

## PROJECT PROFILE

### Revision 1

**NOTE:** This Project Profile is a replacement of the version advertised on the 12th September 1998. In this version, dredging for the pier and the seawall, pier foundation and some pier and seawall construction works will be entrusted to CED to be undertaken during their maintenance dredging of the fish culture zone. All mariculture in the fish culture zone will be relocated for the duration of this work.

### BASIC INFORMATION

<p><b>Project Title</b></p> <p>RPIS Minor Rural Improvement Works Packages 1&amp;2, Construction of Pier at Luk Chau Tsuen, Lamma Island Project ID Code: IS-085</p>
<p><b>Purpose and nature of the project</b></p> <p>The objective of the project is to construct a pier at the same location of the existing pier to provide berthing and landing facilities for kaitos.</p>
<p><b>Name of Project Proponent</b></p> <p>Home Affairs Department Rural Planning and Improvement Strategy Section 4/F, Centre Point Commercial Building 181-185 Gloucester Road, Wanchai Hong Kong</p>
<p><b>Location and scale of project</b></p> <p>The site boundary is shown in Drawing 1, and location plan in Drawing 2. The scope of works includes the construction of a new pier, after removal of the existing concrete pier, and provision of handrails, a navigation light, bollards and fendering systems on the pier. In addition, a seawall will be constructed which will serve as an access footpath from the pier to the village. The proposed new pier is 5.41m wide and 50m long. The affected area of foreshore and sea bed will be approximately 2000m<sup>2</sup>. Dredging will be carried out to a maximum depth of 3.5m, with a maximum of 2600 m<sup>3</sup> of material being removed during the works.</p>
<p><b>Number and Types of designated projects to be covered by the project profile</b></p> <p>1 project under section C12 (a) v) of schedule 2, Environmental Impact Assessment Ordinance.</p>

**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**

As some works may affected the nearby mariculture, dredging, laying of the pier foundations and some pier and seawall construction will be entrusted to CED to be undertaken during their fish culture zone maintenance dredging during the period of November 1998 to January 1999. Dredging and the pier foundations will take a total of 2-3 weeks to complete and the pier and seawall construction will require approximately 3 weeks.

Finishing works, which will not affect the water quality, will be carried out in 1999 in accordance with the Contractor's programme. The construction works will be followed by a 6 months maintenance period.

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

The site of IS-078 (extension of pier at Lo Tik Wan, North Lamma) is approximately 700m from this project as shown in Drawing 2.

However, CED will carry out maintenance dredging in the vicinity of both pier sites during the period November to January and the dredging works for both the sites will be entrusted to CED to be undertaken during this time.

## **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**

**Planning Areas:-**

The Fish Culture Zone is approximately 36m away from the dredging site.

**Noise:-**

Noise sensitive receivers include approximately 20 properties of Luk Chau Tsuen which are within 60m of the works site. Seven buildings next to the shore are not inhabited (as shown in Drawing 1).

**Marine Water Quality and Aquaculture:-**

Sensitive receivers would normally include the cultivated fish stock located in the Lo Tik Wan Fish Culture Zone, the nearest point of which is 30-40 metres from the site, with the majority of the fish farms being approximately 150-200m from the site. However, construction activities with the potential to affect water quality, namely the dredging and pier foundation laying works, will be undertaken by CED as part of their maintenance dredging during which time the fish cages will be relocated away from the area. In the unlikely event that some marine works are undertaken during a period when the fish culture zone is operational, the works will be undertaken with a silt curtain to minimise any effects.

**Ecology:-**

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

The area of foreshore and sea bed affected will be approximately 2000m<sup>2</sup>. The sea bed and its benthic fauna within the site boundary will be the sensitive receivers. In addition, trees and vegetation located along the shore, while not unusual, are considered to be valuable components of the landscape and of some important to the local ecosystem.

## **POSSIBLE IMPACTS ON THE ENVIRONMENT**

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

The main process will be initial dredging works to prepare suitable bed on which to lay the foundation of the pier. Pre-cast concrete blocks will be laid to form the pier. Once complete, fittings will be attached. See Drawing 1 for site boundary and Drawing 2 for location of the sites.

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

**During Construction**

Noise :-

Dredging of marine deposits for the new pier foundations, using powered mechanical equipment (a small grab dredger) will generate noise and noise levels are anticipated to exceed the daytime construction noise guideline of 75dB(A) by 5 dB(A) at the closest sensitive receivers 22m away. For the construction of the pier and seawall, the placement of pre-cast concrete blocks will be undertaken using a derrick barge and an excavator and this operation is expected to exceed the noise guideline by 5 dB(A) at the closest NSRs 22m away.

The construction equipment is not anticipated to work simultaneously and the predicted noise levels will be as follows:

		<u>Predicted Noise Levels</u>
Dredging -	Dredger :	80 dB(A)
Laying Seawall/Pier Block -	Excavator	80 dB(A)
	Derrick barge	72dB(A)
Mixing Concrete -	Concrete Mixer	64 dB(A)

Other construction activities, such as provision of a navigation light, bollards, fendering system, as well as the reconstruction works are not anticipated to cause adverse noise impacts.

Marine Water Quality and Aquaculture:-

Dredging of marine deposits may increase the suspended solid content in the water column. However, the dredging will be carried out at an approximate rate of 30-40 m<sup>3</sup>/hr and, as indicated by the borehole log provided in Drawing 3a (location of the borehole is shown on Drawing 3b), the dredged material will consist of coarse sand to a depth of 3.15m and will precipitate rapidly. Thus, suspended solids will be low. In addition, the dredged material does not constitute contaminated mud and therefore no special handling or disposal is required.

In addition, the fish cages in the fish culture zone will be relocated for the duration of the dredging and pier foundation laying operations. However, should any marine works extend to when the fish culture zone is operational, a silt curtain to confine the works will be employed.

A detailed water quality monitoring and audit programme will be undertaken by CED during their maintenance dredging works. The monitoring programme provides suitable coverage of the pier dredging and foundation works and additional stations for IS-085 are not required.

Ecology:-

Destruction of a relatively small area of sea bed and disturbance to sea bed fauna is anticipated. Although the loss of a small area of the sea bed will be permanent, new ecological niches will be created after the completion of the construction work. The sea bed in this area is likely to be of medium conservation interest and thus, the impact is of low magnitude and medium significance.

**During Operation**

No major or significant impacts are expected in this phase.

**ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED**

**Describe measures to minimise environmental impacts**

Noise:-

With the employment of a temporary noise barrier during dredging works, the approximate location of which is indicated on Drawing 1, and a silencer plus acoustic enclosure for the excavator, mitigated noise levels are predicted to be:

	Mitigated Noise levels
Dredger	70 dB(A)
Excavator	70 dB(A)
Excavator	70 dB(A)

Thus, with the application of the mitigation measures, it is not expected that construction noise will create adverse impact at the closest NSR at 22m away. In addition, procedures for dealing with complaints should be put in place.

Aquaculture and Marine Water Quality:-

CED will adopt the use of a silt curtain to protect nearby coral communities at Luk Chau. Further mitigation is not anticipated as being required as the fish cages will be relocated during the dredging, pier foundation and pier and seawall construction works. However, should any marine works extend into a period when the fish culture zone is operational, a silt curtain to fully enclose the works will be employed.

A water quality EM&A programme has been specified by CED to identify and control suspended solid concentrations during dredging operations. This programme provides adequate coverage of the pier site and thus additional stations for IS-085 are not required.

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

Terrestrial ecology:-

Well vegetated areas along the shoreline should be disturbed as little as possible during the construction activities including site clearance and materials storage.

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

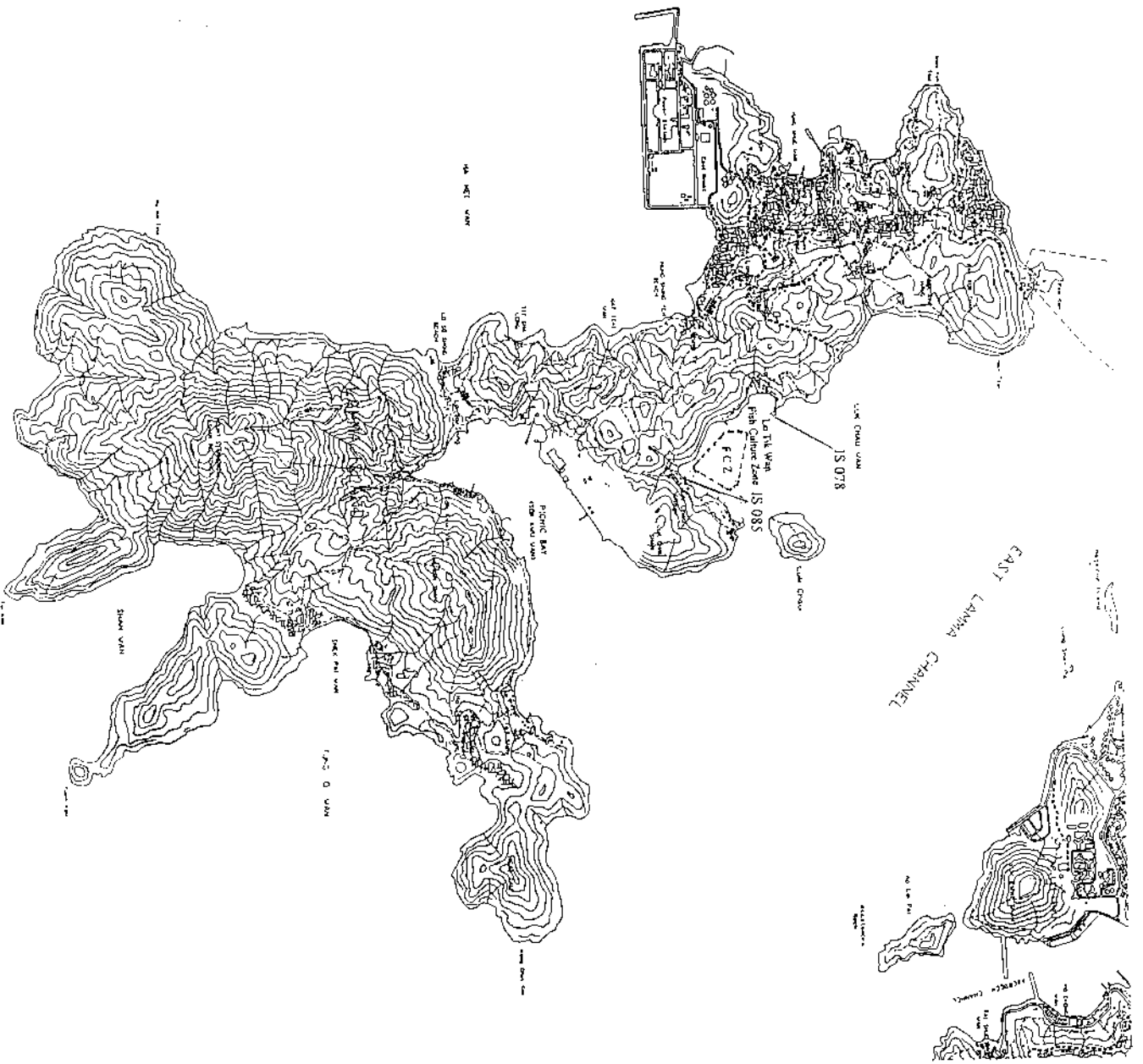
**Comment on the possible severity, distribution and duration of environmental effects**

As the fish culture zone will not be operational for the duration of the dredging and pier foundation works, no adverse effects on this key sensitive receiver will occur. However, in the unlikely event that marine works extend into the period when the fish culture zone is operational, the works will be conducted within a silt curtain which will ensure that this sensitive receiver will be protected from adverse water quality impacts.

The loss of sea bed will be permanent but is not considered to be severe as benthic habitats will re-establish in time.

**Comment on any further implications**

This Project has been previously assessed by EPD and judged that no EIA was required.



Author	Checked	By	Date

**Rural Planning & Improvement Strategy**  
 Home Affairs Department  
 Hong Kong Government

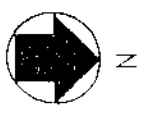
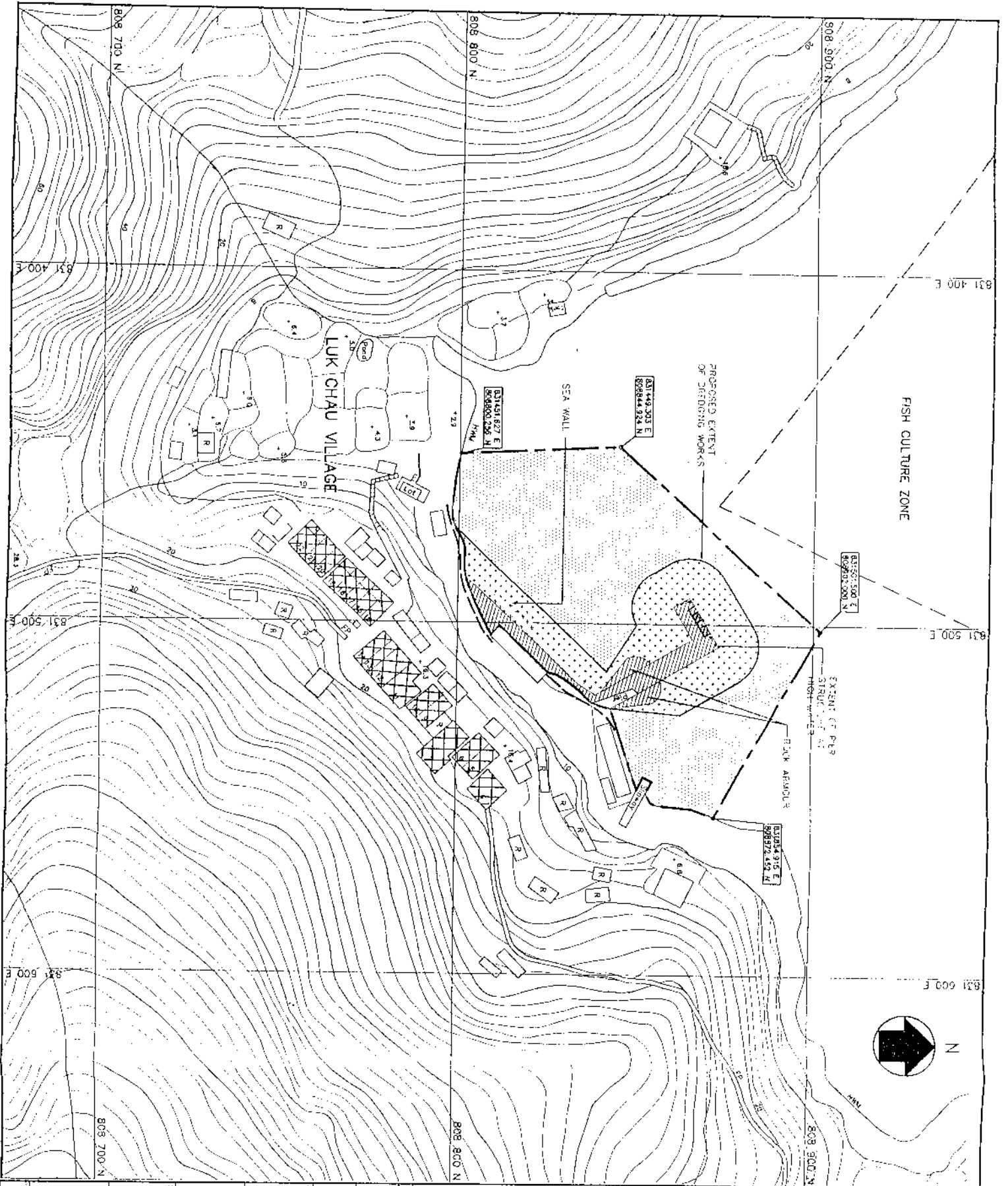
**RPIIS MINOR RURAL IMPROVEMENT WORKS PACKAGES 1 & 2**

**IS 085 CONSTRUCTION OF PIER AT LUK CHAU TSUEN LAMMA ISLAND**

**LOCATION PLAN**






**Mouchel**  
 Mouchel Asia Limited  
 Consulting Engineers

Scale: 1:5000  
 DRAWING NO. 2



NOTES:  
 1. THIS DRAWING IS PART PLAN OF SURVEY SHEET NO. 150885 & 150886.

LEGEND:

-  AFFECTED AREA
-  AREA AFFECTED BY DREDGING
-  PERMANENT WORKS AREA
-  APPROXIMATE LOCATION OF TEMPORARY NOISE BARRIER
-  SENSITIVE RECEIVERS

Home Affairs Department  
 Rural Planning & Improvement Strategy  
 Home Affairs Department  
 Hong Kong Government

RPIIS MINOR RURAL IMPROVEMENT WORKS PACKAGES 1 & 2

15085  
 PIER AT LUK CHAU TSUEN  
 LAMMA ISLAND



PIER LOCATION & NSRS

**Mouchel**  
 Mouchel Asia Limited  
 Consulting Engineers

Project No.	15085
Client	Home Affairs Department
Scale	1:1000
Date	15/08/2015
Drawn by	15085
Checked by	15085
Approved by	15085



RPIS Package 1 & 2

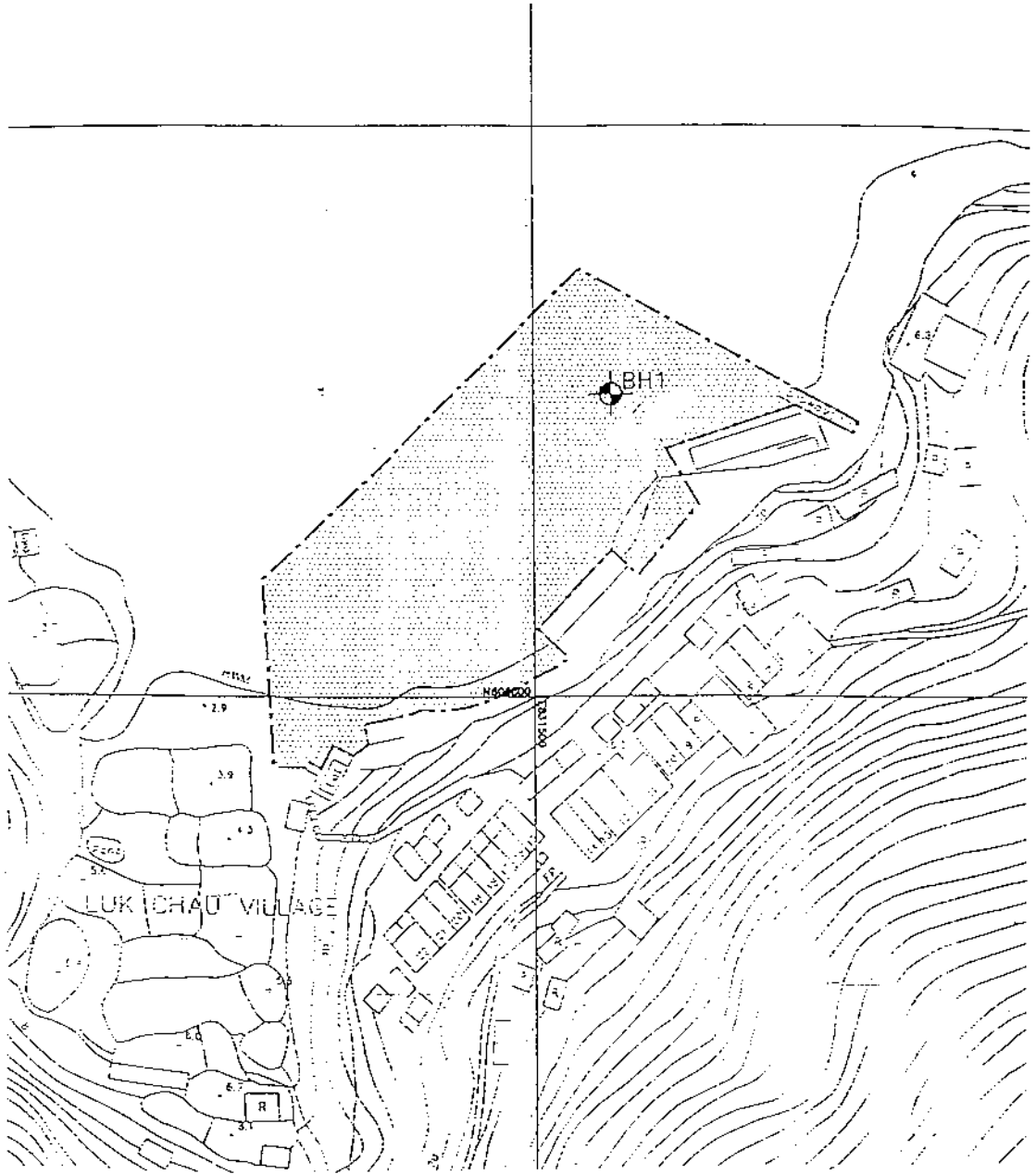
				<b>DRILLHOLE RECORD</b>			HOLE NO. <b>IS085BH1</b>						
CONTRACT NO. <b>GE/95/08</b>							SHEET <b>1</b> of <b>1</b>						
PROJECT <b>RPIS MINOR RURAL IMPROVEMENT WORKS PACKAGE 1 AND 2 MARINE GROUND INVESTIGATION</b>													
METHOD <b>CP + RO + RC</b>			CO-ORDINATES <b>E 831514.30</b> <b>N 808853.20</b>			W.O. NO. <b>GE/95/08.9</b>							
MACHINE & No. <b>CLAIRE</b>						DATE <b>6/6/96</b> to <b>6/6/96</b>							
FLUSHING MEDIUM <b>WATER</b>			ORIENTATION <b>Vertical</b>			GROUND LEVEL <b>0.10</b> mPD							
Drilling Progress	Casing size	Water level (m) Shift start/end	TCR%	SCR%	RDD%	FI	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
05/06/96	SX	1.80m 07:30											Light grey (5Y), fine to coarse SAND with many coral fragments. (MARINE DEPOSIT) (HANG HAU FORMATION)
1										1.50			
2			0							2.50			
3			0				R = 8			2.05			
4	SX		0				r = 24			1.50		V	Extremely weak, brown (10YR), completely decomposed GRANITE. (Sandy angular coarse GRAVEL of granite.)
5			96	96	89	6	(10, 13, 11, 45, 78, 46, 20, 21, 25)mm	T2-101	4.10	4.05		III/III	Moderately strong to strong, pink to pinkish grey, spotted black equigranular, moderately slightly decomposed, medium grained GRANITE.
6			100	100	88			T2-101	4.64				Joints closely to medium spaced, smooth planar, limonite stained, dipping 15°, 25°-30°, 60° and subvertical from 7.10-7.30m and 8.10m-8.58m.
7			100	100	70	8		T2-101	5.59				
8			100	100	98			T2-101	7.10				
9		0.70m 19:30	100	95	70			T2-101	8.58				
10													End of hole at 9.22m.
LOGGED <b>R. T. WU</b>			DATE <b>12/06/96</b>			CHECKED <b>H.T. BURBIDGE</b>			DATE <b>12/06/96</b>			REMARKS	

Construction of Pier at Luk Chau Tsuen - IS-085  
Borehole Log

Mouchel

Drawing number

3a



Construction of Pier at Luk Chau Tsuen - IS-085  
Borehole Location

Mouchel

Drawing number 3b