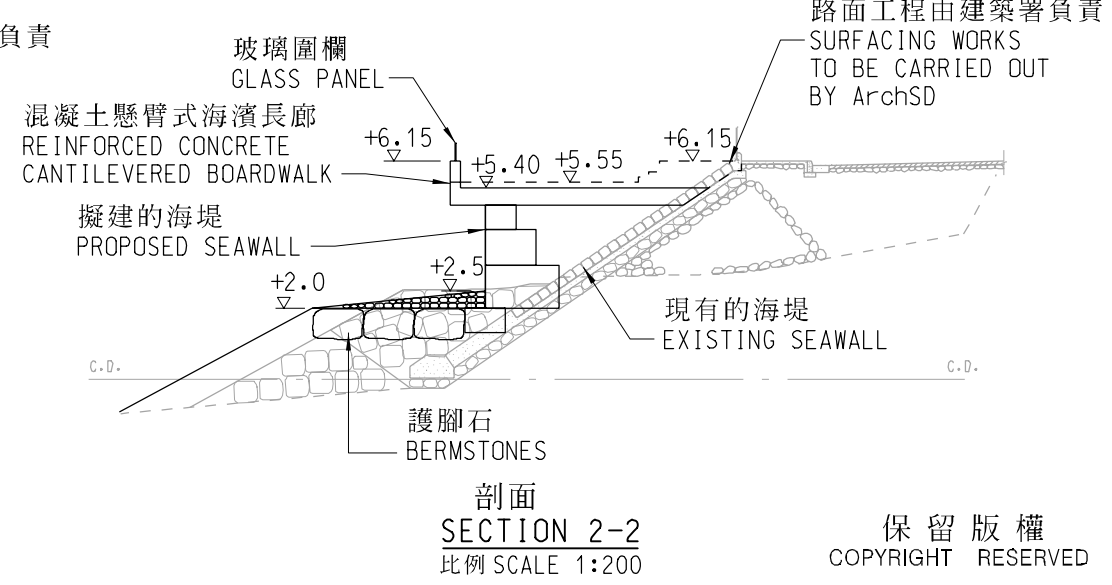
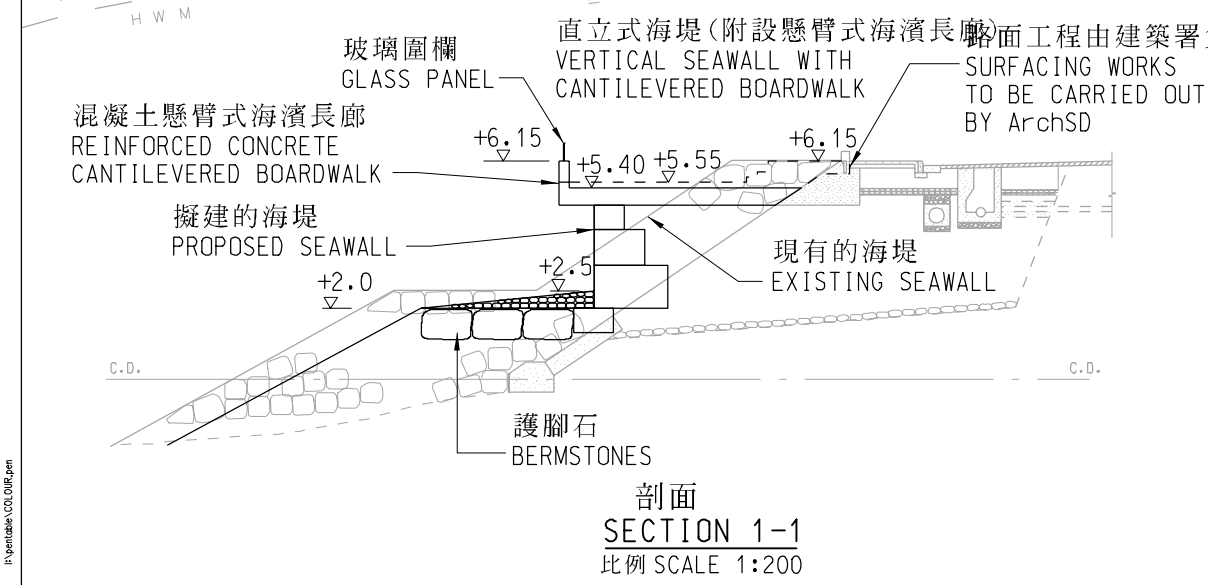
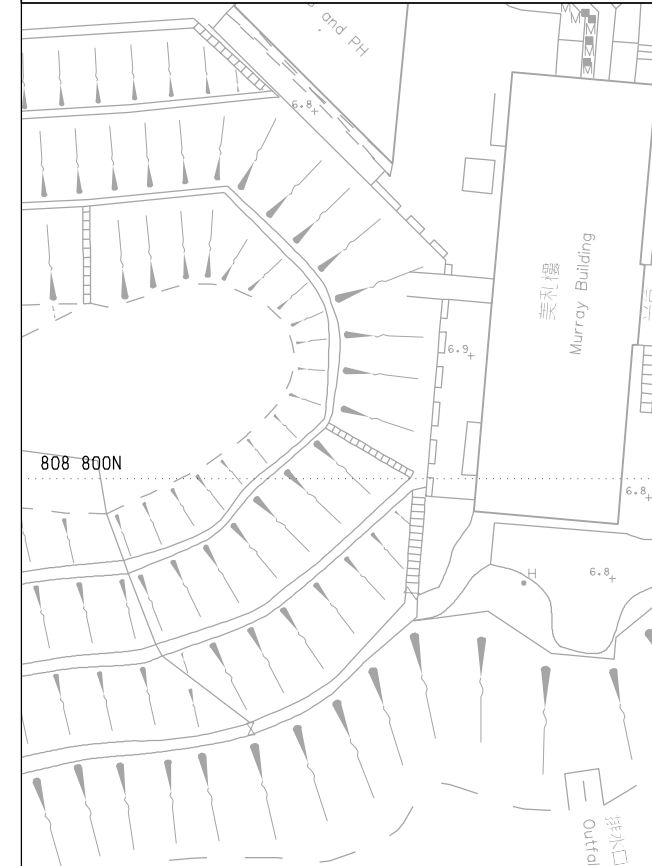
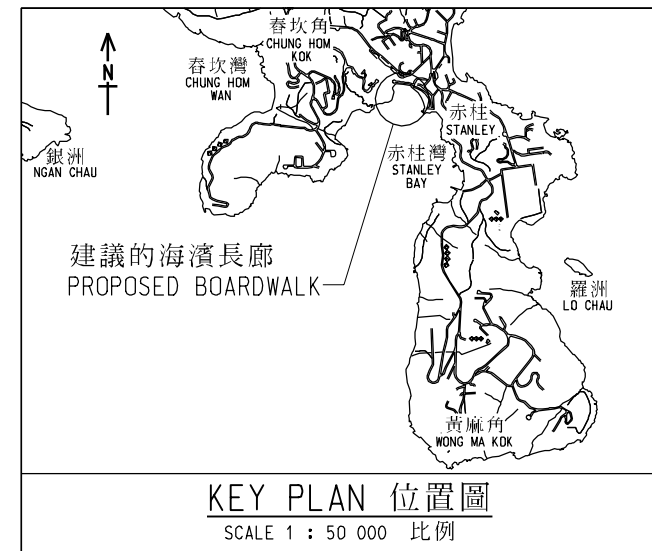
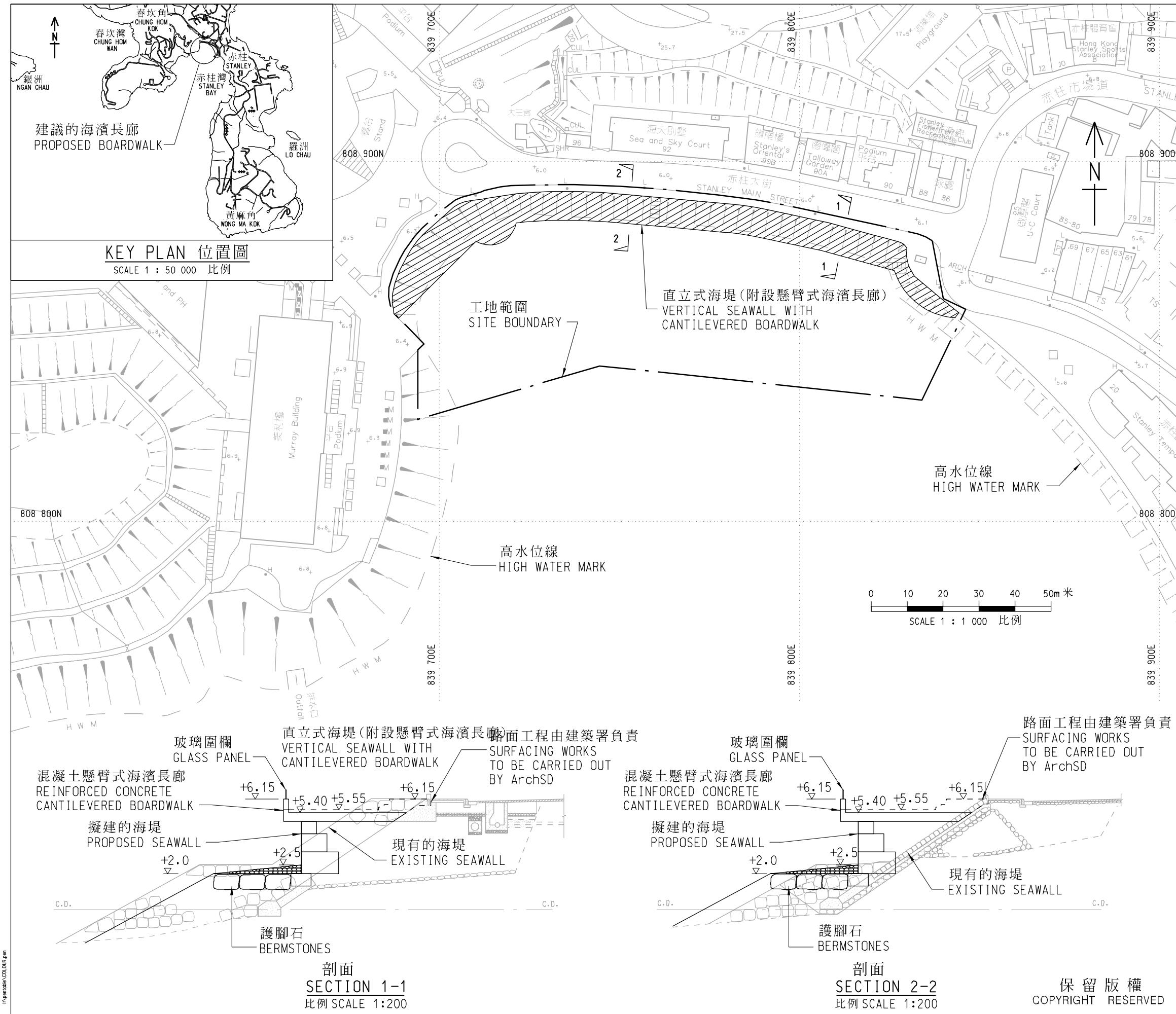
合約編號 contract no.	-
檔案編號 file no.	-
工程編號 project no.	3393 R0
合約 contract	

名稱 drawing title
赤柱海濱改善工程-建造海濱長廊-概略設計圖
STANLEY WATERFRONT IMPROVEMENT PROJECT - CONSTRUCTION OF BOARDWALK - GENERAL ARRANGEMENT

圖則編號 drawing no.	比例 scale
TS 2205	1 : 1 000

office 辦事處
TECHNICAL SERVICES DIVISION 工程技術部
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Appendix D

Drawing No. TS 2204 - Diving Inspection Report

圖例
LEGEND:

	擬建的海濱長廊 PROPOSED BOARDWALK
	工地範圍 SITE BOUNDARY
	潛水檢查範圍 AREA OF DIVING INSPECTION

編號 no.	日期 date	說明 description	核對 checked	核准 approved
修訂 REVISION				
		姓名 name	簡簽 initial	日期 date
設計 designed		Y K AU	SIGNED	27.6.03
繪畫 drawn		K L CHAN	SIGNED	27.6.03
摹描 traced		K L CHAN	SIGNED	27.6.03
核對 checked		Y W LI	SIGNED	27.6.03
核准 approved				
SIGNED (N P TONG) 日期 Chief Engineer date : 27.6.03				

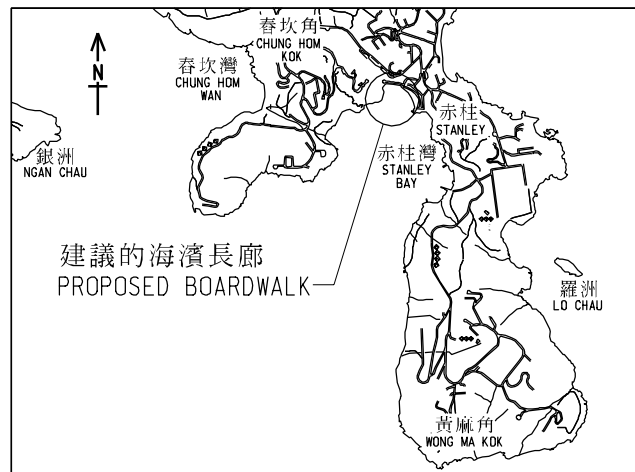
合約編號 contract no.	-
檔案編號 file no.	-
工程編號 project no.	3393 R0
合約 contract	

名稱 drawing title	赤柱海濱改善工程-建造海濱長廊-潛水檢查報告 STANLEY WATERFRONT IMPROVEMENT PROJECT - CONSTRUCTION OF BOARDWALK - DIVING INSPECTION REPORT
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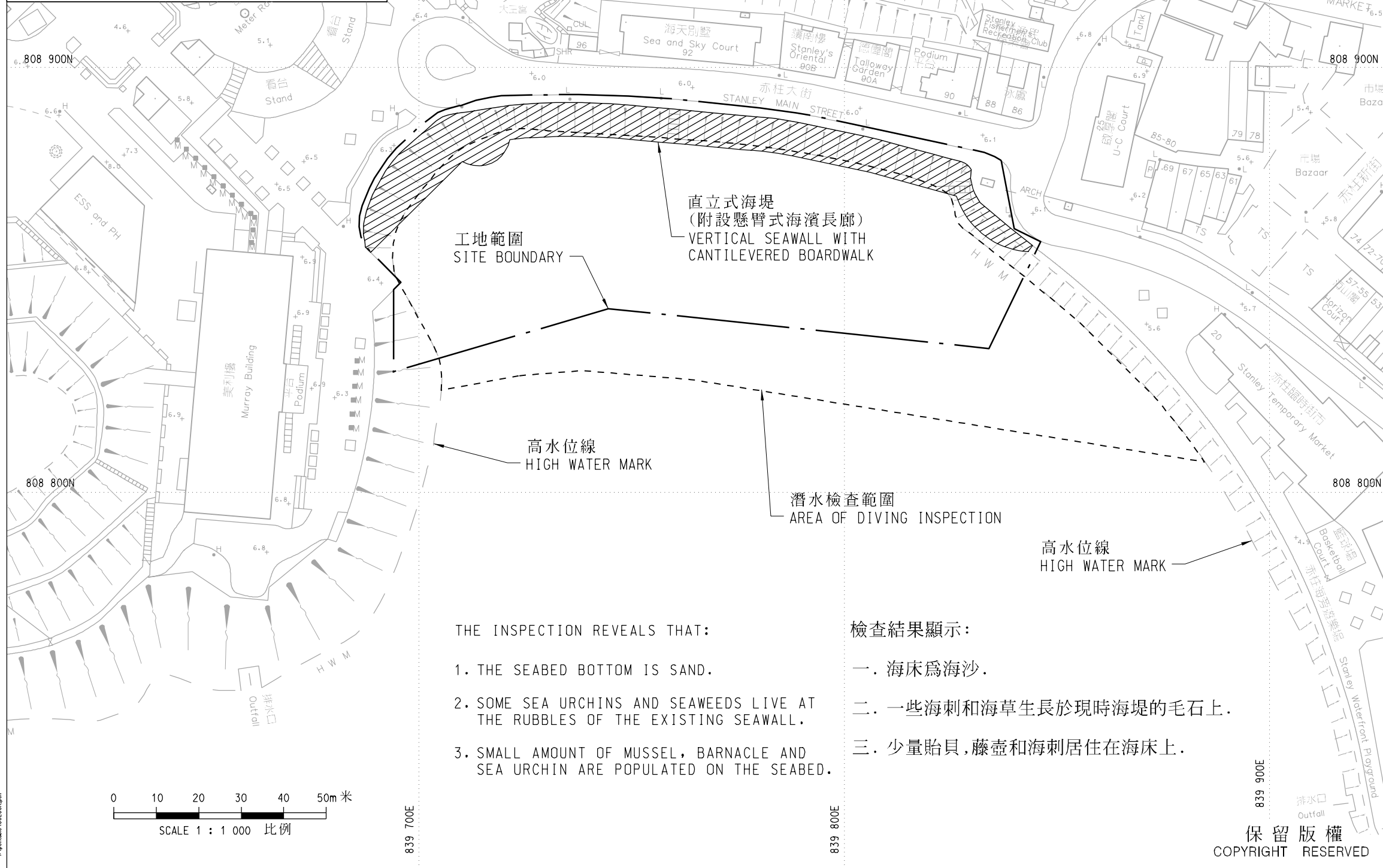
圖則編號 drawing no.	比例 scale
TS 2204	1 : 1 000

office 辦事處
TECHNICAL SERVICES DIVISION 工程技術部
CIVIL ENGINEERING OFFICE 土木工程處

CIVIL ENGINEERING DEPARTMENT 香港
HONG KONG 土木工程署

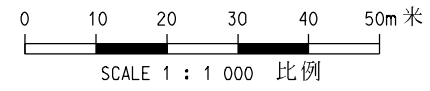


KEY PLAN 位置圖
SCALE 1 : 50 000 比例



- THE INSPECTION REVEALS THAT:
1. THE SEABED BOTTOM IS SAND.
 2. SOME SEA URCHINS AND SEAWEEDES LIVE AT THE RUBBLES OF THE EXISTING SEAWALL.
 3. SMALL AMOUNT OF MUSSEL, BARNACLE AND SEA URCHIN ARE POPULATED ON THE SEABED.

- 檢查結果顯示:
- 一. 海床為海沙。
 - 二. 一些海刺和海草生長於現時海堤的毛石上。
 - 三. 少量貽貝, 藤壺和海刺居住在海床上。

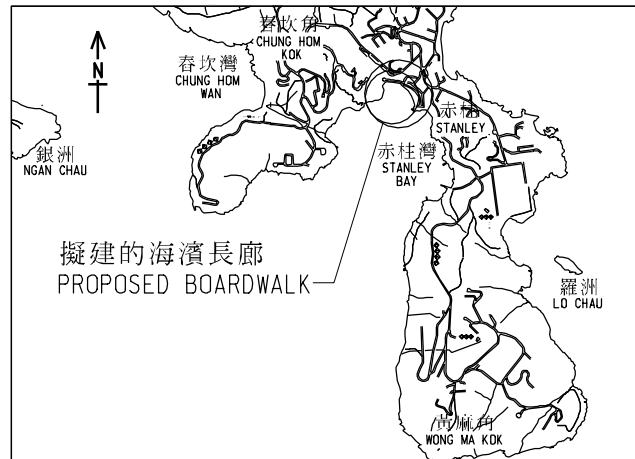


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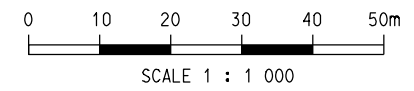
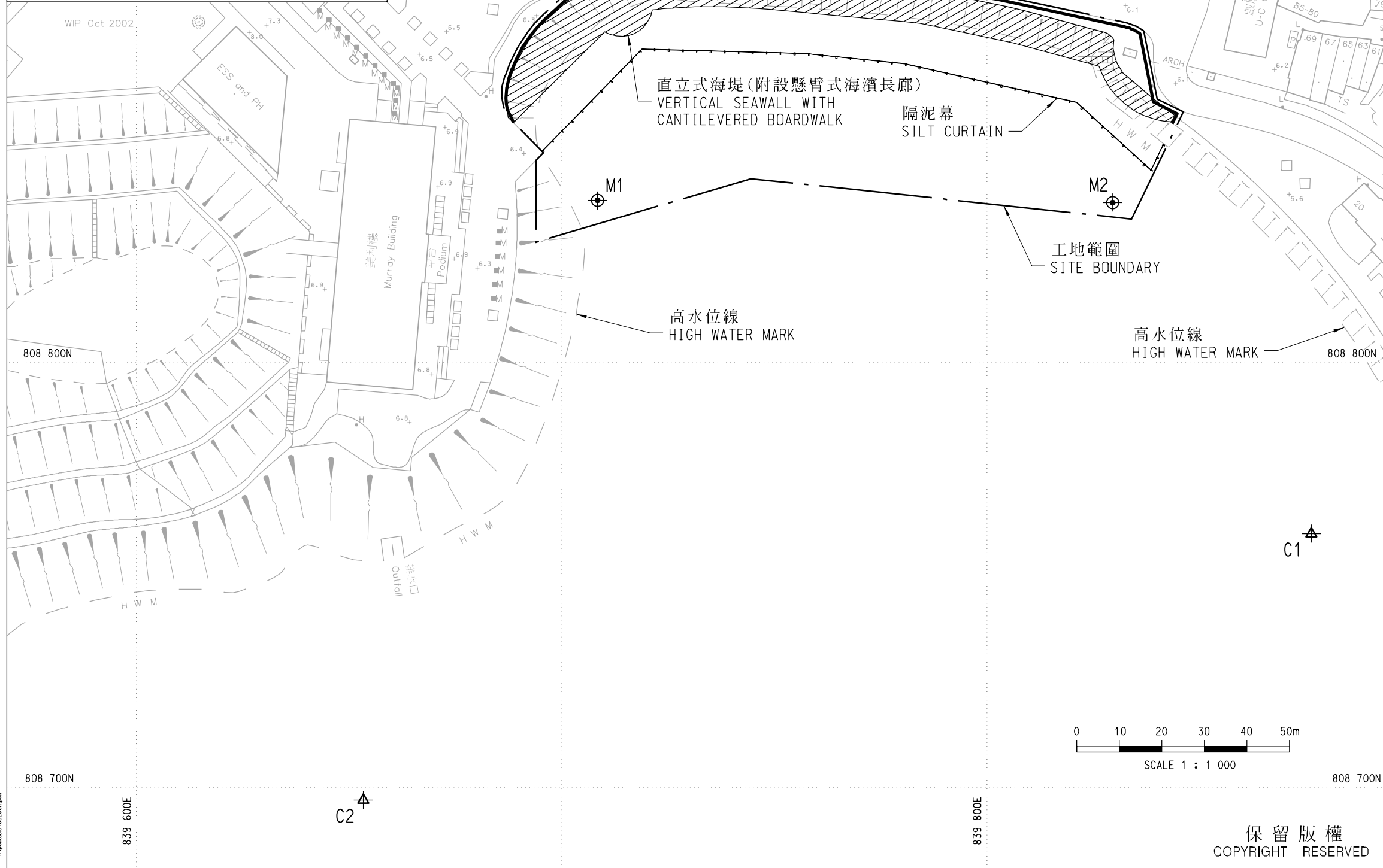
**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

Appendix E

Drawing No. TS 2201 - Proposed Mitigation Measures to Environmental Impact



KEY PLAN 位置圖
SCALE 1 : 50 000 比例



注釋 NOTES

1. THIS DRAWING IS FOR ILLUSTRATION ONLY. THE EXACT LOCATION OF THE MONITORING AND CONTROL STATIONS WILL BE CONFIRMED IN DETAILED DESIGN STAGE.
此圖則只用作附加說明。監察站和控制站的準確位置將會在詳細設計階段時決定。

圖例 LEGEND:

- 擬建的海濱長廊 PROPOSED BOARDWALK
- 監察站 MONITORING STATION
- 控制站 CONTROL STATION
- 隔泥幕 SILT CURTAIN
- 裝有透明板的地盤圍欄 HOARDING WITH TRANSPARENT PANELS

編號 no.	日期 date	說明 description	核對 checked	核准 approved
--------	---------	----------------	------------	-------------

修訂 REVISION				
	姓名 name	簡簽 initial	日期 date	
設計 designed	Y K AU	SIGNED	27.6.03	
繪畫 drawn	K L CHAN	SIGNED	27.6.03	
摹描 traced	K L CHAN	SIGNED	27.6.03	
核對 checked	Y W LI	SIGNED	27.6.03	

核准 approved
 SIGNED
 (N P TONG)
 日期 Chief Engineer
 date : 27.6.03

合約編號 contract no. -

檔案編號 file no. -

工程編號 project no. 3393 R0

合約 contract

名稱 drawing title
 赤柱海濱改善工程-建造海濱長廊-建議減輕環境影響的措施
 STANLEY WATERFRONT IMPROVEMENT PROJECT - CONSTRUCTION OF BOARDWALK - PROPOSED MITIGATION MEASURES TO ENVIRONMENTAL IMPACT

圖則編號 drawing no. TS 2201
 比例 scale 1 : 1 000

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 CIVIL ENGINEERING OFFICE 土木工程處

CIVIL ENGINEERING DEPARTMENT 香港
 HONG KONG 土木工程署

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**Stanley Waterfront Improvement Project - Construction of Boardwalk
Project Profile**

Appendix F

Implementation Schedule for Mitigation Measures

Implementation Schedule

PWP Item no. 3393 RO – Stanley Waterfront Improvement Project – Construction of Boardwalk

Project Profile Sections	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards of ordinance/guidelines for the measure to achieve?
6.1.1.2	Implementation of appropriate mitigation measures to noise impact in accordance with contract requirements	To minimize noise impact due to the construction	Contractor	Site area	During the construction period	Noise Control Ordinance, Environmental Impact Assessment Ordinance
6.1.1.3	No construction work will be allowed to be carried out at night, during weekends and public holidays	To minimize the nuisance to tourists and nearby residents	CED/ Contractor	-	During the construction period	-
6.1.2 (a)	Installation of silt curtain	To minimize the water quality impact due to the construction works	Contractor	Around the site area. Location of silt curtain can be referred to Drawing No. TS 2201 in Appendix E.	During the construction period	Environmental Monitoring & Audit, Guidelines for Development Project in Hong Kong
6.1.2 (b)	Implementation of water quality monitoring	To minimize the water quality impact due to the construction works	Contractor	In vicinity of the site area. Locations of monitoring stations can be referred to Drawing No. TS 2201 in Appendix E.	During the period of marine work (Item 1-4 in Section 2.3)	Environmental Monitoring & Audit, Guidelines for Development Project in Hong Kong
6.1.4.2	Spraying of water on filling materials	To minimize the dust problem created by dredging, handling, collection & deposition of materials	Contractor	Site area	During dredging, handling, collection & deposition of materials	Air Pollution Control (Construction Dust) Regulations

Implementation Schedule

PWP Item no. 3393 RO – Stanley Waterfront Improvement Project – Construction of Boardwalk

Project Profile Sections	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards of ordinance/guidelines for the measure to achieve?
6.1.4.3	Implementation of Environmental Monitoring & Audit	To minimize the environmental impact due to the construction	Contractor	Site area	During the construction period	Environmental Monitoring & Audit, Guidelines for Development Project in Hong Kong
6.1.4.3	Implementation of Waste Management Plan	To monitor the C&D materials generated during the construction	Contractor	-	During the construction period	WBTC No. 29/2000
6.1.5	Erection of special hoarding with openings and see-through panels along the site boundary	To maintain the sea view during construction period	Contractor	Along the boundary of site area. Its location can be referred to Drawing No. TS 2201 in Appendix E.	During the construction period	-
6.1.6	Implementation of protection measures to existing trees at Stanley Main Street	To preserve the existing trees along Stanley Main Street	Contractor	Along Stanley Main Street	During the construction period	Leisure and Cultural Services Department's requirements