

PROJECT PROFILE

BASIC INFORMATION

Project Title

RPIS Minor Rural Improvement Works package 3,
Construction of Pier at Angler's Beach, Sham Tseng
Project ID Code: TW-032

Purpose and nature of the project

The objective of the project is to construct a pier to replace the public pier at Angler's Beach and provide landing facilities to cater for large Kaitos.

Name of Proponent

Home Affairs Department
Rural Planning and Improvement Strategy Section
4/F, Centre Point Commercial Building
181-185 Gloucester Road,
Wanchai
Hong Kong

Location, scale of project and history/status of the site

This site boundary is 100-150m away from a gazetted beach, Angler's Beach, adjacent to the Castle Peak Road which is currently closed to swimmers due to poor water quality resulting from high bacterial counts. Water quality in the area has been consistently bad in the area over the last five years with beaches registering as poor or very poor quality.

The location of the site is shown in Drawing 2, and site boundary in Drawing 1. It is proposed to construct a walkway 50m long and 3.4m wide together with a 320m² landing platform. A footpath leading from the existing pier to the new pier will also be constructed. These facilities will be used to accommodate large Kaitos. The cross-sectional views of the proposed pier are shown in Drawing 3. The works site area is approximately 7750m² with 4450m² of seabed marked for dredging of the foundation base. Dredging will be carried out to a maximum depth of -7.8mPD with approximately 23,500m³ of material being removed.

Number and Types of designated projects to be covered by the project profile

1 project under section C.12 (a) iii) of schedule 2, Environmental Impact Assessment Ordinance and the application is pursuant to 5(11) of the EIA Ordinance for the purpose of applying for a Construction Permit directly.

Name and telephone number of contact person(s)

OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

How will the project be planned and implemented

The Consultants (Mouchel Asia Limited) will design the project. The construction works will be planned and implemented by the Contractor.

What is the project time table

Construction is expected to commence in May 1999. The contract period will be 12 months, ending in April 2000. The Contractor will schedule the work to his own requirements. However, each construction phase will generally take the following periods to complete:

- Dredging - 10 weeks;
- Laying of pier foundations - 10 weeks;
- Pier construction - 24 weeks and
- Finishing works - 6 weeks.

There will then be a 6 months maintenance period.

Are there any interactions with broader programme requirements or other projects that shall be considered.

The proposed pier is intended to be a temporary area to provide landing facilities to cater for large Kaitos. This site area has been designated for reclamation by CED in the long term.

MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

Outline existing and planned sensitive receivers and sensitive parts of the natural environment which might be affected by the proposed project

Water Quality:-

The study area is within the Western Buffer Water Control Zone. Background marine water quality of the specific project area is not available. However, data is available for a comparable location on the eastern side of Ma Wan¹ (Monitoring Station WM4). Dissolved Oxygen and *E. coli* in 1995 were both within the Water Quality Objectives. However, the study area is close to a nullah which may be a source of pollution. The Angler's Beach, which is very close to the site, approximately 100-150m, displaying high levels of *E. coli*², indicating sewage pollution. Therefore, it is likely that water quality within the site boundary will be lower than that measured at WM4.

Noise: -

Noise sensitive receivers in the vicinity to the site boundary are shown in Drawing 1, the closest being 75 metres away. Background noise is generally high, being influenced by the busy Castle Peak Road, marine traffic and construction work being carried at the old San Miguel site to the East of the proposed site.

Ecology: -

No gazetted areas of conservation interest have been identified for the area.

This area is likely to contain soft muds and sands in the sea bed, thus, typical benthic fauna communities are expected in low diversity and abundance due to the polluted water quality. The water is estuarine in nature, thus, no coral community is anticipated.

POSSIBLE IMPACTS ON THE ENVIRONMENT

Outline any processes involved, including process flow diagrams, site plans, storage requirements and information on emissions and discharges

Initially dredging will be carried out to reach a suitable foundation base for the pier to a maximum depth of -7.8mPD with approximately 23,500m³ of material being removed. It will be specified in the Contract that dredging rate will be no more than 40 m³/hr. A geotechnical borehole survey has shown that the sediment in the area, from ground level to a depth of -7.8mPD, ranges from fine to coarse sand with shell fragments and fine quartz gravel as shown in Drawings 4a, 4b and 4c. (Borehole testing locations are shown as BH1 and BH2 in Drawing 1) Thus, the dredged material is expected to precipitate rapidly and as the material does not constitute contaminated mud, no special handling or disposal is required.

Following the foundations laying, precast concrete blocks will be placed to form the pier. Fittings will then be attached to the pier. Storage and works areas will be contained within the site boundary. Details of the site boundary and works are shown in Drawing 1. The cross-sectional views of the proposed pier are shown in Drawing 3.

¹ EPD (1995) *Marine Water Quality in Hong Kong*

² Environmental Protection Department (1997) *Bacteriological Water Quality of Bathing Beaches in Hong Kong*

Describe the environmental impacts or issues that arise during the construction, operation or decommissioning of the project, where applicable

During Construction

Water Quality :-

The works will be carried out some 100-150m from Angler's Beach which is a gazetted bathing beach. Dredging may create a plume of suspended solids around the works area. However, it is likely that suspended solids generated will be low due to the nature of the dredged material, as indicated by the borehole logs provided in Drawings 4a, 4b and 4c and the specified dredging rate. Also, the dredged material does not constitute potentially contaminated mud. In addition, Angler's Beach has been closed to swimmers for a number of years due to high counts of the indicator bacteria *Escherichia. coli*².

Noise:-

The construction equipment is not anticipated to work simultaneously and the predicted noise levels at the closest sensitive receivers 75m away will be as follows:-

		Predicted Noise Levels
Dredging -	Dredger :	69dB(A)
Laying Seawall Block-	Excavator :	69dB(A)
	Derrick barge :	61dB(A)

Dredging of marine deposits for the new pier foundations, using powered mechanical equipment (a small grab dredger) will generate noise but noise levels are not anticipated to exceed the daytime construction noise guideline of 75dB(A) at any of the sensitive receivers, as shown in the above noise impact assessment. Notwithstanding this, standard noise pollution control clauses will be included in the Contract.

Other construction activities, such as provision of navigation lighting facilities, bollards, fendering system and repair of the access tracks, as well as the reconstruction works are also not anticipated to cause adverse noise impacts.

Ecology:-

Destruction of a relatively small area of sea bed and disturbance to sea bed fauna is anticipated from dredging works. Although the loss of a small area of the sea bed will be permanent, new ecological niches will be available for recolonisation on and around the new pier.

The sea bed in this area is composed of soft muds and sands and therefore likely to contain communities typical of the benthic sediments occurring in the waters between Lantau Island and the North West New Territories. Due to the estuarine nature of these waters, no coral species are likely to be present. Therefore the small loss of the benthic habitat is likely to be of low significance in terms of nature conservation value.

Waste Management:-

It has been confirmed by a geotechnical borehole survey that the material to be dredged is sandy in nature and therefore the 23,500m³ of dredged sediment to be removed will be non-contaminated. Thus, no marine mud disposal nor dumping permit will be required.

During Operation

No major or significant impacts are expected in this phase.

ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED

Describe measures to minimize environmental impacts

Noise:-

Based on the above quantitative assessment of construction noise impacts, noise mitigation measures are not anticipated as being required. However, procedures for dealing with any complaints should be put in place. Also, the standard noise pollution control clauses will be included in the construction Contract.

Water Quality:-

Dredging operations will be carried out outside bathing season, at an approximate rate of no more than 40 m³/hr and in such a way as to minimise the release of suspended solids into the marine environment.

Despite the anticipated rapid precipitation of the coarse dredged material, the Contractor will adopt the use of a silt curtain which will fully confine the dredging operations. This should be adequate to screen the surrounding area from elevated suspended solids generated by dredging. Also, the Contractor will use a grab capable of taking contained buckets of sediments without leakage, for the deviation of the dredging works.

Careful on-site practice should be strictly implemented especially in the areas where dredging activities are required.

Sea Bed Ecology:-

Dredging work should be confined to the Work Boundary only in order to avoid any unnecessary disturbance to the sea bed fauna.

Requirements for mitigation works will be written into the construction contract in accordance with the requirements of the Environmental Guidance Notes for RPIS Minor Projects (EPD 1997).

Comment on the possible severity, distribution and duration of environmental effects

Any environmental impacts are not expected to be severe, widespread or last for any extended period. The construction period for the contract is 12 month, although dredging activities are only anticipated to last for 10 weeks. Other activities will not affect water quality.

Dredging may generate a localised impact during the construction phase, but this operation will be relatively short lived and water quality levels will recover immediately on completion of the dredging. Construction will result in the permanent loss of a small area of benthic habitat and gross temporal disturbance to the benthic communities surrounding the new pier. However, these impacts are relatively small in magnitude and will likely not damage any sensitive or important communities as benthic fauna diversity is expected to be low. Recovery of the dredged areas will be relatively rapid and the new pier will possibly encourage greater species diversity.

Use of EPD publication

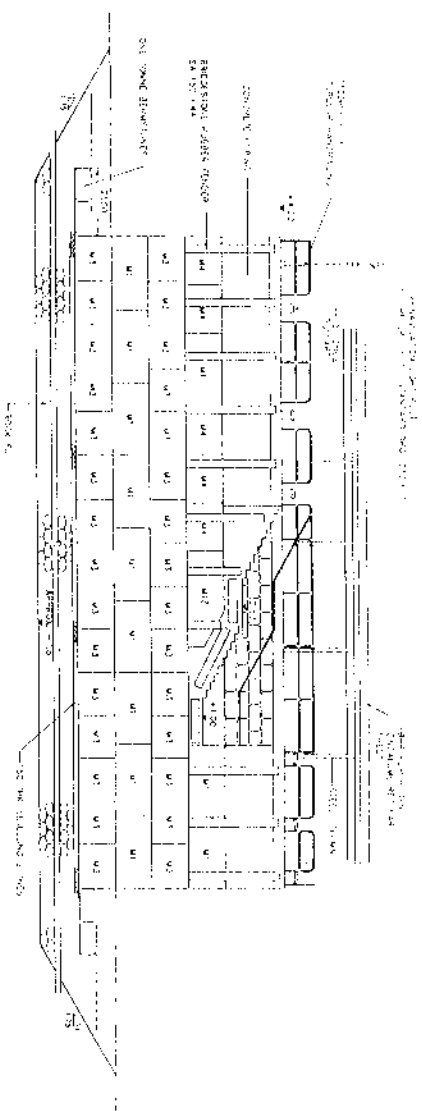
1. Marine Water Quality in Hong Kong, *Environmental Protection Department*, 1995
2. Bacteriological Water Quality of Bathing Beaches in Hong Kong, *Environmental Protection Department*, 1997

Use of previously approved EIA reports

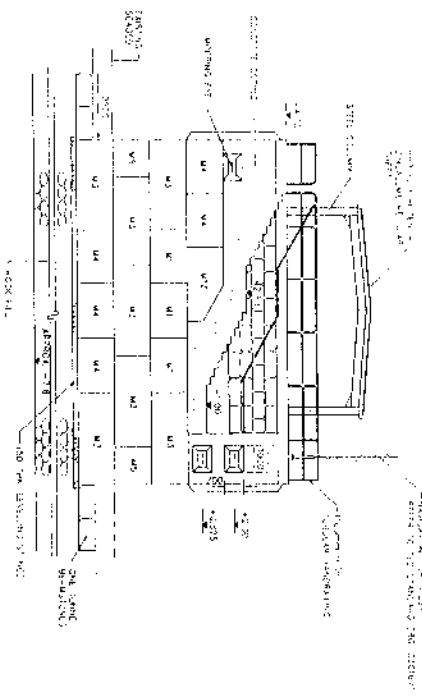
n/a

Comment on any further implications

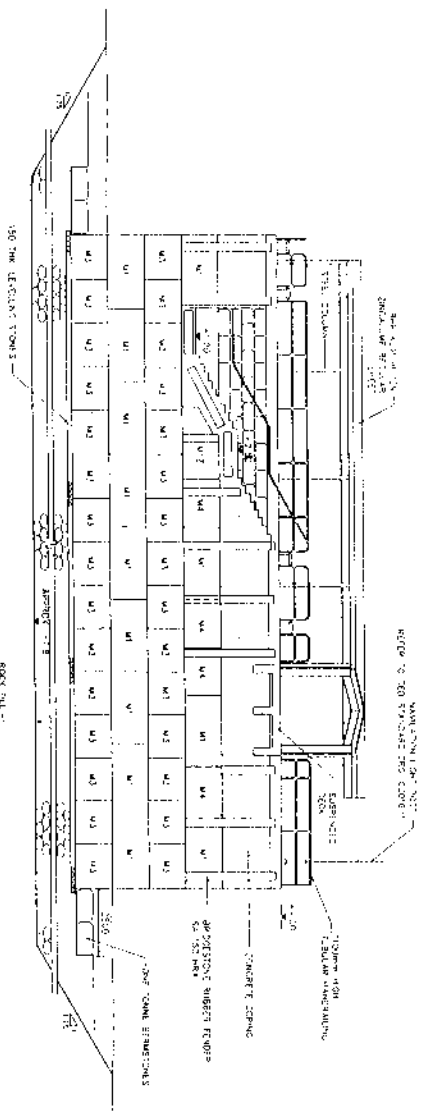
None.



VIEW A
SCALE: 1:50



VIEW C
SCALE: 1:50



VIEW B
SCALE: 1:50

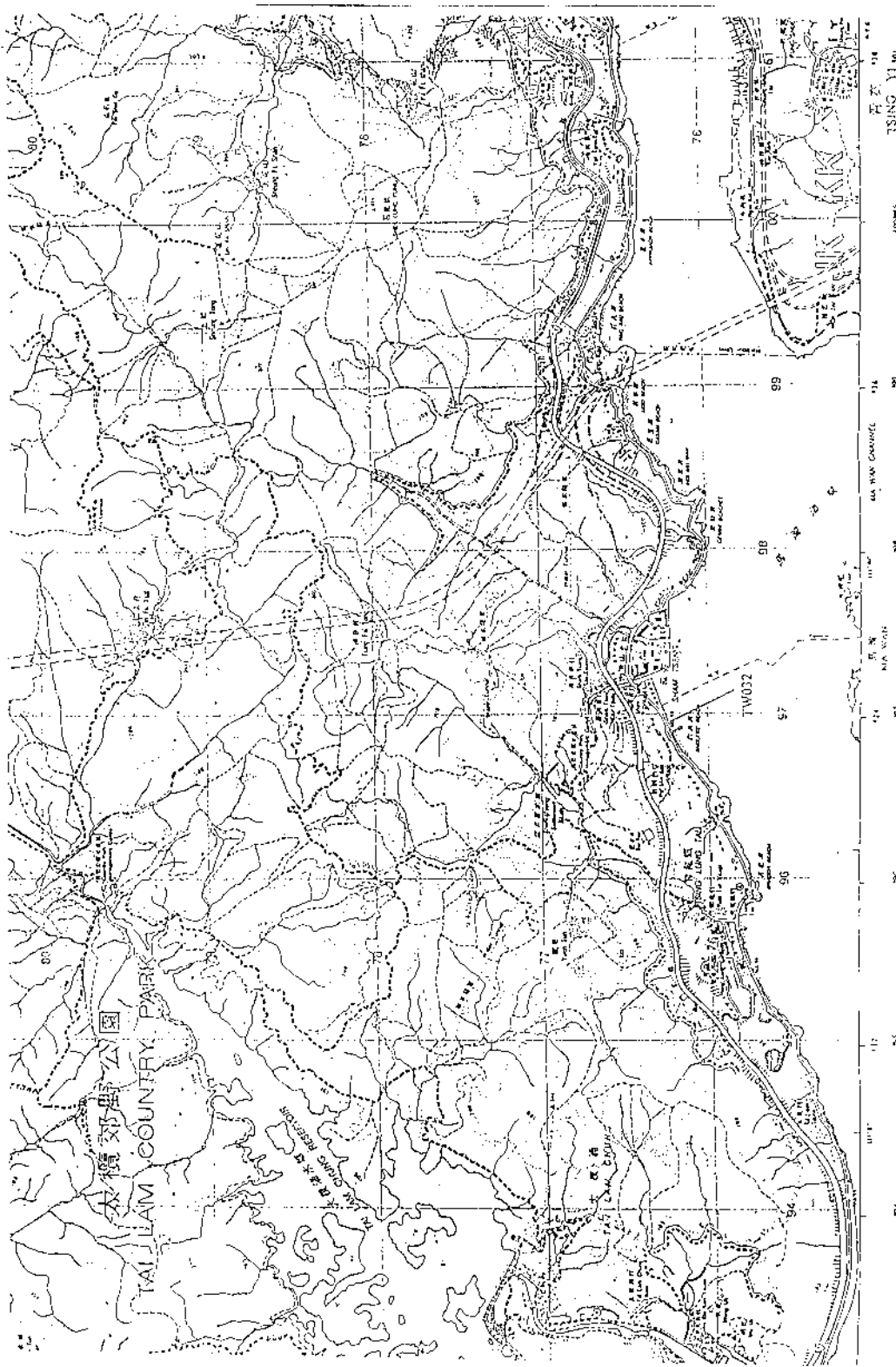
NOTES
1. All dimensions are in meters unless otherwise stated.
2. The drawing and its contents are the property of Mouchel.
3. It shall not be used for any other project without the written consent of Mouchel.
4. The drawing is a preliminary design and is subject to change without notice.

Rural Planning & Improvement Strategy
Home Affairs Department
The Government of the Hong Kong Special Administrative Region
RIPIS MINOR RURAL IMPROVEMENT WORKS PACKAGE 3
CONSTRUCTION OF PIERS AT ANGLERS BEACH STAIR TISING ARRANGEMENT
PIER SEAWALL BLOCK GENERAL ARRANGEMENT

Mouchel
Mouchel Asia Limited
Consulting Engineers

Project No.	10000000000000000000
Client	Home Affairs Department
Scale	1:50
Date	10/10/2011
Drawn by	AT/10/11
Checked by	AT/10/11
Approved by	AT/10/11

DRAWING 3



Rural Planning & Improvement Strategy
Home Affairs Department
The Government of the Hong Kong Special Administrative Region

RPRS MINOR RURAL IMPROVEMENT WORKS PACKAGE 3

CONSTRUCTION OF PER AT ANGLERS BEACH 30/01/18/03

LOCATION PLAN

Mouchel
Mouchel Asia United
Consulting Engineers

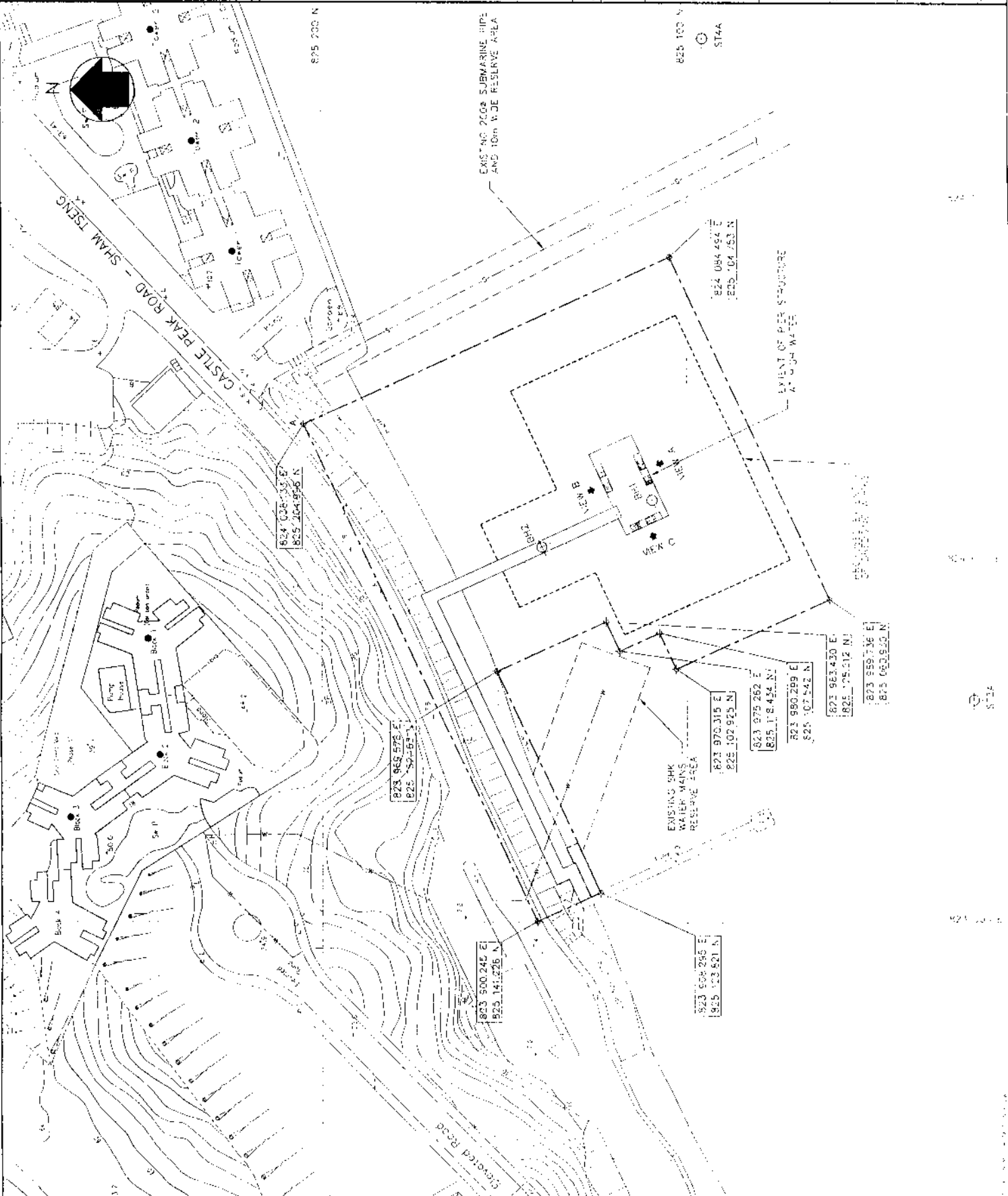
THIS DRAWING IS PART PLAN OF SUPPLY SHEET NO. ESE17/A & ESE17/B

2. CROSS-SECTIONAL VIEW A, B & C OF THE PROPOSED PIER, REFER TO DRAWING NO. 3

LEGEND:

- SITE BOUNDARY
- NOISE SENSITIVE RECEIVERS
- ⊕ BOREHOLE
- ⊙ BHI

Scale: 1:500	Scale: 1:500	Scale: 1:500
Project No.:	Project No.:	Project No.:
Rural Planning & Improvement Strategy		
Home Affairs Department The Government of the Hong Kong Special Administrative Region		
RPIS MINOR RURAL IMPROVEMENT WORKS PACKAGE 3		
TW-082 CONSTRUCTION OF PIER AT ANGLERS BEACH, SHAM TSENG		
NOISE SENSITIVE RECEIVER		
Mouchel Mouchel Asia Limited Consulting Engineers		





DRILLHOLE RECORD

HOLE NO. BH 1

CONTRACT NO. GE/97/17 LG21803/06

SHEET 1 OF 2

PROJECT	RPIS Minor Rural Improvement Works Package 3 Project TW-032 New Pier next to Angler Beach		
METHOD	Rotary	CO-ORDINATES	W.O. NO. GE/97/17.05
MACHINE & NO.	Power Swivel (DM1)	E 824013.94 N 825113.11	DATE: 28/07/98 To 29/07/98
FLUSHING MEDIUM	Seawater	ORIENTATION Vertical	SEABED LEVEL -0.70 mPD

Drilling Progress	Casing Size	Water level/ (m) Shift start/end	TCR%	SCR%	ROC%	FI	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description			
1 2 3 4 5 6 7 8 9 10	Zw	2.40m 07:45	100				27bls (1,2, 2,2,2,4) N=10	1 2 3 4		0.50 1.00 1.40			Loose to medium dense, grey (1 for GLEY 6/1), silty fine to coarse SAND with occasional to some subangular fine gravel sized quartz fragments and occasional shell fragments (MARINE DEPOSIT)			
			100				10bls (1,2, 2,1,2,3) N=6	5 6 7 8 9	-3.20	2.35 2.50			2.35-2.50m: with occasional subrounded coarse gravel sized weak granite fragments			
			100				13bls (1,1, 1,1,2,7) N=6	10 11 12 13 14		4.35 4.50 5.00 5.40			Loose, greenish grey (1 for GLEY 5/1), slightly clayey silty fine to coarse SAND with occasional subangular fine gravel sized quartz fragments and occasional shell fragments (MARINE DEPOSIT)			
			100				22bls 15,31, 100 760mm	15 16 17 18 19 20		6.35 6.50 7.00 7.20 7.36 7.63 7.80			Grey (1 for GLEY 7/1), silty fine to coarse SAND with some subangular fine gravel sized quartz fragments and many coral fragments (MARINE DEPOSIT)			
			85	0	0	NI					-8.06	7.36		IV/IV	Extremely weak to very weak, yellowish brown spotted dark green, completely to highly decomposed medium grained GRANITE (Slightly silty sandy fine to coarse GRAVEL sized weak rock fragments)	
			95	34	34	>20					-8.50	7.80		IV/III	Weak to moderately weak, pinkish grey stained brown, highly to moderately decomposed medium grained GRANITE, highly fractured	
			99	95	95	7.9						8.37			III/II	Moderately strong, pinkish grey spotted green stained brown, moderately decomposed medium grained GRANITE with closely spaced rough planar and undulating limonite stained joints, dipping at 6°, 35° and 85°

Disturbed Sample	Standard Penetration Test
Piston Sample	In-situ Vane Shear Test
U75 Undisturbed Sample	Permeability Test
U100 Undisturbed Sample	Impression Packer Test
Mastar Sample	Packer Test
SPT Liner Sample	Piezometer Top
Water Sample	Standpipe

LOGGED S.P.Su
DATE 04/08/98
CHECKED M.D.
DATE 05/08/98

REMARKS

lam	DRILLHOLE RECORD		HOLE NO. BH 1
	CONTRACT NO. GE/97/17 LG21803/06		SHEET 2 OF 2
PROJECT	RPIS Minor Rural Improvement Works Package 3 Project TW-032 New Pier next to Angler Beach		
METHOD	Rotary	CO-ORDINATES	W.O. NO. GE/97/17.05
MACHINE & NO.	Power Swivel (DM1)	E 824013.94 N 825113.11	DATE: 28/07/98 To 29/07/98
FLUSHING MEDIUM	Seawater	ORIENTATION Vertical	SEABED LEVEL -0.70 mPD

Drilling Progress	Casing Size	Water level/ (m) Sheet start/end	TCR%	SCR%	RQD%	FI	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11			100	100	94								8.12-9.80m: moderately strong to strong and moderately to slightly decomposed Strong, pinkish grey spotted dark green, slightly decomposed medium grained GRANITE with closely to medium, occasionally very closely spaced rough planar and undulating limonite stained, occasionally clay coated joints, dipping at 5°-20°, 30°-40° and 60°-75°
			100	92	92	5.4					10.79		
			100	71	67	>20					11.16		
12			100	97	75	4.8				11.91			
13													
14		1.80m 18:45 2.40m 07:00 2.00m 14:50	100	74	74	11.3				13.25			
										14.06			End of investigation hole at 14.06m
15													
16													
17													
18													
19													
20													

<ul style="list-style-type: none"> ⊔ Disturbed Sample ⊓ Piston Sample ▨ U76 Undisturbed Sample ▩ U100 Undisturbed Sample ▧ Mazier Sample ⊖ SPT Liner Sample △ Water Sample 	<ul style="list-style-type: none"> ↓ Standard Penetration Test ∨ In-situ Vane Shear Test ⊥ Permeability Test ⊞ Impression Packer Test ⊞ Packer Test ⊞ Piezometer Tip □ Standpipe 	LOGGED <u>S.P.Su</u> DATE <u>04/08/98</u> CHECKED <u>M.D.</u> DATE <u>05/08/98</u>	REMARKS
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Construction of Pier at Angler's Beach, Sham
Tseng- TW-032, Borehole Log

Mouchel
Drawing number 4b



DRILLHOLE RECORD

HOLE NO. BH 2

CONTRACT NO. GE/97/17 LG21803/06

SHEET 1 OF 1

PROJECT RPIS Minor Rural Improvement Works Package 3
Project TW-032 New Pier next to Angler Beach

METHOD Rotary

CO-ORDINATES
E 824004.27
N 825141.89

W.O. NO. GE/97/17.05

MACHINE & NO. Power Swivel (DM1)

DATE: 29/07/98 To 30/07/98

FLUSHING MEDIUM Seawater

ORIENTATION Vertical

SEARCHED LEVEL -0.00 mPD

Drilling Progress	Casing Size	Water level (m) Start/end	TCR%	SCR%	RCD%	FI	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
1	Zw	2.40m 18:30	100				20bls (1,2,1,1,2,1) N=5	1 2 3 4		0.50 1.00 1.40			Loose, grey (1 for GLEY 6/1), silty fine to coarse SAND with some subangular fine gravel sized quartz fragments and some shell fragments (MARINE DEPOSIT) 2.35-2.50m: greenish grey (1 for GLEY 5/1)
2										2.35 2.50			
3		2.00m 18:05	100				29bls 50/55mm 100/35mm	5 6 7 8		-3.30 -3.80 -3.90			Pale yellow (5Y 7/3) silty fine to coarse SAND with some subangular fine to medium gravel sized quartz and rock fragments and occasional shell fragments (MARINE DEPOSIT)
4		2.40m 07:45	100	100	90	10.0							Extremely weak, yellowish brown spotted green, completely decomposed medium grained GRANITE (Slightly silty fine to coarse SAND with occasional fine gravel sized quartz and weak rock fragments)
5			100	100	87	3.3				4.09			Strong, pinkish grey spotted dark green, slightly decomposed medium grained GRANITE with closely to medium, occasionally very closely spaced rough and smooth, planar and undulating limonite stained, chlorite and clay infilled joints, dipping at subhorizontal to 10°, 15°-40° and 80° to subvertical
6			100	91	91					4.76			
7			100	98	93	>20				6.28			3.10-4.52m: moderately strong to strong, stained brown and moderately to slightly decomposed
8			100	96	65					7.42			5.90-6.28m: moderately strong to strong, stained brown and moderately to slightly decomposed
9		DRY 19:00								-8.99			End of investigation hole at 8.19m
10										-8.19			

<ul style="list-style-type: none"> Disturbed Sample Piston Sample U78 Undisturbed Sample U100 Undisturbed Sample Mazer Sample SPT Casing Sample Water Sample 	<ul style="list-style-type: none"> Standard Penetration Test In-situ Vane Shear Test Permeability Test Impression Packer Test Packer Test Piezometer Tip Standpipe 	LOGGED <u>S.P.Su</u> DATE <u>04/08/98</u> CHECKED <u>M.D.</u> DATE <u>05/08/98</u>	REMARKS
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Construction of Pier at Angler's Beach, Sham Tseng- TW-032, Borehole Log

Mouchel

Drawing number 4c