



The Government of the Hong Kong Special Administrative Region

Civil Engineering Department

**Reconstruction of Sham Chung Public Pier,
Sai Kung North, Tai Po**

Project Profile

November 2003

**Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po
Project Profile**

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Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po Project Profile

1. Basic Information

1.1 Project Title

Reconstruction of Sham Chung Public Pier

1.2 Purpose and Nature of the Project

The purpose of the project is to reconstruct the existing Sham Chung Public Pier at Sai Kung North of Tai Po. Recent inspection by the Civil Engineering Department (CED) reveals that the pier, which was constructed in 1960s using prestressed concrete members, is in a poor condition with spalling concrete and broken tendons. With increased inspection and frequent repair, we may be able to extend the life of the pier by a few years. However, from the maintenance point of view, it is very difficult and costly to repair the deteriorated prestressed tendons. At least more than \$1 million is required for an extensive repairing work in order to extend the service life of a pier for about 5 years. Even with such costly repair, the long-term durability of the structure will still be limited and the appearance of a pier after this kind of remedial repairing work can never be restored to the original standard. Therefore, it is necessary to reconstruct the Sham Chung Public Pier which will have a design life of 50 years in accordance with Port Works Design Manual Part 1 (May 2002). In addition, we will also take this opportunity to enhance the appearance of the pier and to provide a design compatible with the surrounding landscape.

1.3 Name of Project Proponent

Economic Development and Labour Bureau is the policy bureau. CED is the client department and the works agent for the planning, detailed design and works supervision of the project.

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

The existing pier was built in 1960s. It is a public pier mainly for kaitos and pleasure vessels operating in Sai Kung North area.

The proposed new pier is located adjacent to the existing pier. The proposed structural form of the new pier shall be open type suspended deck sitting on piles. Drawing Nos. TS 2227 and TS 2221 showing the location and general arrangement of the new pier are attached at Appendix A and B respectively. The scale of the works is small and the works comprise the following:

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 CED.

2.2 The tentative implementation programme is as follows:

Design and Tender Documents.....	5/2003 to 5/2004
Tendering.....	6/2004 to 9/2004
Construction.....	10/2004 to 10/2006

3. Existing Sensitive Receivers

The existing sensitive receivers marked on Drawing No. TS 2222 at Appendix D are described below:

3.1 Sai Kung West Country Park

3.1.1 The proposed site falls partly within the Sai Kung West Country Park. In order to identify any valuable marine life adjoining the country park, a diving inspection was carried out by CED in July 2003. No living corals were discovered. The following living organisms are found in the vicinity of the site during the inspection:

- (a) groups of mussels, barnacles, urchins, starfish, and tubeworm were found on seabed or between boulders/rocks; and
- (b) some sea anemones and sea squirts were found.

Referring to the findings of diving inspection shown on Drawing No. TS 2223A at Appendix E, it is concluded that no rare underwater and coastal species or habitats are found near the shore within the inspection area.

3.1.2 For the sensitive receivers on land at the proposed pier landing point, the potential terrestrial ecological impacts arising from the construction activities may include direct impacts due to habitat loss, i.e. loss of grass and shrub and indirect impacts due to construction activities such as increased human activities or disturbance.

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3.2 Site of Cultural Heritage

Having examined the preliminary borelogs of the site, no abnormality on the seabed and underlying sediments is found in the vicinity of the proposed works site. The proposed pier is not located in the vicinity of declared monuments and there have been no known archaeological monuments found near the sites. Marine archaeological investigation is not required by the Director of Leisure and Cultural Services (DLCS).

3.3 Place of High Visual Value

At the proposed pier landing point, the area of soft landscape features such as shrubs and grasses being removed by the construction works is about 25 m². Therefore, the impact on the visual value of the existing site and its vicinity is low.

3.4 Marine Traffic

The Kaito ferry service provider, Tsui Wah Ferry Service (H.K.) Ltd., is operating a “kaito” ferry service the “Ma Liu Shui – Tap Mun” via Sham Chung. The existing Sham Chung Public Pier serves for embarking and disembarking of passengers and will be maintained until commissioning of the proposed pier.

3.5 Town Planning

The proposed site is at present not covered by any statutory town plan.

3.6 Others

There is no residential development, temporary housing area, educational institution, health care facility, place of worship, agricultural area, marine park/reserve, gazetted beach or wild animal protection area in the vicinity of the proposed site. The closest fish cultural zone is Yung Shue Au Fish Culture Zone which is situated at 1350 m to the south of the proposed site. As no dredging and spoil dumping will be involved, the impact on water quality of the fish culture zone is considered insignificant. In addition, the Sham Chung Coast SSSI, which is designated as SSSI of geological interest, is located at about 350 m to the north of the proposed site. In view of its nature and remoteness from the proposed site, the construction works should not cause any impacts on this SSSI.

In conclusion, Sai Kung West Country Park is mainly the sensitive receiver in the close vicinity. Sham Chung Village which is about 750 m away is considered not a sensitive receiver.

4. Possible Impacts on the Environment

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

(A) Short Term Impact During Construction

4.1 Ecology

4.1.1 CED has carried out the diving inspection on the underwater and coastal species and habitats. The report indicates that only groups of mussels, barnacles, urchins, starfish and tubeworm were found on seabed or between boulders/rocks. Some sea anemones and sea squirts were identified but no living corals were discovered. No dredging and spoil dumping will be involved in this project. Given the nature and small scale of this project, together with the implementation of mitigation measures such as installation of silt curtain, no adverse impacts on marine ecology are anticipated.

4.1.2 As the new pier is a replacement to the existing one which will be demolished upon completion of the replacement pier, the net loss of natural coastal area is insignificant. The proposed pier will take the form of a piled deck structure and dredging is not necessary. Therefore, the impact on the benthic ecology is considered minimal.

4.1.3 Clearance of vegetation of about 25 m² at the proposed pier landing point will be required. Vegetation includes shrubs and grasses. These species of shrub and grass are typical in the area and present in large numbers in Hong Kong. The diversity is considered low and no rare tree species were identified. Therefore, the vegetation habitats within the works site are generally evaluated as of low ecological value.

4.2 Water Quality

4.2.1 As no dredging and spoil dumping will be involved and the whole structure is supported on piles driven into the seabed, the disturbance to the seabed will be minimal and turbidity of water will not be increased significantly.

4.2.2 As pile foundation will be adopted, water circulation under the pier will not be impeded.

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4.3 Noise

4.3.1 The new pier is designed to be supported by piles. Pre-bored H-piles which are not percussive will be used. According to our experience in the reconstruction of Hei Ling Chau and Kadoorie Piers, the noise emitted during piling works is very low.

4.3.2 The existing pier will be cut into several segments and then delivered to designated site(s) for deployment as artificial reefs. In view of the small scale of demolition works, the process will not generate significant noise problem.

4.4 Air Quality

4.4.1 Dust problem is expected to be minimal since no dredging and spoil dumping will be involved. During demolition of the existing pier, small amount of dust will be generated. As the demolished pier structure will be deployed as artificial reefs, it will be broken up into large pieces and the amount of dust generated will be minimal.

4.4.2 The emitted exhaust gas from construction plant is also expected to be minimal as small number of construction plant will be deployed on site.

4.5 Traffic Impacts

4.5.1 Marine Traffic

The impact on the marine traffic is considered insignificant because the number of plant involved (about 2 working barges) will be relatively small for project of this scale. Licensed ferry operator Tsui Wah Ferry (H.K.) Ltd. does not have the exclusive right to use the pier for operating licensed ferry service and the public is free to use the pier.

4.5.2 Land Traffic

There is no public road in the vicinity of the proposed works site. The impact on land traffic is considered insignificant because most of the works will be carried out at the sea area.

4.6 Visual Appearance

The works will not cause severe visual impacts. To minimize disturbances to the pier users during holidays, no works will be carried out on Sundays and during General Holidays.

Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po Project Profile

4.7 Cultural Heritage

No archaeological antiquities are expected within the site. If any antiquities are discovered in the course of the construction works, LCSD will be informed promptly.

4.8 Solid Waste

As most of the demolished structures will be used as artificial reefs, they will be delivered to appropriate deployment site(s) as directed by Director of Agriculture, Fisheries and Conservation (DAFC). Other unwanted debris will be removed off site promptly. Therefore, there will not be significant impact due to solid waste.

4.9 Spoil Water

Any spoil water generated is required to be filtered before discharge. Direct discharge of spoil water into the sea will not be permitted.

4.10 Odour

As no dredging is involved, no odour problem is expected.

4.11 Dangerous Goods

No dangerous goods or material is involved.

(B) Long Term Impact During Operation

There is no long term impact since the new pier is a replacement of the existing pier, with similar size and type. However, a new roof will be provided over the pier for shelter and shade purposes. An architectural consultant will be employed to give advice on the landscape design, colour scheme, finishes and texture of materials used so as to ensure that, the reconstructed pier will be compatible with the natural landscape setting. The following key areas will be examined in details:

- Visual compatibility with surroundings
- Landscape and visual quality
- Visual obstruction
- Glaring problem such as direct or reflected sunlight or man-made light source

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

5.1 Measures to Minimize Environmental Impacts

From Section 4, it is concluded that the impacts on water quality, noise, air quality, traffic and visual appearance arising from the project are minimal. In view of the insignificant impacts, standard environmental mitigation measures in accordance with the latest version of “Recommended Pollution Control Clauses for Construction Contracts” will be adopted. In particular, the following measures will be carried out in addition to the standard measures.

5.1.1 Water Quality

It is expected that there is no noticeable impact on water quality during construction. A silt curtain will be installed prior to commencement of marine works, including piling for the new pier and demolition of the existing pier within the site. The areas around the marine works will be completely enclosed by the silt curtain.

In addition, baseline water quality monitoring will be carried out before commencement of the marine works to obtain baseline information for subsequent impact monitoring. Regular and frequent water quality monitoring will be carried out throughout the whole construction period to ensure that the potential water quality impacts arising from piling works will be within the established environmental guidelines and standards. A specialist will be employed for carrying out the water quality monitoring work and his appointment will be agreed with the Director of Environmental Protection (DEP) prior to the commencement of the baseline monitoring.

In the unlikely event that adverse impacts do occur, an event contingency plan will be implemented.

Details of the environmental monitoring and audit (EM&A) programme will be submitted to DEP for approval before application for an environmental permit.

5.1.2 Noise

The non-percussive piling operation and the demolition works of the existing pier will cause slight noise nuisance. In order to reduce the noise level, mitigation measures such as the use of quieter machinery, proper maintenance of plant and good working practices will be adopted. Since all construction works will be stopped during Sundays or General Holidays, there will not be any impacts on the recreational activities during this period.

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By adopting the noise mitigation measures for non-percussive piling works, exceedance of noise level stated in the Technical Memorandum on EIA Process under the EIA Ordinance will unlikely occur. Even though the anticipated noise level is low, the non-percussive piling operation will be controlled by the license conditions of Construction Noise Permit, if the contractor chooses to apply for one for carrying out works during restricted hours.

5.1.3 Air Quality

Since no dredging and spoil dumping will be involved, dust pollution will not be a major concern. For the small amount of dust arising from the demolition of the existing pier, Air Pollution Control (Construction Dust) Regulation will be followed in order not to cause adverse impacts on the air quality.

5.1.4 Ecology

The detailed design of the pier should minimize the area of vegetation requiring clearance.

Where topsoil and vegetation is stripped during construction, wherever possible, topsoil will be stockpiled. Stockpiled material will be stabilized to prevent sediment generation and re-spread as part of landscaping and rehabilitation of disturbed areas following construction. Exposed soil shall be covered.

As the proposed area of clearance is small and the vegetation is typical in the area and present in large numbers in Hong Kong, the residual impacts of clearance on ecology is considered low.

Although no adverse impacts on marine ecology are anticipated, a silt curtain will still be installed prior to commencement of marine works, including piling for the new pier and demolition of the existing pier within the site. The areas around the marine works will be completely enclosed by the silt curtain.

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5.1.5 Visual Impact

An architectural consultant will be employed to give advice on the design of the roof. The objective is to produce an architectural and aesthetic design of the roof which shall blend in well with the local characteristics and landscape setting. Emphasis will also be put on eco-tourism as far as possible. The design shall examine in detail the key areas as mentioned in Paragraph 4(B) on the long-term visual impact of the pier during operation.

3 sets of detailed architectural design drawings shall be submitted to DEP for approval at least 4 weeks before the commencement of construction of the project.

5.2 Possible Severity, Distribution and Duration of Environmental Effects

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

	Effects	Severity	Distribution	Duration
Ecology	Minimal disturbance to seabed from piling operation	Minimal	Local – near the pier	About 8 months
Water Quality	Minimal disturbance to seabed from piling operation	Minimal	Local – near the pier	About 8 months
Noise	Noise nuisance from non-percussive piling and demolition works	Minimal	Local – near the pier	About 11 months
Air Quality	Dust emission from construction activities	Minimal	Local – near the pier	About 24 months
Solid Waste	Handling and disposal of about 300m ³ of artificial reefs and minimal amount of construction waste	Minimal	Local – near the pier	About 3 months
Visual Appearance	Enhance attractiveness of the local area	Beneficial	Focal point near the pier	Long term (pier operation)

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5.3 Public Consultation

- 5.3.1 To ensure that public opinion could be collected in the planning at an early stage, the local village representatives and the Chairman of Sai Kung North Rural Committee were consulted through Tai Po District Office in July 2003. The public raised no adverse comment on the project. In addition, the Environment and Works Committee of Tai Po District Council was consulted on 11.9.2003 and it supported the project.
- 5.3.2 Through gazetting of the proposed project under the Foreshore and Seabed (Reclamations) Ordinance, the public likely to be affected by the project can express their views which will subsequently be taken into consideration during the detailed design stage.
- 5.3.3 As the proposed site falls partly within the Sai Kung West Country Park, the approval of the Country and Marine Parks Authority of the project will be sought in due course.
- 5.3.4 Minimal public interest and political sensitivity are expected.

5.4 History of Similar Project

For the reconstruction of Pak Sha Wan Public Pier, Sai Kung (CED Contract No. CV/99/13), direct application for an environmental permit was approved by DEP in 1999. It was a designated project because of the presence of a conservation area on land within 500m of the site. The project, which involved dredging in addition to piling works, implemented environmental protection measures similar to those proposed in Section 5.1 above. The public pier was completed successfully with minimal environmental impacts.

Under CED Contract No. CV/2000/04 – “Reconstruction of Tai Lam Chung Pier, Hei Ling Chau Pier and Kadoorie Pier”, the piers at Hei Ling Chau and Kadoorie, being suspended deck piers sitting on piles, have structural forms similar to that proposed for this project. Water quality monitoring and EM&A measures, similar to those proposed in Section 5.1.1, were implemented. There was no adverse impact on water quality and no complaint concerning water quality was lodged throughout the whole construction period.

6. Use of Previously Approved EIA Reports

As there has been no designated project undertaken in the vicinity, no previously approved EIA report can be used.

7. Conclusion

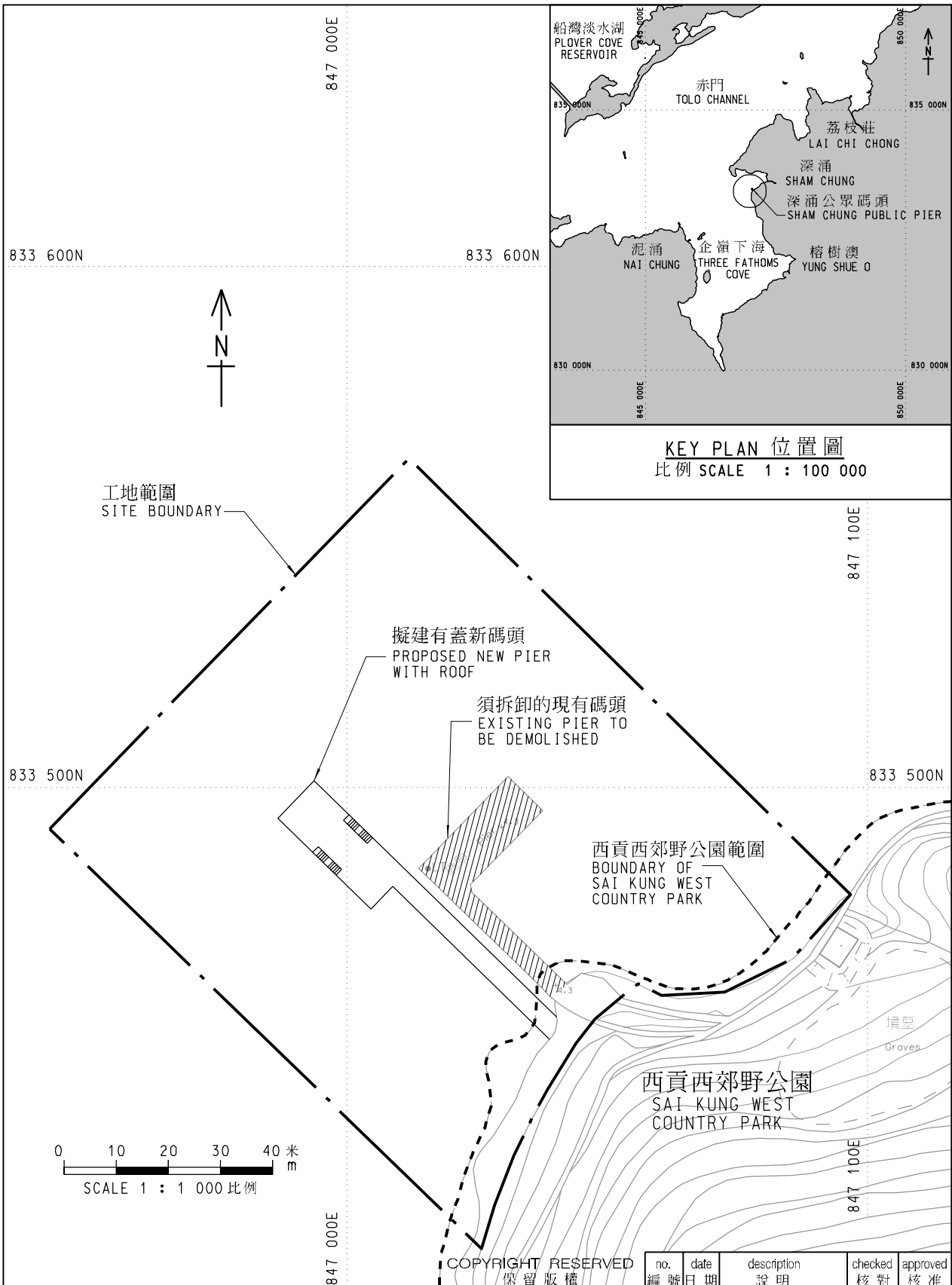
- (1) Ecological, water quality, noise, air quality, traffic, visual, cultural heritage and solid waste impacts arising from the project are minimal.
- (2) The following mitigation measures will be incorporated into the project:
 - (a) implementation of standard mitigation measures in respect of noise, air quality and ecology;
 - (b) installation of a silt curtain around the working area;
 - (c) monitoring of water quality around the site;
 - (d) implementation of environmental monitoring and audit programme; and
 - (e) the roof design will be carried out by an architectural consultant and the design will be subject to DEP's approval.
- (3) As the environmental impact arising from the project will be minimal, direct application for an environmental permit under EIA Ordinance will be adopted.

**Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po
Project Profile**

Appendix A

Drawing No. TS 2227

- General Layout



title 名稱
 深涌公眾碼頭重建工程
 - 總平面圖
 RECONSTRUCTION OF
 SHAM CHUNG PUBLIC
 PIER-GENERAL LAYOUT

	name 姓名	initial 簡簽	date 日期
designed 設計	C P WONG	SIGNED	26.8.2003
drawn 繪畫	K L CHAN	SIGNED	26.8.2003
checked 核對	W L CHAN	SIGNED	26.8.2003
approved 核准	N P TONG	SIGNED	26.8.2003

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

no. 編號	date 日期	description 說明	checked 核對	approved 核准

drawing no. 圖則編號
TS 2227
 scale 比例
 1:1000

CIVIL ENGINEERING DEPARTMENT HONG KONG
 香港土木工程署

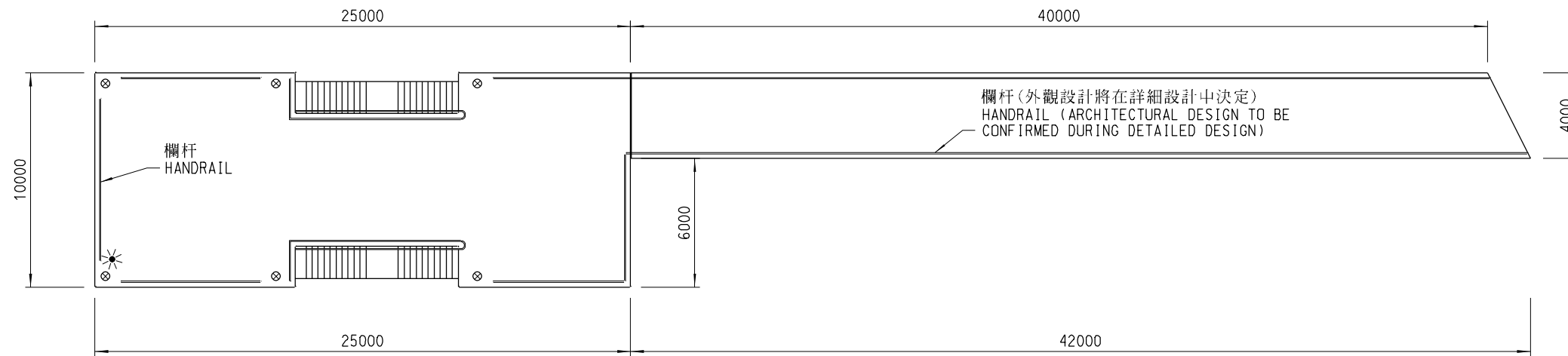
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**Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po
Project Profile**

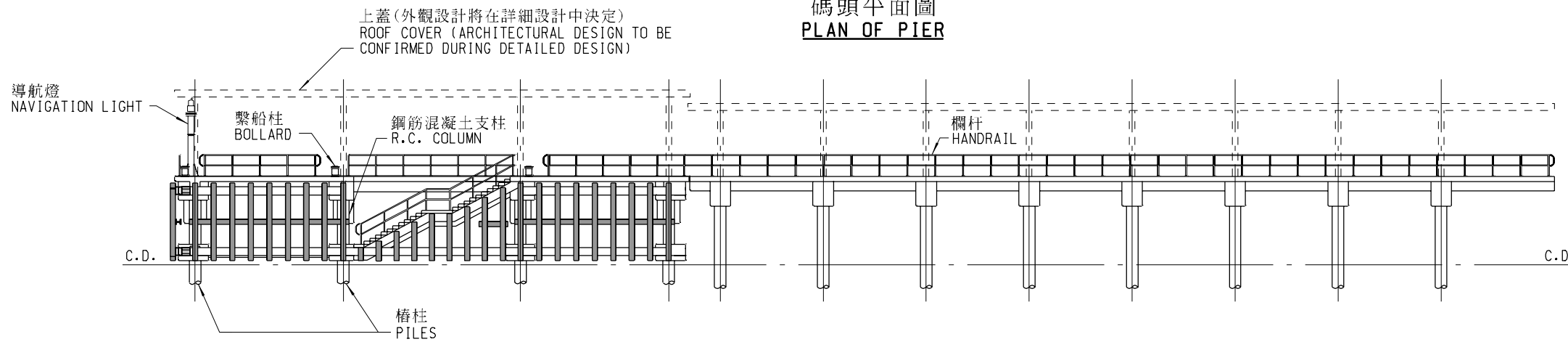
Appendix B

Drawing No. TS 2221

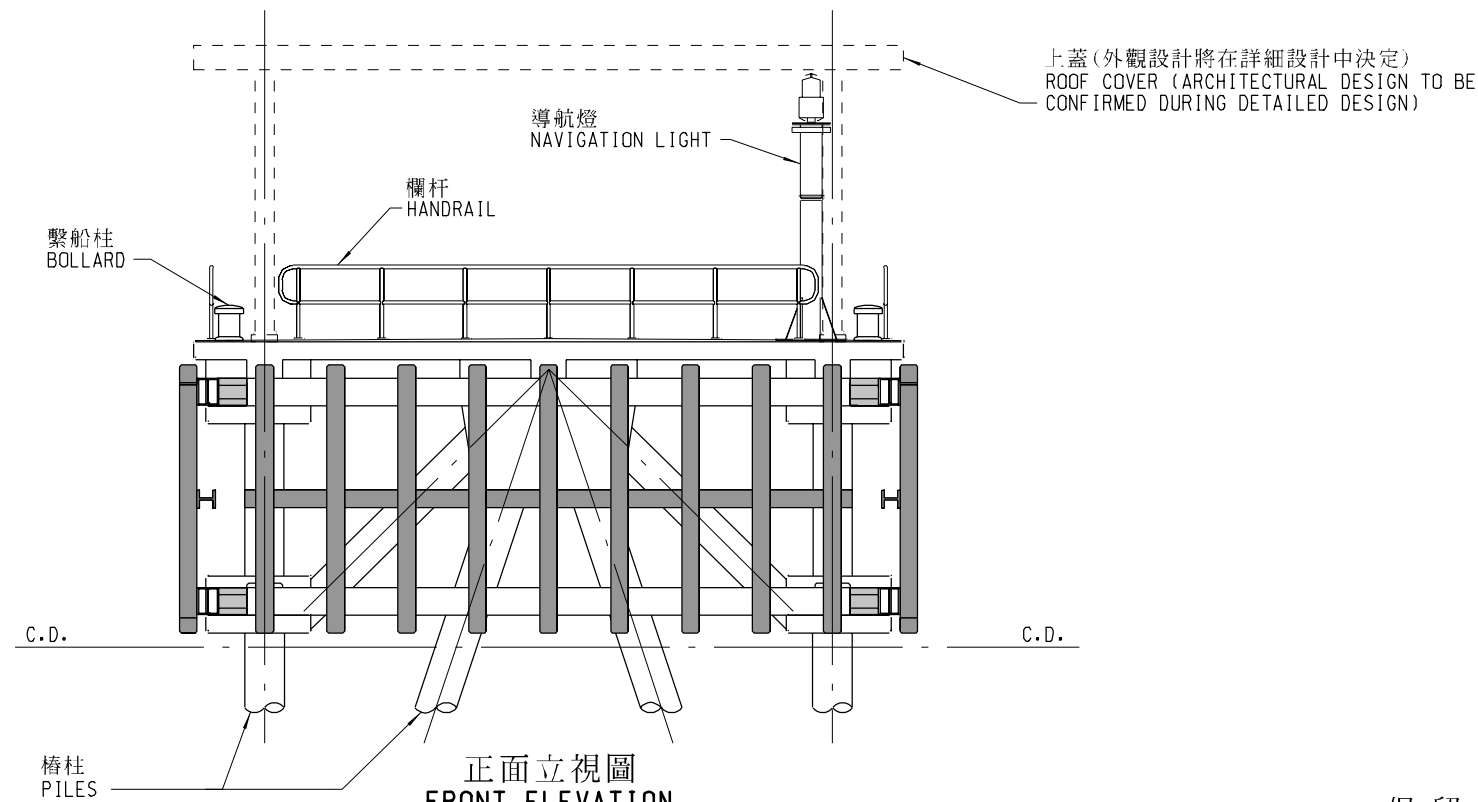
- General Arrangement of New Pier



碼頭平面圖
PLAN OF PIER



側面立視圖
SIDE ELEVATION



正面立視圖
FRONT ELEVATION

比例 SCALE 1 : 100

注釋
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES. 所有尺寸均以毫米標示。
2. ALL LEVELS REFER TO CHART DATUM (C.D.) AND ARE IN MILLIMETRES. 所有高程均根據海圖基準面 (C.D.), 以毫米標示。
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:

- ⊗ 繫船柱
BOLLARD
- ✱ 導航燈
NAVIGATION LIGHT

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	C P WONG	SIGNED	6.11.03
繪畫 drawn	P K CHEN	SIGNED	6.11.03
摹描 traced	P K CHEN	SIGNED	6.11.03
核對 checked	W L CHAN	SIGNED	6.11.03

核准
approved

SIGNED
(N P TONG)
總工程師
Chief Engineer
日期
date : 6.11.03

合約編號
contract no. -

檔案編號
file no. -

工程編號
project no. -

合約
contract

名稱
drawing title

深涌公眾碼頭重建工程 -
新碼頭概略設計圖
RECONSTRUCTION OF SHAM
CHUNG PUBLIC PIER - GENERAL
ARRANGEMENT OF NEW PIER

圖則編號 drawing no.	比例 scale
TS 2221	1 : 250 OR AS SHOWN

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

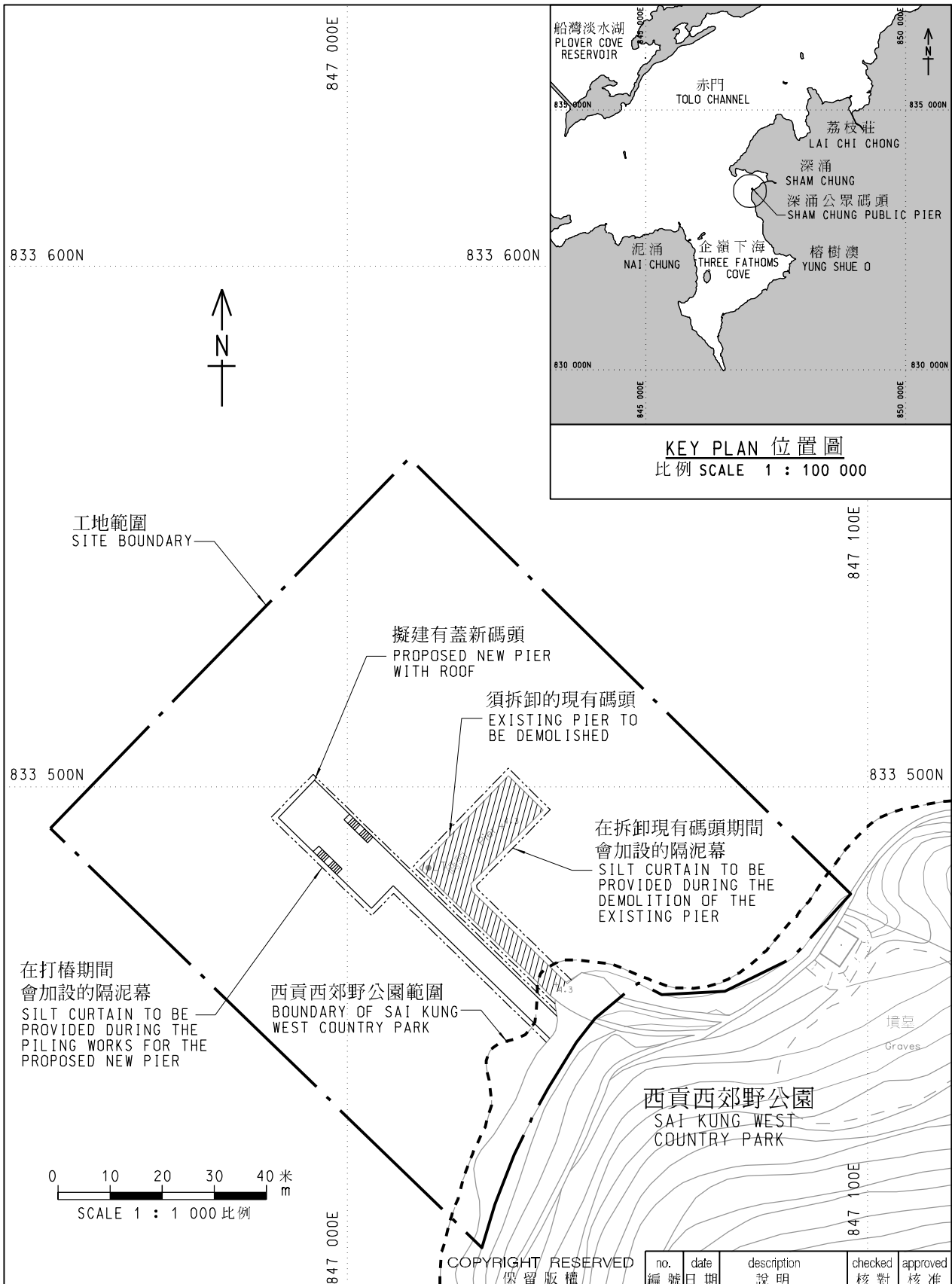
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**Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po
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Appendix C

Drawing No. TS 2225

- Proposed Silt Curtain



KEY PLAN 位置圖
比例 SCALE 1 : 100 000

0 10 20 30 40 米
SCALE 1 : 1 000 比例

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no. 編號	date 日期	description 說明	checked 核對	approved 核准
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title 名稱
深涌公眾碼頭重建工程
- 擬議隔泥幕
RECONSTRUCTION OF
SHAM CHUNG PUBLIC
PIER-PROPOSED
SILT CURTAIN

	name 姓名	initial 簡簽	date 日期
designed 設計	C P WONG	SIGNED	6.11.2003
drawn 繪畫	P K CHEN	SIGNED	6.11.2003
checked 核對	W L CHAN	SIGNED	6.11.2003
approved 核准	N P TONG	SIGNED	6.11.2003

drawing no. 圖則編號
TS 2225
scale 比例
1:1000

 **CIVIL ENGINEERING DEPARTMENT HONG KONG**
香港土木工程署

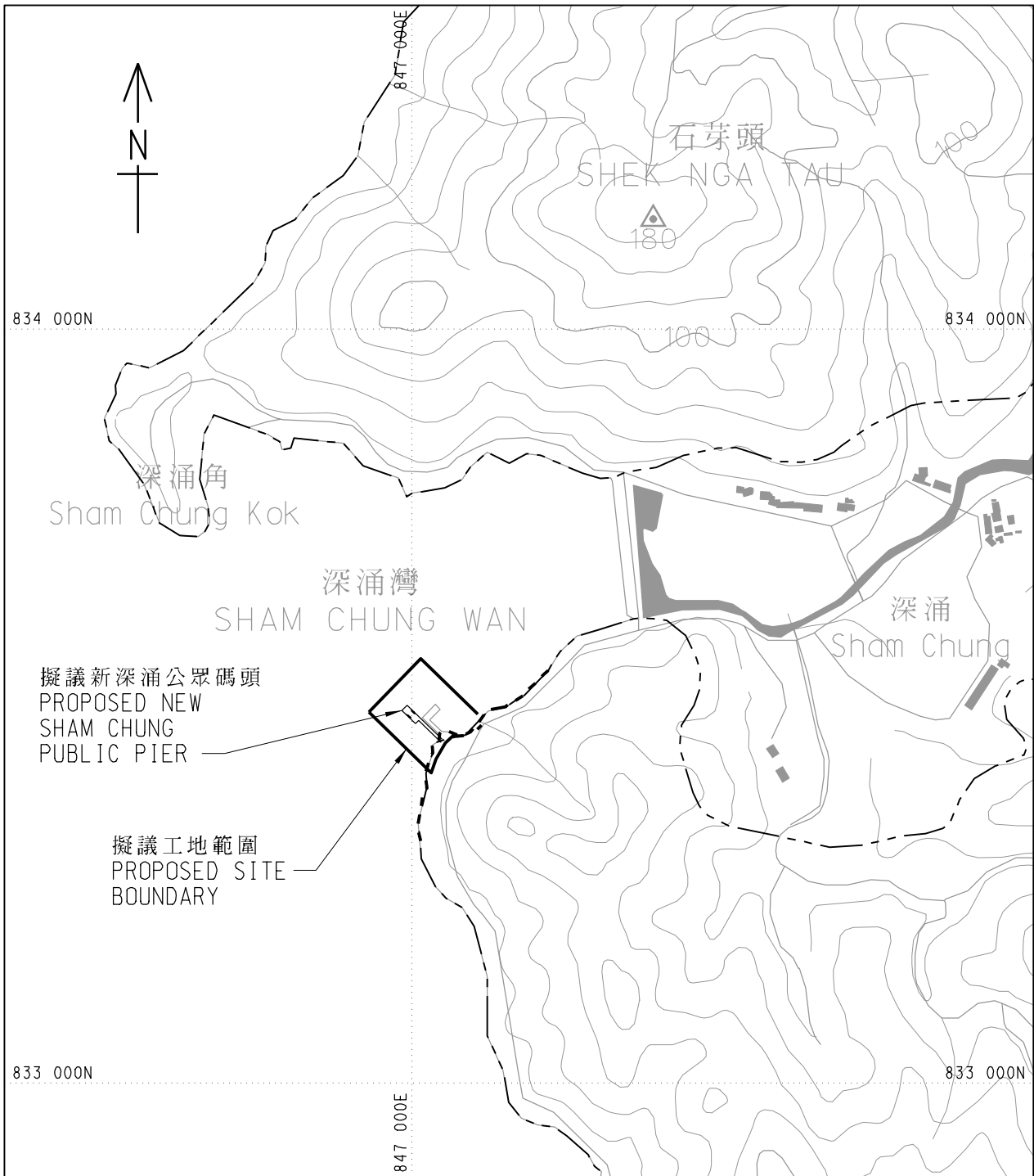
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**Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po
Project Profile**

Appendix D

Drawing No. TS 2222

- Location of Sensitive Receivers



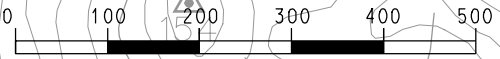
擬議新深涌公眾碼頭
PROPOSED NEW
SHAM CHUNG
PUBLIC PIER

擬議工地範圍
PROPOSED SITE
BOUNDARY

LEGEND 圖例

敏感受體
SENSITIVE RECEIVERS

西貢西郊野公園
SAI KUNG WEST COUNTRY PARK



SCALE 1 : 7 500 比例

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title 名稱
深涌公眾碼頭重建工程
- 敏感受體位置圖
RECONSTRUCTION OF
SHAM CHUNG PUBLIC
PIER - LOCATION OF
SENSITIVE RECEIVERS

	name 姓名	initial 簡簽	date 日期
designed 設計	C P WONG	SIGNED	6.11.2003
drawn 繪畫	P K CHEN	SIGNED	6.11.2003
checked 核對	W L CHAN	SIGNED	6.11.2003
approved 核准	N P TONG	SIGNED	6.11.2003

drawing no. 圖則編號 TS 2222	scale 比例 1:7 500
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**Reconstruction of Sham Chung Public Pier, Sai Kung North, Tai Po
Project Profile**

Appendix E

Drawing No. TS 2223A

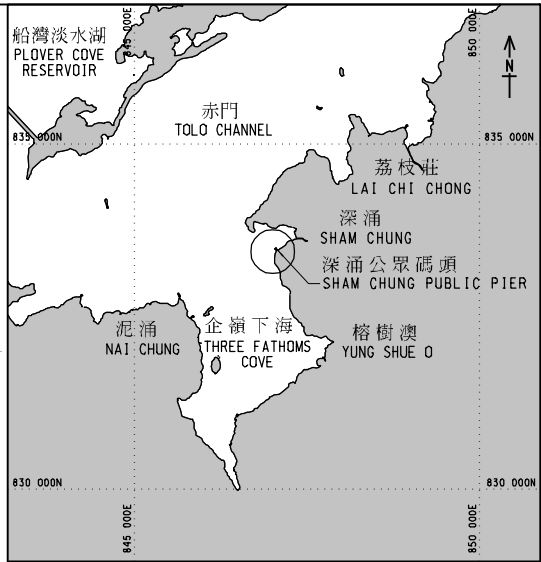
- Diving Inspection Report

檢查結果顯示：

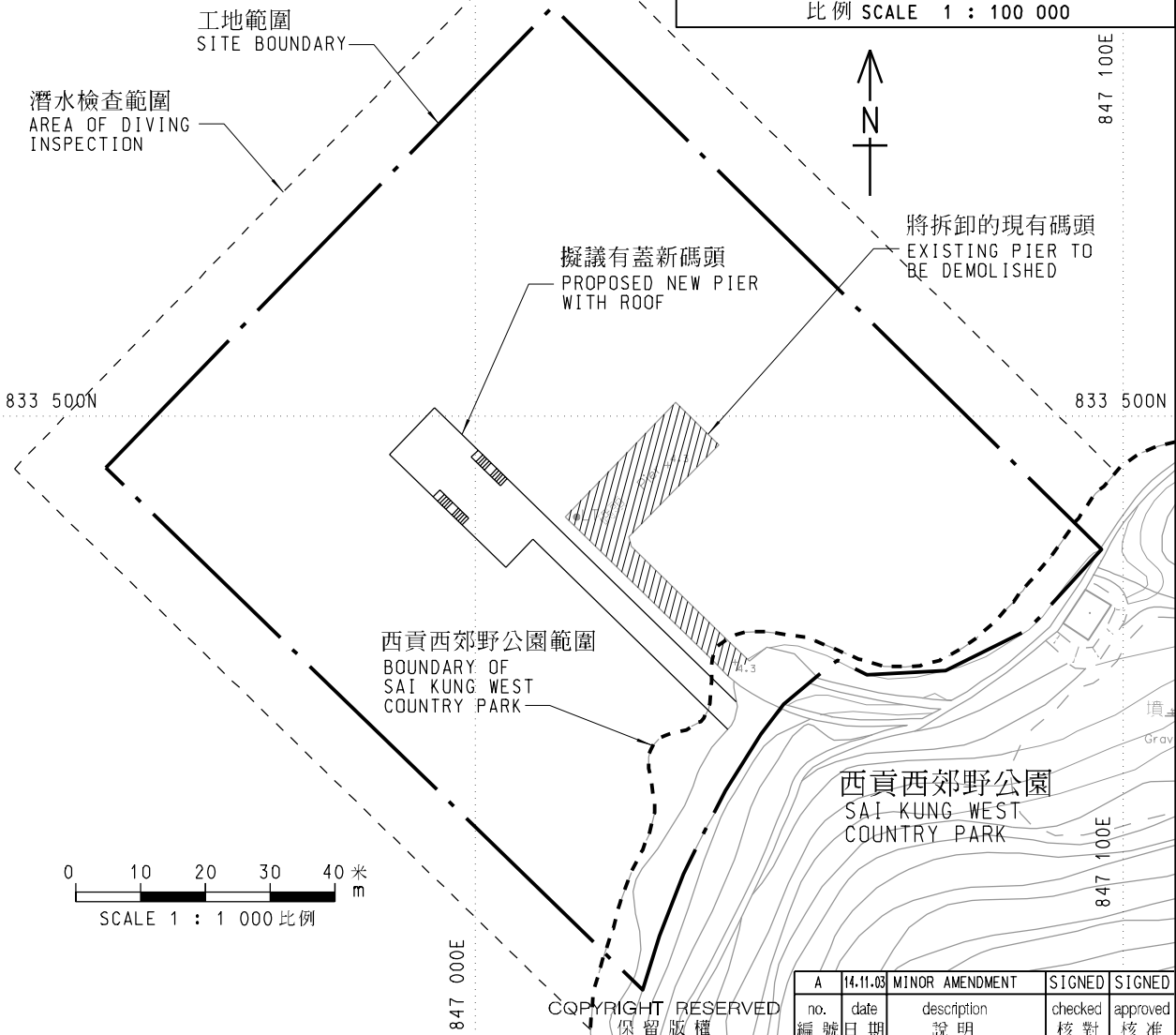
- 一. 海床為海沙/淤泥。
- 二. 貽貝, 藤壺, 海膽, 海星和管蟲群居在海床或礫石/大石間。
- 三. 發現一些海葵和海鞘。
- 四. 沒有發現活珊瑚。

THE INSPECTION REVEALS THAT:

- 1. THE SEABED BOTTOM IS SAND / SILT.
- 2. GROUPS OF MUSSELS, BARNACLES, URCHINS, STARFISH AND TUBEWORM WERE FOUND ON SEABED OR BETWEEN BOULDERS/ROCKS.
- 3. SOME SEA ANEMONES AND SEA SQUIRTS WERE FOUND.
- 4. NO LIVING CORALS WERE FOUND.



KEY PLAN 位置圖
比例 SCALE 1 : 100 000



A	14.11.03	MINOR AMENDMENT	SIGNED	SIGNED
no.	date	description	checked	approved
編號	日期	說明	核對	核准

title 名稱
深涌公眾碼頭重建
工程-潛水檢查報告
RECONSTRUCTION OF
SHAM CHUNG PUBLIC
PIER - DIVING
INSPECTION REPORT

	name 姓名	initial 簡簽	date 日期
designed 設計	C P WONG	SIGNED	6.11.2003
drawn 繪畫	P K CHEN	SIGNED	6.11.2003
checked 核對	W L CHAN	SIGNED	6.11.2003
approved 核准	N P TONG	SIGNED	6.11.2003

drawing no. 圖則編號
TS 2223A
scale 比例
1:1 000

office 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