



Hongkong Telecom  
香港電訊



A CABLE & WIRELESS COMPANY

**ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE (CHAPTER 499)  
SECTION 5(1)(b)**

**PROJECT PROFILE**

**CABLE LANDING WORK IN DEEP WATER BAY FOR  
SEA-ME-WE 3 FIBRE OPTIC SUBMARINE CABLE SYSTEM**

**Project No. PU3033-0001  
Issue: MAY 1998**

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**PROJECT PROFILE  
ON  
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**1. INTRODUCTION**

The SEA-ME-WE 3 Submarine Cable System is an international fibre optic telecommunication system connecting Hong Kong and South East Asia, Middle East, Western Europe, with a further extension to Australia (Figure 1). There are two cable segments to be landed in Hong Kong, Segment S1 extending from Hong Kong to the east connecting to China, Taiwan, Korea and Japan, and Segment S2 connecting to Macau, Philippines, Malaysia, Brunei, Vietnam, Cambodia, Singapore, extending west to Europe and south to Australia.

The proposed work in this Project Profile involves extending the two fibre optic submarine telecommunication cable segments from the existing manholes built by Hong Kong Telecom International (HKTI) near the public bathing beach in Deep Water Bay to the main trunk of the SEA-ME-WE 3 Submarine Cable System beyond the boundary of Hong Kong.

**2. BASIC INFORMATION**

**Project Title**

Cable Landing Work in Deep Water Bay for SEA-ME-WE 3 Fibre Optic Submarine Cable System.

**Purpose**

The purpose of the work in Deep Water Bay is to lay the two undersea fibre optic cables from the sea towards the existing HKTI manholes near to the public bathing beach of Deep Water Bay.

**Name of Project Proponent**

Hong Kong Telecom International Limited (HKTI)

**Location of Site**

The location of the operation will be at the west side of Deep Water Bay public bathing beach in Hong Kong, out of the public safety swimming area boundary. Please refer to the planned cable routes in Figures 2, 3 and 4 for details.

## **Scale of Project**

The scale of the project involves the following works on the beach of Deep Water Bay and sea-bed extending from the beach:

- excavate two areas of sand on the beach of Deep Water Bay approximately 2m deep by 1m wide by 30m long to expose the entrance of existing manhole conduits below the sand (see Figures 4 & 5) for landing the submarine cables;
- lay the cables inside the trenches and pull the cables into the manholes;
- backfill the excavated areas on the beach and reinstate it to its original condition; and
- continue to lay and press the two submarine cables below the sandy sea-bed for a depth of two metres and connect them to the main trunk of the SEA-ME-WE 3 Cable System beyond the boundary of Hong Kong.

## **History of Site**

The selected site in Deep Water Bay has a long history of being used for landing of telecommunications submarine cables over the past few decades. These included:

- SEACOM Cable System (in service between 1965-1986)
- Luzon-Hong Kong (LUHO) Cable System (in service since 1976)
- Hong Kong- Taiwan No.1 (HONTAI-1) Cable System (in service since 1985)
- Singapore-Hong Kong (SINHON) Cable System (in service since 1986)
- Hong Kong-Japan-Korea (H-J-K) Cable System (in service since 1990)
- Thailand-Vietnam-Hong Kong (T-V-H) Cable System (in service since 1995)

## **Number and Types of Designated Projects to be Covered by the Project Profile**

This Project Profile covers one area which might be classified as a Designated Project under Category C (C.12(a) iii) in Schedule 2 of the EIA Ordinance, and involves an operation within an area less than 500m from the nearest boundary of an existing bathing beach (Deep Water Bay).

## **Contact Point**

All queries regarding the project can be addressed to:

### 3. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

The SEA-ME-WE 3 Cable System is jointly planned and constructed by HKTI with other 92 world-wide international telecommunications administrations, with a ready for service date at 15 December 1998.

Major project milestones are as follows:

- Application Submitted to Office of Telecom Authority (OFTA) 21/3/97
- OFTA's Approval-In-Principle 15/4/97
- Completion of Marine Survey for Determination of Cable Route 12/9/97
- Application to District Lands Office (DLO) for Operation Permit 16/9/97
- Completion of Government Internal Circulation for Commentary 14/5/98
- Cable Laying Sep/Oct 98
- Ready For Service 15/12/98

The work on the beach of Deep Water Bay and the cable laying operation for the initial 500m in water is scheduled to be completed within 3 to 5 days in September/October 98. It is outlined as below:

- a) Two trenches of approximately 1m wide, 2m deep, 30m long will be excavated from the manhole conduit entrances towards the sea. Please refer to Figures 2, 3 and 4 for the approximate locations of the work
- b) The two cable segments (with cable size of 46mm in diameter) will be laid to the manhole conduits from a working barge staying at an appropriate location and at a distance around 300m to 500m from the beach.
- c) The cables will then be protected with articulated iron pipes of size around 100mm in diameter (please see Figures 6 and 7) and laid on the two excavated trenches.
- d) The whole working area on the beach will then be backfilled and reinstated to the its original conditions.
- e) Divers will continue to install the protecting articulated iron pipes for the initial 200m of cables and press/bury them by hand into the sandy seabed between the beach and the working barge.
- f) The cables, after landing to the beach, will continue to be laid and pressed/buried into the sandy seabed by the cable laying vessel with the assistance of divers along the planned cable route.

HKTI will connect the landed sea cables to the duct cables inside the beach manholes which links to the Cable Station at 45 Deep Water Bay Road utilizing the existing underground duct facilities between the beach and the Station. There will be no other land based excavation or construction work.

### 4. POSSIBLE IMPACT ON ENVIRONMENT

The marine sub-contractor of SEA-ME-WE 3 has conducted a water quality assessment measurement during a similar operation and concluded that the laying and burial operation will not consume any foreign substances or contaminants that could pollute the water. No

gaseous emission, dust or odour will be caused by the operation.

All excavated sand on the beach would be re-used for backfill. No waste material or disposal would be left. There will be no emission and discharges, nor any known adverse impact to the environment.

It is expected that all the shore-end work will be performed in day time and daylight. There will be no night-time operations on the beach and near-by area, and no excessive noise will be generated during the work.

The cables use stable silicon optical fibres protected with multi-layers of corrosion resistant polyethylene and galvanized steel wires and are designed for a normal working life-time of more than 30 years in sea water. No risk of accidents which would result in pollution or hazard, and no unsightly visual appearance or ecological impacts are expected.

## **5. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT**

Deep Water Bay is a popular public bathing beach in Hong Kong. However, because the submarine cables are buried under the beach and seabed, they will not cause any visual obstruction or inconvenience to the users of the beach. HKTl will undertake the responsibility to carry out regular inspection along the cable routes in order to maintain them in good conditions. There will be no adverse long term or cumulative effects/impacts to the environment.

## **6. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND FURTHER ENVIRONMENTAL IMPLICATIONS**

The methods used in burying the SEA-ME-WE 3 Submarine Cable System, as described above, have been used around the world for more than one century and are widely accepted to be having no impact on the surrounding environment. The working period are normally very short (within two or three days per cable segment), no waste or contaminant disposal issues and no excessive noise will be generated in such the operation.

The geotechnical environment of Deep Water Bay has been confirmed to be suitable for submarine cable landing by electronic surveys. The site has a long history of being used for submarine cable landings for several decades and there has been no record of complaint or incident on similar submarine cable landing activities that indicate adverse effects to the surrounding environment.

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# SEA-ME-WE 3 Cable System

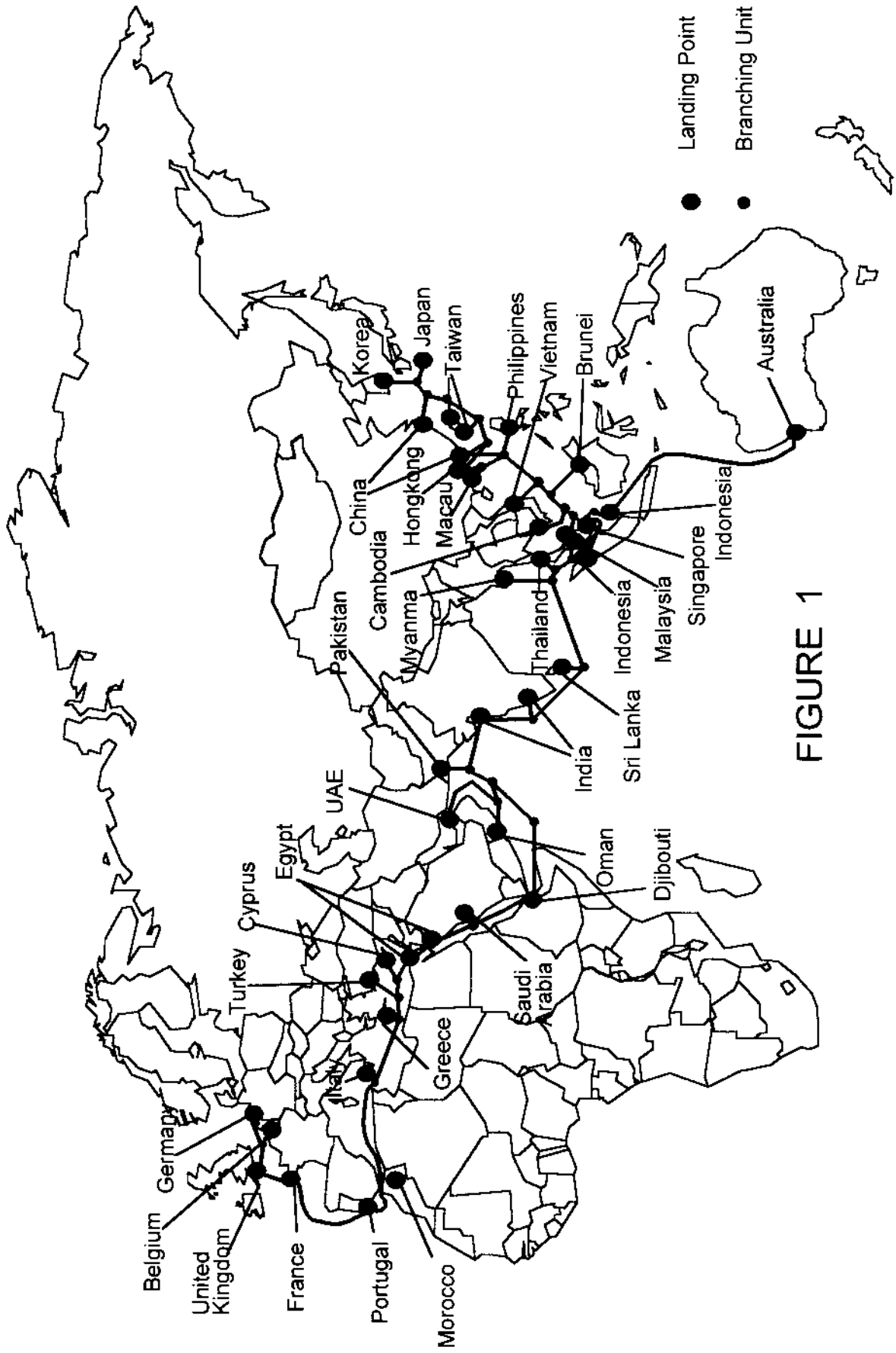


FIGURE 1

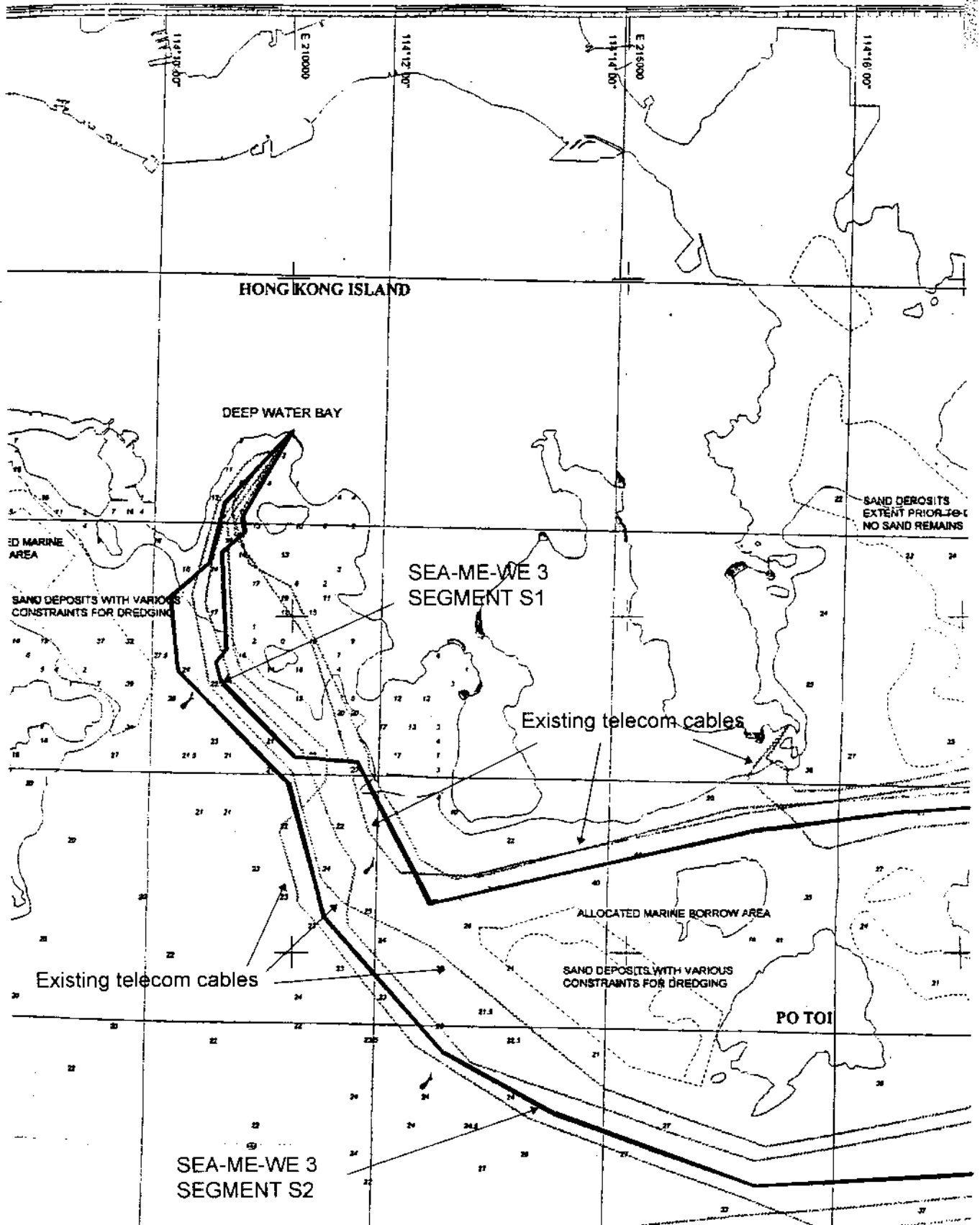
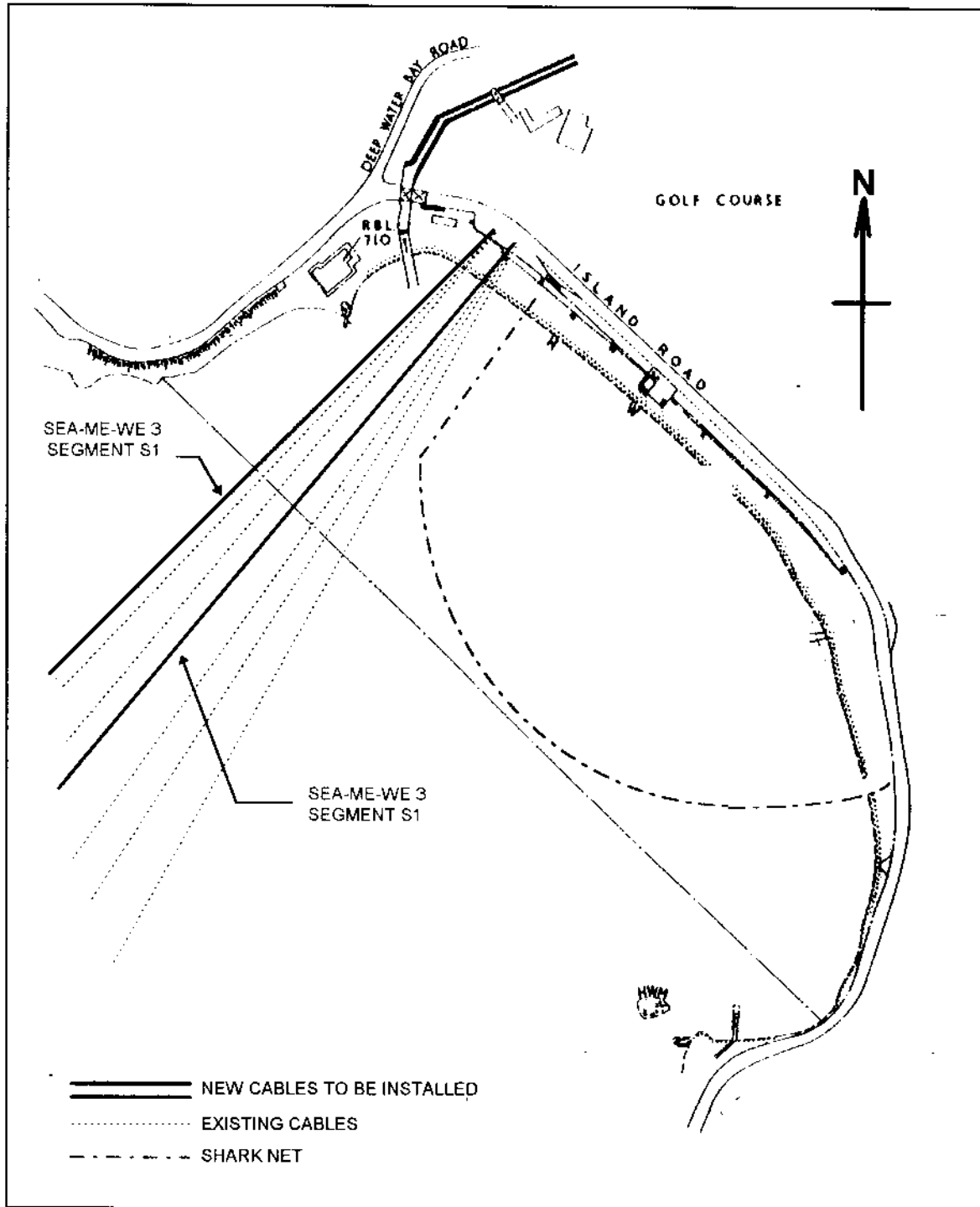


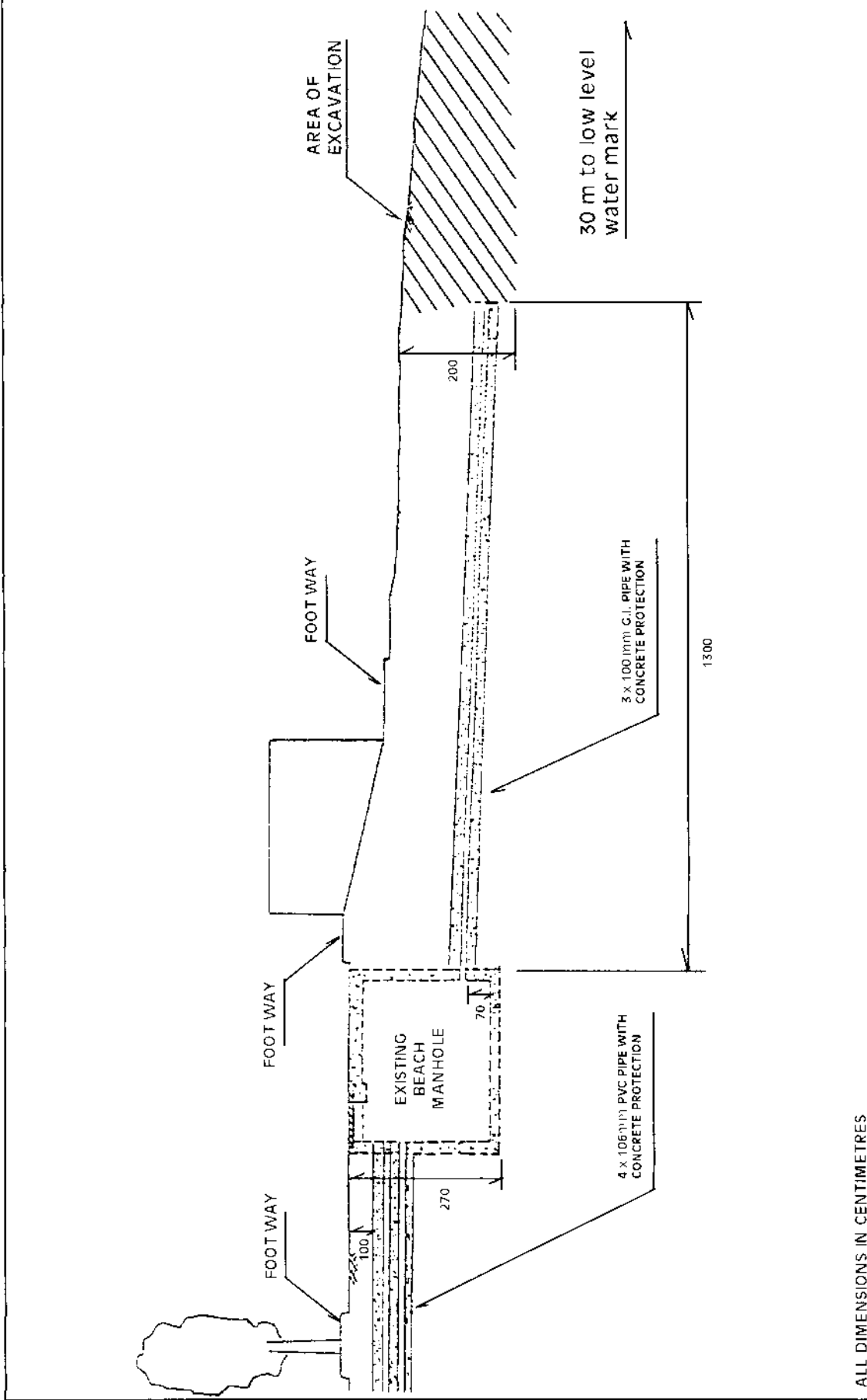
FIGURE 2



**FIGURE 3 - OVERALL VIEW OF DEEP WATER BAY  
SHOWING LOCATION OF CABLES**







ALL DIMENSIONS IN CENTIMETRES

FIGURE 5 - CROSS SECTION OF HKTI BEACH MANHOLE  
NEAR DEEP WATER BAY

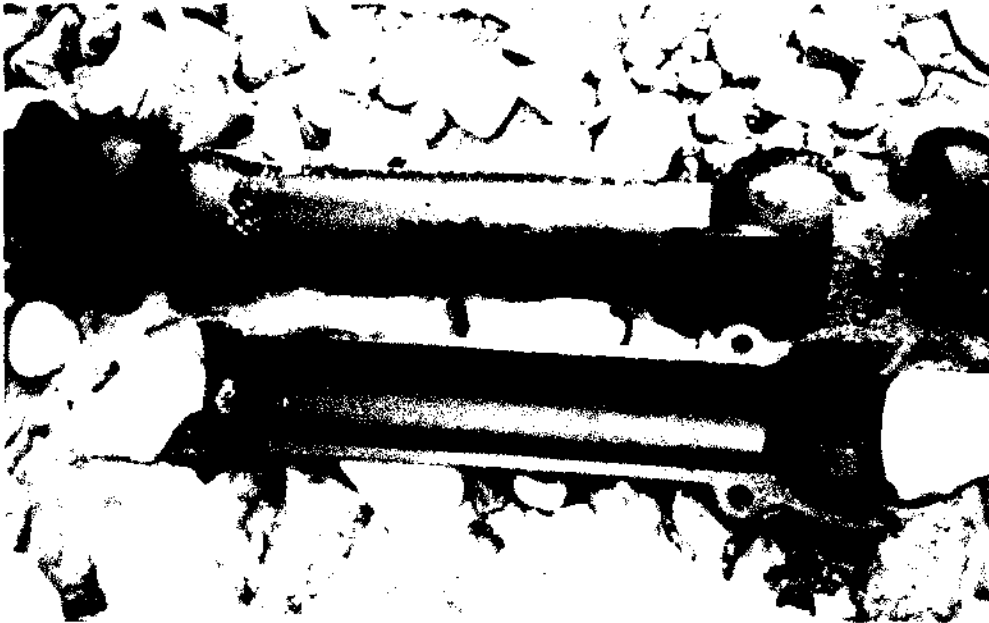


FIGURE 6 - PROTECTIVE ARTICULATED PIPES



FIGURE 7 - CABLE FITTED WITH ARTICULATED PIPES