

## **Chapter 3**

### **Project Evaluation and Recommendations**

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### **3.1 Project Effect**

Cape Verde's main industries are agriculture and fisheries. But since the national territory has a dry Sahel climate and its soil is mostly volcanic with a great deal of undulation, agricultural productivity is low, and the situation regarding expansion of agricultural production is extremely difficult. Because of that, the country's food self-sufficiency is low, which means that it has to rely on food aid from other countries. On the other hand, in spite of the fact that it represents only about 7-8% of GDP, Cape Verde's fisheries industry accounts for approximately 30% of the animal protein consumption of its people and is a major source of foreign exchange earnings, accounting for 27% of total export volume, and from that standpoint is growing in relative importance.

Compared with other African countries, Cape Verde has a large exclusive economic waters zone (EEZ) which according to fishery resource surveys is endowed with an estimated 40,000 tons of fishery resources. In recent years the volume of catches has been increasing by several percent each year, attaining approximately 10,000 tons in 2000. Although the maximum sustainable volume of catches is not clear, it is clear that there is still considerable leeway for further development of such resources.

The Cape Verde islands have some 100 catch landing points widely distributed throughout them, but most of them are small in scale, and only a very few of them, such as Praia Fishing Port and Mindelo Fishing Port, are equipped with catch landing facilities and catch distribution facilities.

Praia Fishing Port was created in 1991 on the basis of Japanese grant aid as an extension of the commercial port of Praia, with construction of a catch landing wharf and breakwater as civil facilities and a fish sorting and handling facility, a storage facility for fishermen's fishing gear, etc. as land facilities. Since its construction the volume of catches landed at it has been increasing year by year as it has come to be used not only by fishing vessels based in the vicinity of Praia and elsewhere on Santiago island but also those registered at neighboring islands, reaching about 1,300 tons in 2000. Having the large consumption area of Praia, the capital, in its hinterland, the fishing port is also a hub of distribution of fishery products, which are brought to it for sale not only by fishing vessels registered at it but also from elsewhere on the island.

That being the case, the fishing port is very congested, with not only fishing vessels landing catches, doing preparatory work or resting between sorties but

also inter-island ferries coming in, all of which lowers the work efficiency of landing of catches and other work there. The wharf is also used at the same time as a place for sale of fish landed at it, for supplying ice and for scaling and other primary processing of fish as well as other activities, and that gives rise to sanitary problems and that of difficulty in keeping the fish fresh.

The present state and problems of Praia Fishing Port as identified at the time of the basic design study can be summarized as follows:

There is a great deal of congestion within Praia fishing port as a result of increase in the number of fishing boats making use of it as the volume of catches has increased as well as use of it by inter-island ferries and tugboats.

Because of insufficient wharf length there is congestion of those fishing boats that are landing their catches, those that are engaged in preparatory work for going out to sea and those resting between sorties, which makes for deterioration of work efficiency in catch landing, loading of ice on board and other work.

Not only behind wharf but also on the apron and in the corridors buying and selling of fish, scaling and other primary processing of catches, repairing of fishing nets and sale of ice take place at the same time and same place.

Buying and selling of fish takes place in an unsanitary environment in which the fish are laid out directly on the wharf apron in the direct rays of the sun, giving rise to problems of sanitation and keeping the fish fresh.

The existing ice-making machine has become run-down, its production capacity has decreased, and it is difficult to get spare parts when it breaks down, and that situation has led to insufficient supply of ice for loading on fishing boats in preparation for sorties and consequently decline in freshness of catches and lower prices fetched for them.

The project to be implemented against the background described above is expected to have the following effects:

#### Direct Effects:

With extension of the length of the wharf, it will become possible to separate the different use functions of landing of catches, doing preparatory work and rest between sorties. That should result in higher work efficiency, less waiting time and mitigation of congestion at the fishing port.

With extension of the breakwater, it will be possible to have calmness basins in front of the new wharf.

With more spacious anchorage in the fishing port, there will be improvement regarding the state of congestion of fishing boats and commercial vessels, improvement of vessel maneuverability and reduction of accident risk.

With creation of the fish market, it will become possible to buy and sell the fish in a more efficient and sanitary manner, which will make it possible to keep the catches fresher, and that in turn will stabilize the prices they fetch at a higher level.

Ice shortages will be eliminated by provision of the new ice-making machines, making it possible to keep the catches fresh and thus improve their quality when sold and stabilize their prices.

Improvement of the fishing gear lockers facility will improve both the efficiency of preparatory work and fishermen's working conditions.

#### Indirect Effects:

Thanks to creation and provision of facilities in this project it will become possible to supply not just the population of the city of Praia and other areas of the island of Santiago but the country's entire population of 400,000 with quality fishery products.

Thanks to the facilities created and provided in this project the total value of catches of the whole country will increase, creating employment in the fisheries industry and in connection with it.

With increase in volume of catches, it will become possible to export a part of it and thereby earn foreign exchange.

The following is a summary of the effects of implementation of the project and the extent to which the present situation will be improved by it.

**Table 3.1 Effects of Implementation of the Project and Extent of Improvement of the Present Situation by It**

Present situation and problems	Measures taken in the project (undertakings covered by the grant aid)	Effects of the project and expected extent of improvement
The waters within the fishing port are congested with fishing boats and inter-island ferries, creating vessel maneuverability problems and accident risk.	<ul style="list-style-type: none"> <li>• Extension of the length of the breakwater (70m)</li> </ul>	Separation of movement of fishing boats and commercial vessels through increase of anchorage in the port, use of the No. 3 wharf exclusively by fishing boats and use of the area behind the extended part for commercial port purposes
With increase in the volume of catches, the number of fishing boats making use of the fishing port has increased, resulting in overlapping of berthing by fishing boats engaged in the different functions of landing catches, preparatory work before sorties and rest between sorties and consequently in lowering of work efficiency in those different kinds of work.	<ul style="list-style-type: none"> <li>• Extension of the length of the wharf (80m). Division of the wharf into separate parts: catch landing wharf, preparatory work wharf and rest wharf.</li> </ul>	With separate use of the wharf for the different functions, it will become possible to accomplish the different kinds of work in an efficient manner, reducing work waiting time and mitigating fishing port congestion.
Buying and selling of fish laid out directly on the wharf in the direct rays of the sun and scaling and other primary processing work going on at the same time and at the same place, causing problems regarding sanitation and keeping the fish fresh.	<ul style="list-style-type: none"> <li>• Construction of fish market (341.6 m<sup>2</sup>)</li> <li>• Installation of sinks and drainboards in the fish market for fish processing purposes</li> <li>• Furnishing of cold boxes and other fish boxes</li> <li>• Construction of septic tank for disposing of wastewater from fish processing</li> </ul>	Buying and selling fish at a roofed fish market using fish boxes will enhance sanitation (keeping the fish out of the sun and clean in the boxes), as will primary processing of the fish at the sinks and drainboards provided there.
The worn-down existing ice-making machine no longer has its initial production capacity, making it impossible to secure the necessary quantity of ice for keeping the fish fresh, and it is also difficult to get spare parts for it when it breaks down.	<ul style="list-style-type: none"> <li>• Provision of ice-making machines (5 tons/day × 2)</li> <li>• Provision of ice storage facility (30 tons)</li> </ul>	For the present situation regarding fishing sorties there will be practically no shortage of supply of ice, and having two 5-ton ice-making machines will make it much easier to cope with breakdowns and accomplish maintenance.
Presently there are only 25 fishing gear storage lockers, i.e. enough for only 32.5% of the 77 fishing boats registered at Praia Fishing Port.	<ul style="list-style-type: none"> <li>• Construction of additional fishing gear storage capacity (22 additional lockers)</li> </ul>	The rate of coverage of the fishing boats registered at Praia Fishing Port will be raised to 61%.

### **3.2 Recommendations**

It is proposed that the following points be given full consideration in management and operation after completion of construction of the project facilities in order to be able to resolve the problems of Praia Fishing Port through effective use of the catch landing and fishery product physical distribution facilities.

#### **Guidance and Restrictions for Fishermen**

The facilities will be managed by the Praia Fishing Port operating organization under the guidance of the Ministry of Agriculture and Fisheries' General Directorate. For the sake of appropriate and smooth accomplishment of such facility management and operation it is necessary that the fishermen be provided with appropriate guidance, restrictions, etc.

#### **Improvement of Work Efficiency**

Providing the fishermen with guidance for improvement of work efficiency through separate use of the different parts of the wharf according to the different kinds of work of the fishing boats making use of the fishing port (catch landing, preparatory work, rest between sorties).

#### **Establishment of Rules**

Establishment of rules concerning buying and selling of the catches at the fishing port (fish market) and thorough orientation of the fishermen and fish vendors concerning those rules as well as making sure that they are observed by implementing guidance and supervision.

#### **Maintenance of Water Quality in Fishing Port**

Since the fishing port anchorage waters will be more closed in by the extension of breakwater than now, it will be necessary to strictly enforce prohibition of acts that would have an adverse effect on water quality such as dumping of waste oil and discarding of used fishing gear from fishing boats and processing of catches at the anchorage.

Provision of instruction and guidance, including explanation of the wastewater disposal system at the fishing port, to ensure that primary processing of catches is done only at the fish market sinks and drainboards and carrying out of regular septic tank maintenance and inspection.

#### Use of Ice

With provision of the ice-making machines and ice storage facility, it will become possible to keep the catches fresher for a longer amount of time, and that will make it possible to supply better quality fish. The fishermen should therefore be encouraged to use the ice that will become available to ensure fresher supply of fish.

#### Safety Navigation

Since not only fishing boats but also commercial vessels navigate the waters of Praia Fishing Port, it will be necessary to give guidance concerning keeping in close communication with ENAPOR, CAPITANIA and other organizations concerned for the sake of ensuring safe navigation of such boats.

#### Fishery Statistics

In order to be able to clarify the trends in the different fished fish species resources and a fishery market it is important to publish annual statistical reports giving statistics concerning fishery productivity based on catch volume per day of fishing operations or day out at sea of industrial fishing boats.

## **APPENDICES**



# **Appendices**

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## Appendix-1 Member List of the Survey Team

### Field Survey

Name	Assignment	Organization
Official Member Mr. Masakazu FUKUWAKA	Leader	Development Specialist, Institute for International Cooperation, Japan International Cooperation Agency (JICA)
Mr. Yuuzo UCHIYAMA	Technical Adviser	Deputy Director Fishing Communities Promotion and Disaster Prevention Division, Fisheries Infrastructure Department, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries.
Mr. Naomichi MUROOKA	Project Coordinator	Fourth Project Study Division, Grant Aid Project Study Department, Japan International Cooperation Agency (JICA)
Consultant Member Mr. Kozo MATUMURA	Chief Consultant Fishing Port Planner	ECOH Corporation
Mr. Masanori IKEDA	Port Engineering/ Natural Condition Survey	ECOH Corporation
Mr. Hisashi HIRATUKA	Fisheries Market Planning	ECOH Corporation
Mr. Shuji SAKAI	Construction Planning/ Cost Estimation	ECOH Corporation
Ms. Yoshiko FUKUSHIMA	Interpreter	ECOH Corporation

## Explanation of Draft Basic Design

Name	Assignment	Organization
Official Member Mr. Shigeru SHIMURA	Leader	Development Specialist, Institute for International Cooperation, Japan International Cooperation Agency (JICA)
Mr. Yuuzo UCHIYAMA	Technical Adviser	Deputy Director Fishing Communities Promotion and Disaster Prevention Division, Fisheries Infrastructure Department, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries.
Mr. Yoshimoto KOYANAGI	Project Coordinator	Okinawa International Center, Japan International Cooperation Agency (JICA)
Consultant Member Mr. Kozo MATUMURA	Chief Consultant Fishing Port Planner	ECOH Corporation
Mr. Masanori IKEDA	Port Engineering/ Natural Condition Survey	ECOH Corporation
Ms. Yoshiko FUKUSHIMA	Interpreter	ECOH Corporation

## Appendix-2 Study Schedule

### Field Survey

No.	Date	Day	Accommodation	Place of Visitation	Activity
1	4	14	Fri	Lisbon	Movement
2		15	Sat	Paris / Sal	Movement
3		16	Sun	Dakar / Praia	The Embassy of Japan, JICA
4		17	Mon	Praia	MoAF
5		18	Tue	Praia	MoA
6		19	Wed	Praia	ENAPOR, MoAF
7		20	Thu	Praia	MoAF
8		21	Fri	Praia	MoAF
9		22	Sat	Praia	
10		23	Sun	Praia	Praia Office
11		24	Mon	Praia	MoIT
12		25	Tue	Praia	INDP
13		26	Wed	Praia	MoIT
14		27	Thu	Praia	ENAPOR
15		28	Fri	Praia	
16		29	Sat	Praia	North part of Santiago
17		30	Sun	Praia	INDP, Market, INMG, ENAPOR
18	5	1	Mon	Praia	West part of Santiago
19		2	Tue	Praia	Praia Por, INDP, MoIT
20		3	Wed	Praia	INDP, ENAPOR
21		4	Thu	Praia	Market
22		5	Fri	Praia	
23		6	Sat	Praia	
24		7	Sun	Praia	INDP, INMG, Capitania, MoIT
25		8	Mon	Praia	South-west part of Santiago, INDP, Capitania
26		9	Tue	Praia	INDP
27		10	Wed	Praia	INMG, Capitania
28		11	Thu	Praia	INDP, ENAPOR
29		12	Fri	Praia	
30		13	Sat	Praia	
31		14	Sun	Praia	ISE, INDP, MoIT
32		15	Mon	Praia	INMG, INDP
33		16	Tue	Praia	Temporary Yard
34		17	Wed	Praia	INMG
35		18	Thu	Praia	MOAF, INDP
36		19	Fri	Praia	Praia Fishing Port
37		20	Sat	Dakar, Sal	
38		21	Sun	Air, Lisbon	
39		22	Mon	Air, Air	
40		23	Tue		

MoAF:Ministry of Agriculture and Fisheries

MoIT:Ministry of Infrastructure and Transportations

Official Members and Chief Consultant, Consultants other than the Chief

## Explanation of Draft Basic Design

No.	Date		Day	Accommodation	Place of Visitation	Activity
1	8	1	Wed	Paris, Lisbon		Movement
2		2	Thu	Dakar, Sal		Movement
3		3	Fri	Dakar, Praia	Embassy of Japan, JICA, MoAF	Courtesy Call ( Embassy of Japan, JICA)、 Courtesy Call to MoAF
4		4	Sat	Dakar, Praia		Site Survey
5		5	Sun	Praia		Team Meeting
6		6	Mon	Praia	MoAF	Dicsussion on Draft Basic Design (MoAF, INDP)
7		7	Tue	Praia	MoAF	Dicsussion (MoAF, INDP)
8		8	Wed	Praia	MoAF	Discussion on Minutes of Meeting、 Joint Meeting (ENAPOR, Capitania, MoIT, Praia City, MoAF, INDP)
9		9	Thu	Praia, Sal	MoAF	Signinig on Minutes of Meeting
10		10	Fri	Dakar, Lisbon	Embassy of Japan, JICA	Courtesy Call (Embassy of Japan, JICA)、 Explanation of Draft Basic Design
11		11	Sat	Air		Movement
12		12	Sun			Movement

Official Members and Chief Consultant, Consultants other than the Chief

### Appendix-3 List of Parties Concerned in the Recipient Country

#### Ministry of Agriculture and Fisheries

Mr. Mario Anselmo Couto de Matos	Minister ( in time of Field Survey)
Ms. Maria Madalena Neves	Minister ( in time of Explanation of Draft Basic Design )
Ms. Maria Edelmira Moniz Calvalho	General Director for Fisheries
Ms. Maria Aleluia Barbose Andrade	Tecnico Superiora
Mr. Jose Maria dos Santos Carvalho	Tecnico Adjunto Principal
Mr. Emilio Gomes Sanelies	Tecnico Superiora
Ms. Ana Emilia dos R.F. Marta	GEP(Gabinet Estudos Planeamento)
Mr. Hisaharu Yano	JICA Advisor

#### INDP ( National Institute for Fisheries Development )

Ms. Iolanda Filomena Dias Brites	Director
Ms. Ivone Lopes	Technologist of Fish Industries
Mr. Antonio Avelino Casto Silva	Tecnico

#### Ministry of Foreign Affaires Cooperation and Community

Mr. Julio Morais	General Director of International Cooperation
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#### Ministry of Infrastructures and Transportations

Mr. Joao Paulo Lopes Spencer	Director General
Mr. Ricardo Salustio	Infrastructure Engineer
Ms. Vera Abreu	Survey Engineer

#### ENAPOR ( Empresa Nacional de Administracao dos Portos, E.P. )

Mr. Franklim do Rosario Spencer	Director ( in time of Field Survey)
Mr. Jose Manuel Neves Fortes	Director ( in time of Explanation of Draft Basic Design )
Mr. Hugo Policarpo Moreno	Eng. Electromecanico Naval

#### Praia Municipal Office

Mr. Felisberto Vieira	President
Mr. Jose Maria Veiga	Vice President
Ms. Margarida Delgado	Director of Municipal Service and Secrities
Mr. Antonio Pedro Monleiro	

#### Capitania dos Portos de Sotavento

Mr. Joao de Deus Carvalho Silva	Capitao da Marinha Mercante
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#### Instituto Nacional de Meteorologia e Geofisica

Mr. JoseMannel Gomes Moreno	Presidente
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#### ELECTRA

Mr. Joao Renato Lima	Director
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#### Instituto Superior de Educacao

Dr. Alberto da Mota Gomes	Professor Associado
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Construction Company

1 ) CVC

Mr. Rodrigo Vaz Guedes Croft de Moura	President	
	Mr. Manuel Isidro Silva Gomes	Administrador

2 ) EMPREITEL FIGUEIREDO

Mr. Alexadre Figueiredo Silva	Director
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3 ) CONCAVE

4 ) ENGEOBRA

Building Material Trader

1 ) Diocesana Center

2 ) MENO SOARES

3 ) LUIS CABRAL

4 ) BRAZ ANDRAD

5 ) SEMED & BRIT LDA

Mr. Antonio Semedo Brito	Socio Gerente
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6 ) MULTICOPIA LDA

Mr. Daniel Gomes
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7 ) ICV

Mr. Rui Figueiredo Rocha Santos	Gerente
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8 ) Cobo Verde Cement

Japanese Embassy in Senegal

Mr. Daisuke Hoshino	Second Secretary
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Mr. Kunio Nakayama	Second Secretary
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Mr. Toshiya Sorimachi	Attache
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Japan International Cooperation Agency Senegal Office

Mr. Tsuneo Kurokawa	Representative
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Ms. Mayumi Amano	Duputy Resident Representative
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Ms. Kayo Sakaguchi
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Consultant

1 ) SASIF

Mr. Ouma Ba	Director
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2 ) SUBMARINE SERVICOS LDA

Mr. Alain Hurtebize	Diver
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## Appendix-4 Minutes of Discussions

### Appendix-4.1 Minutes of Discussions (Field Survey)

MINUTES OF DISCUSSIONS  
ON  
THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR EXTENSION OF PORT INFRASTRUCTURE IN PRAIA  
IN  
THE REPUBLIC OF CAPE VERDE

In response to a request from the Government of Republic of Cape Verde / the Ministry of Agriculture and Fisheries (hereinafter referred to as "the Government of Cape Verde"), the Government of Japan decided to conduct a Basic Design Study on the project for Extension of Port Infrastructure in Praia (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Cape Verde the basic design study team (hereinafter referred to as "the Team"), which is headed by Mr. Masakazu FUKUWAKA, Senior Advisor, Institute for International Cooperation, JICA, and is scheduled to stay in the country from 17 April to 20 May, 2001.

The Team held discussions with the officials concerned of the Government of Cape Verde and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Praia, 24 April, 2001



Mr. Masakazu FUKUWAKA  
Leader  
Japan International Cooperation Agency



Mr. Julio Morais  
General Director, International Cooperation,  
Ministry of Foreign Affairs Cooperation and  
Community



## ATTACHMENT

### 1. Objective

The objective of the Project is to strengthen the capacity of loading and distribution of fish in Praia Fishing Port through following activities,

(1) extension of landing wharf and break water

(2) construction of fish market and gear lockers

(3) setting up ice-making equipment, and

(4) providing related equipment

### 2. Project Site

The site of the Project is located in Praia City as shown in Annex-1.

### 3. Responsible and Implementing Agency

The Responsible and Implementing Agency is the National Institute for Fisheries Development, Ministry of Agriculture and Fisheries.

### 4. Items requested by the Government of Cape Verde

After discussions with the Team, the items described in Annex-2 were finally requested by Cape Verde side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

### 5. Japan's Grant Aid System

5-1. Cape Verde side has understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-3.

5-2. Cape Verde side will take the necessary measures, as described in Annex-4, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

### 6. Schedule of the Study

6-1. The consultants will proceed to further works in Cape Verde until 20 May, 2001.

6-2. JICA will prepare the draft reports in English and dispatch a mission in order to explain its contents around August, 2001.

6-3. In case of that the contents of the report is accepted in principle by the Government of Cape Verde, JICA will complete the final report and send it to the Government of Cape Verde by December, 2001.

7. Other relevant issues

7-1. Cape Verde side has agreed to allocate the enough budgets and personnel staff for proper operation and maintenance of the facility and equipment provided by the Project.

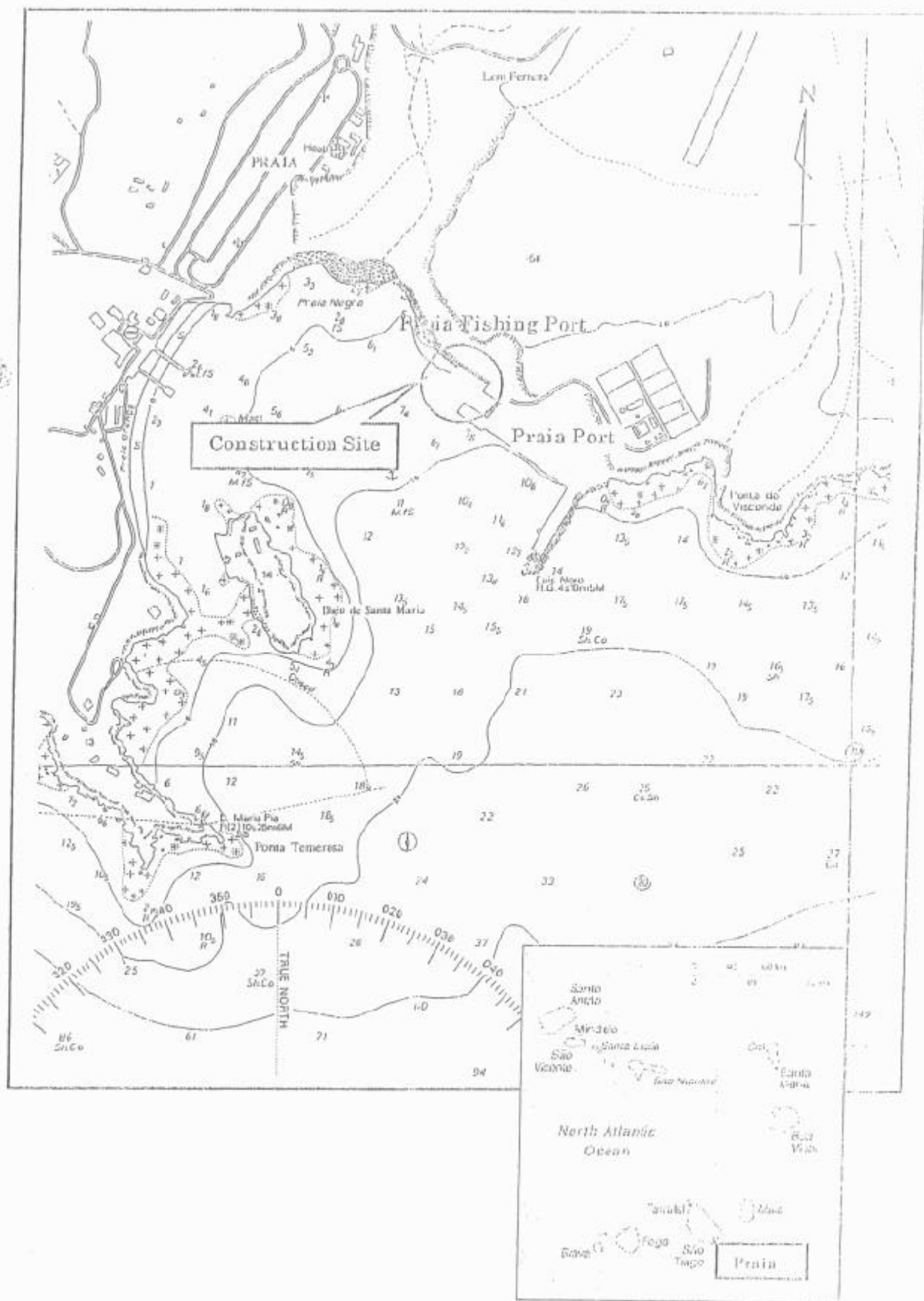
7-2. Cape Verde side will present the organization plan for administration and operation of the Praia Fishing Port extended in the Project to the consultants during the Basic Design Study and inform the plan to the Government of Japan when the next mission will be dispatched.

7-3. Cape Verde side agreed that the Government of Cape Verde shall be responsible for the management, administration, financial and personnel matters, which are not covered by Japan's Grant Aid for the Project.

7-4. Cape Verde side made definite promise to prepare the leveled and cleared temporary yard as close as possible to the Project Site by the Government of Cape Verde.

7-5. Cape Verde side explained that Environmental Impact Assessment (hereinafter referred to as "EIA") might not be necessary for the Project. However, in case the Government of Cape Verde admit the necessity of the EIA, the Government of Cape Verde made definite promise to carry it out not to bother the implementation of the Project.

Annex-1



Construction Site

Items requested by the Government of Cape Verde

Landing Wharf ( 70m ) including fenders and bollards

Break Water ( 70m ) including lighting apparatus

Ice-making equipment including storage

Fish market

Gear lockers

Parking lot

Fish cart for handling fishes within the Praia Fishing Port

Fish box for handling fishes within the Praia Fishing Port

FRP boats and fishing nets ( see notes \*)

\*During the discussions, the difficulty has been recognized to include additionally requested FRP boats and fishing nets in the Project. The Government of Cape Verde manifested intention to request them in another project in accordance with the scheme of the Japan's Grant Aid Program.

## Japan's Grant Aid Program

## 1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

Application (Request made by a recipient country)

Study (Preparatory Study / Basic Design Study conducted by JICA)

Appraisal & Approval (Appraisal by the Government of Japan and

Approval by the Cabinet of Japan)

Determination of Implementation (Exchange of Notes between the both Governments)

Implementation (Implementation of the Project)

(2) Firstly, an application or a request for a project made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to see whether or not it is suitable for Japan's Grant Aid. If the request is deemed suitable, the Government of Japan entrusts a study on the request to JICA (Japan International Cooperation Agency).

Secondly, JICA conducts the Study (Basic Design Study), using a Japanese consulting firm. If the background and objective of the requested project are not clear, a Preparatory Study is conducted prior to a Basic Design Study.

Thirdly, the Government of Japan appraises the Project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study Report prepared by JICA and the results are then submitted to the Cabinet for approval.

Fourthly, the Project approved by the Cabinet becomes official when pledged by the Exchange of Notes signed by the both Governments.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

## 2. Contents of the Study

## (1) Contents of the Study

The purpose of the Study (Preparatory Study/Basic Design Study) conducted on a project requested by JICA is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

a) to confirm background, objectives, benefits of the project and also institutional capacity

- of agencies concerned of the recipient country necessary for project implementation,
- b) to evaluate appropriateness of the Project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) to confirm items agreed on by the both parties concerning a basic concept of the project,
- d) to prepare a basic design of the project,
- e) to estimate cost involved in the project.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request.

Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

## (2) Selecting (a) Consulting Firm(s)

For smooth implementation of the study, JICA uses (a) consulting firm(s) registered. JICA selects (a) firm(s) through proposals submitted by firms that are interested. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference made by JICA.

The consulting firm(s) used for the study is (are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency.

## (3) Status of a Preparatory Study in the Grant Aid Program

A Preparatory Study is conducted during the second step of a project formulation & preparation as mentioned above.

A result of the study will be utilized in Japan to decide if the Project is to be suitable for a Basic Design Study

Based on the result of the Basic Design Study, the Government would proceed to the stage of decision making process (appraisal and approval).

It is important to notice that at the stage of Preparatory Study, no commitment is made by the Japanese side concerning the realization of the Project in the scheme of Grant Aid Program.

## 3. Japan's Grant Aid Scheme

### (1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non reimbursable funds needed to procure facilities, equipment and services for economic and social development of the country under the following principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not in a form of donation or such.

(2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes by both Governments, in which the objectives of the Project, period of execution, conditions and amount of the Grant etc. are confirmed.

(3) "The period of the Grant Aid" means one Japanese fiscal year, which the Cabinet approves, the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country origin.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude into contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(6) Undertakings required to the Government of the recipient country

In the implementation of the Grant Aid, the recipient country is required to undertake necessary measures such as the following:

- a) to secure land necessary for the sites of the project and to clear and level the land prior to commencement of the construction work,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the Project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at

the port of disembarkation and internal transportation of the products purchased under the Grant Aid,

e) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,

f) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) Proper Use

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for their operation and maintenance as well as to bear all expenses other than those to be borne by the Grant Aid.

(8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the contracts verified.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to pay issued by the Government of the recipient country or its designated authority.



## Major Undertakings to be taken by Each Government

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To secure land		✓
2	To clear, level and reclaim the site when needed		✓
3	To construct gates and fences in and around the site		✓
4	To construct the parking lot	○	
5	To construct roads		
	1) Within the site	○	
	2) Outside the site		✓
6	To construct the building	○	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		○
	b. The drop wiring and internal wiring within the site	○	
	c. The main circuit breaker and transformer	○	
	2) Water Supply		
	a. The city water distribution main to the site		○
	b. The supply system within the site ( receiving and/or elevated tanks )	○	
	3) Drainage		
	a. The city drainage main ( for storm, sewer and others ) to the site		✓
	b. The drainage system ( for toilet sewer, ordinary waste, storm drainage and others ) within the site	○	
	4) Gas Supply		
	a. The city gas main to the site		○
	b. The gas supply system within the site	○	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame / panel (MDF) of the building		○
	b. The MDF and the extension after the frame / panel	○	
	6) Furniture and Equipment		
	a. General furniture		○
	b. Project equipment	○	
8	To bear the following commissions to a bank of Japan for the banking services based upon the B / A		
	1) Advising commission of A / P		○
	2) Payment commission		○
9	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	○	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		○
	3) Internal transportation from the port of disembarkation to the project site	(○)	(○)

10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		

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MINUTES OF DISCUSSIONS  
ON  
THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR EXTENSION OF FISHING PORT INFRASTRUCTURE IN PRAIA  
IN  
THE REPUBLIC OF CAPE VERDE  
(CONSULTATION ON THE DRAFT REPORT)

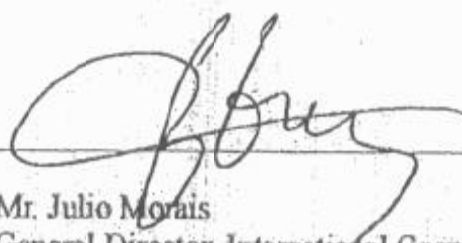
In April 2001, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Teams on the Project for Extension of Fishing Port Infrastructure in Praia (hereinafter referred to as "the Project") and through discussions, site surveys, and technical examination of the results in Japan, has prepared the draft report of the study.

In order to explain and to consult Cape Verde side on the components of the draft report, JICA sent to Cape Verde the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Shigeru SHIMURA, Senior Advisor, Institute for International Cooperation, JICA, from 1<sup>st</sup> August to 12<sup>th</sup> August, 2001.

As a result of discussions, both sides have confirmed the main items described on the attached sheets.

Praia, 9<sup>th</sup> August, 2001

  
Mr. Shigeru SHIMURA  
Leader  
Japan International Cooperation Agency

  
Mr. Julio Morais  
General Director, International Cooperation,  
Ministry of Foreign Affairs Cooperation  
and Community

## ATTACHMENT

### 1. Components of the draft report

The Government of Cape Verde agreed and accepted the components of the draft report explained by the Team.

### 2. Japan's Grant Aid System

The Government of Cape Verde understands the Japan's Grant Aid Scheme as explained by the Team and will take necessary measures described in Annex-3 and Annex-4 signed on 24<sup>th</sup> April 2001 as the minutes of discussions of the basic design study, on condition that the Grant Aid by the Government of Japan is extended to the Project.

### 3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Cape Verde around January 2002.

### 4. Other Relevant Issues

4-1. Cape Verde side submitted to the Team the organization plan for administration and operation of the Praia Fishing Port extended by the Project. Cape Verde side agreed to allocate appropriate budget and personnel timely for proper operation and maintenance of the facilities and equipment to be provided by the Project.

4-2. Cape Verde side agreed to secure an appropriate leveled and cleared temporary construction yard and a dumping area of dredged material near the Project site.

4-3. Cape Verde side requested consulting service to make the Project more effective. And both sides agreed to include technical advice into the Project as the soft component for better operation and management of the fishing port.

4-4. Cape Verde side agreed to make a request to the Government of Japan for conversion of the existing fish handling shed into fishing gear lockers to be implemented by the Project.

4-5. Cape Verde side agreed to take necessary measures including temporary berthing restriction to the existing wharf and breakwater to secure smooth and timely progress of the Project.

4-6. Cape Verde side promised that the Government of Cape Verde would carry out Environmental Impact Assessment, if necessary, and consider not to hinder the smooth implementation of the Project.

## Appendix-5 Cost Estimation Borne by Recipient Country

Cost to be borne by the Government of Cape Verde is estimated to be approximately 920,000 Ecv whose detailed are as follows.

a) Electricity Supply : AC380/220V, 50Hz, CV100SQ-4C	920,000Ecv
--	------------

# Appendix 6.1 Wave Condition at Cape Verde

Table A.6.1-1. Distribution of Wave Direction and Significant Wave Height

SIGNIFICANT WAVE HEIGHT (METERS) / TOTAL WAVE DIRECTION (DEGREES) -- [PERCENT OCCURRENCE]

U.S. Navy Operational Spectral Ocean Wave Model Data Set

14.9N 23.5W  
85 - 95

## ANNUAL

SIGNIFICANT WAVE HEIGHT (METERS)				TOTAL WAVE DIRECTION (DEGREES)													
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
=	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
> .0	<= .5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.5	<= 1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.0	<= 1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5	<= 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.0	<= 2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5	<= 3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.0	<= 3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	<= 4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.0	<= 4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5	<= 5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	<= 5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.5	<= 6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.0	<= 6.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.5	<= 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.0	<= 7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.5	<= 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.0	<= 8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.5	<= 9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0	<= 9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.5	<= 10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
> 10.0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	21.3	42.2	22.3	6.2	0.4	-	-	-	-	-	-	-	0.5	4.9	2.1	100.0

[Average Hsig for ANNUAL is 2.34]

Number of Observations: 11545

( "\*" = less than .05 percent)

Table A.6.1-2. Distribution of Significant Wave Height and Wave Period  
SIGNIFICANT WAVE HEIGHT (METERS) / TOTAL MEAN PERIOD (SECONDS) -- [PERCENT OCCURRENCE]

U.S. Navy Operational Spectral Ocean Wave Model Data Set

14.9N 23.5W  
85 - 95

ANNUAL

SIGNIFICANT WAVE HEIGHT (METERS)		TOTAL MEAN PERIOD (SECONDS)																TOTAL	
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30		> 30
=	> .0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	.0 <= .5	-	-	0.1	0.3	0.1	*	-	-	-	-	-	-	-	-	-	-	-	-
	.5 <= 1.0	-	-	0.2	1.3	1.2	0.5	0.2	0.1	*	*	-	-	-	-	-	-	-	0.5
	1.0 <= 1.5	-	-	0.2	4.2	5.1	1.8	0.6	0.1	*	*	-	-	-	-	-	-	-	3.4
	1.5 <= 2.0	-	-	-	4.1	13.3	2.8	0.8	0.3	*	*	-	-	-	-	-	-	-	12.0
	2.0 <= 2.5	-	-	-	1.5	19.2	3.9	0.5	0.3	0.1	0.1	-	-	-	-	-	-	-	21.3
	2.5 <= 3.0	-	-	-	0.4	13.8	4.5	0.3	0.1	0.1	0.1	-	-	-	-	-	-	-	25.6
	3.0 <= 3.5	-	-	-	-	6.5	3.3	0.3	0.1	*	*	-	-	-	-	-	-	-	19.3
	3.5 <= 4.0	-	-	-	-	1.6	2.7	0.1	0.1	*	*	-	-	-	-	-	-	-	10.4
	4.0 <= 4.5	-	-	-	-	*	1.7	0.1	0.1	*	*	-	-	-	-	-	-	-	4.6
	4.5 <= 5.0	-	-	-	-	-	0.7	*	*	*	*	-	-	-	-	-	-	-	1.8
	5.0 <= 5.5	-	-	-	-	-	0.1	*	*	*	*	-	-	-	-	-	-	-	0.8
	5.5 <= 6.0	-	-	-	-	-	0.1	*	*	*	*	-	-	-	-	-	-	-	0.1
	6.0 <= 6.5	-	-	-	-	-	-	*	*	*	*	-	-	-	-	-	-	-	0.1
	6.5 <= 7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7.0 <= 7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.5 <= 8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8.0 <= 8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8.5 <= 9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9.0 <= 9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9.5 <= 10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
> 10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL	-	-	0.5	11.7	60.8	22.1	3.1	1.2	0.5	-	-	-	-	-	-	-	-	-	100.0

[Average Hsig for ANNUAL is 2.34]

Number of Observations: 11545

( "\*" = less than .05 Percent)

Data within a column are equal to or less than the numerical column heading and greater than that of the adjacent left column

## Appendix-6.2 Soil Conditions

Table A.6.2-1 Soil Conditions (Moisture Contents, Sieve Analysis)

### MOISTURE CONTENT

BORING	BH1	BH1	BH1	BH2	BH2	BH2	BH3	BH3	BH3
DEPTH(m)	2.20	3.45	4.45	6.45	7.45	8.45	1.45	6.60	8.05
MOISTURE CONTENT W%	31.20	34.10	35.50	29.60	24.30	30.90	17.00	22.00	37.20

### SIEVE ANALYSIS

BORING DEPTH(m) SIEVE(mm)	RATE OF THE PASSING THROUGH THE SIEVE								
	BH1 2.20	BH1 3.45	BH1 4.45	BH2 6.45	BH2 7.45	BH2 8.45	BH3 1.45	BH3 6.60	BH3 8.05
6.3	97	95.5	100	100	100	100	100	94	100
4.75	96	92.5	100	92	100	100	93.6	90.5	100
2	90	82	99	91.5	98.5	93	88	72	96
1	81	73	97.5	90	96.5	84.5	79	59	93.5
0.5	68.5	58	94	87	94	76	68.5	49.5	91
0.315	59	47.5	89	81	89.5	66	61.5	44.5	89
0.2	48	36	72	55.5	58	40	55	39.5	86.5
0.08	28	19.5	22	24.5	15.5	15.5	49.5	34	83



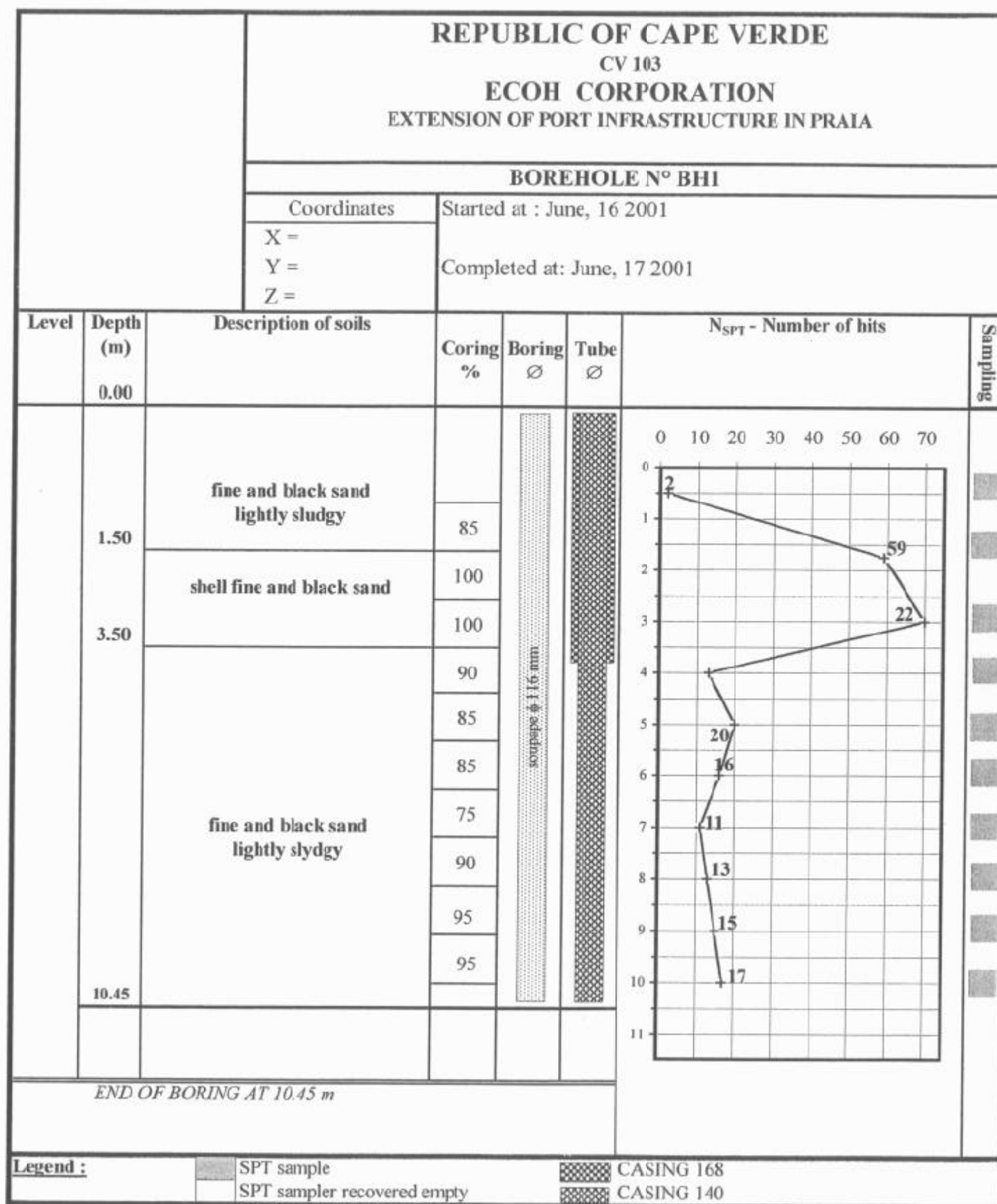


Figure A.6.2-1(1) Soil Conditions (Distribution of N-Value, BH1)

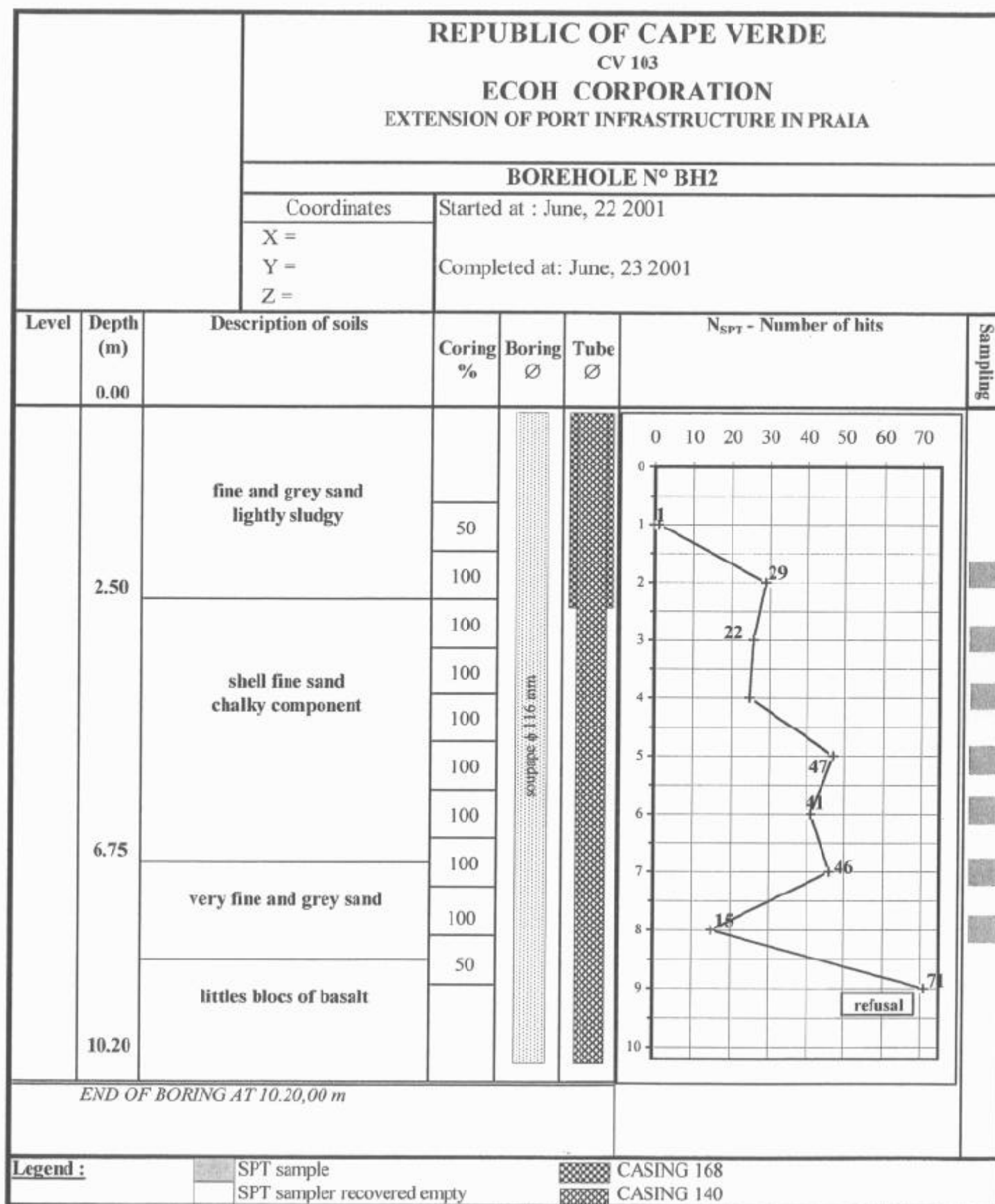


Figure A.6.2-1(2) Soil Conditions (Distribution of N-Value, BH2)

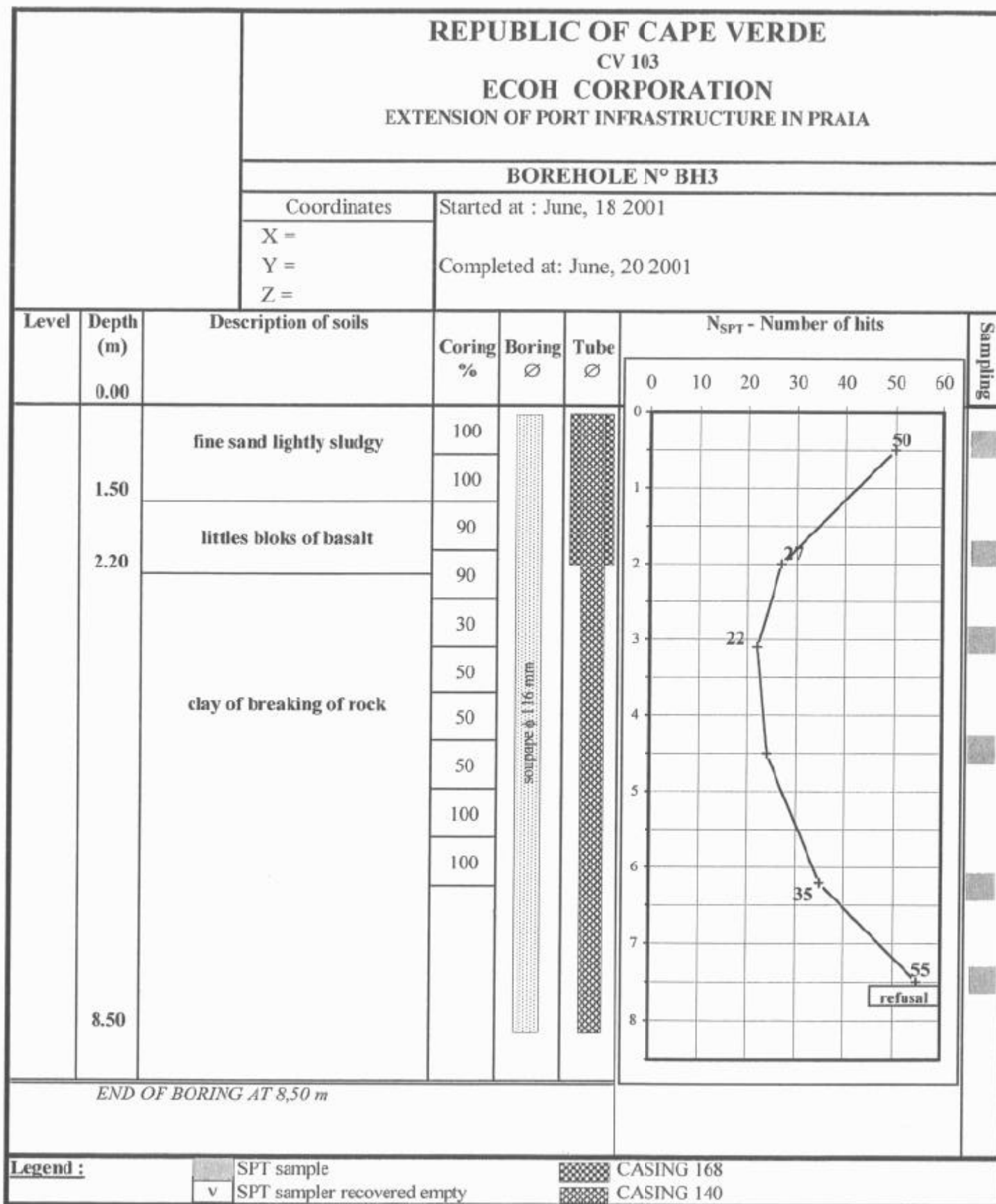


Figure A.6.2-1(3) Soil Conditions (Distribution of N-Value, BH3)

# PORT DE PECHE DE PRAIA

SONDAGE : BH1

PROFONDEUR : 2,20m

LESCWID

Période du 11/07/2001 au 12/07/2001

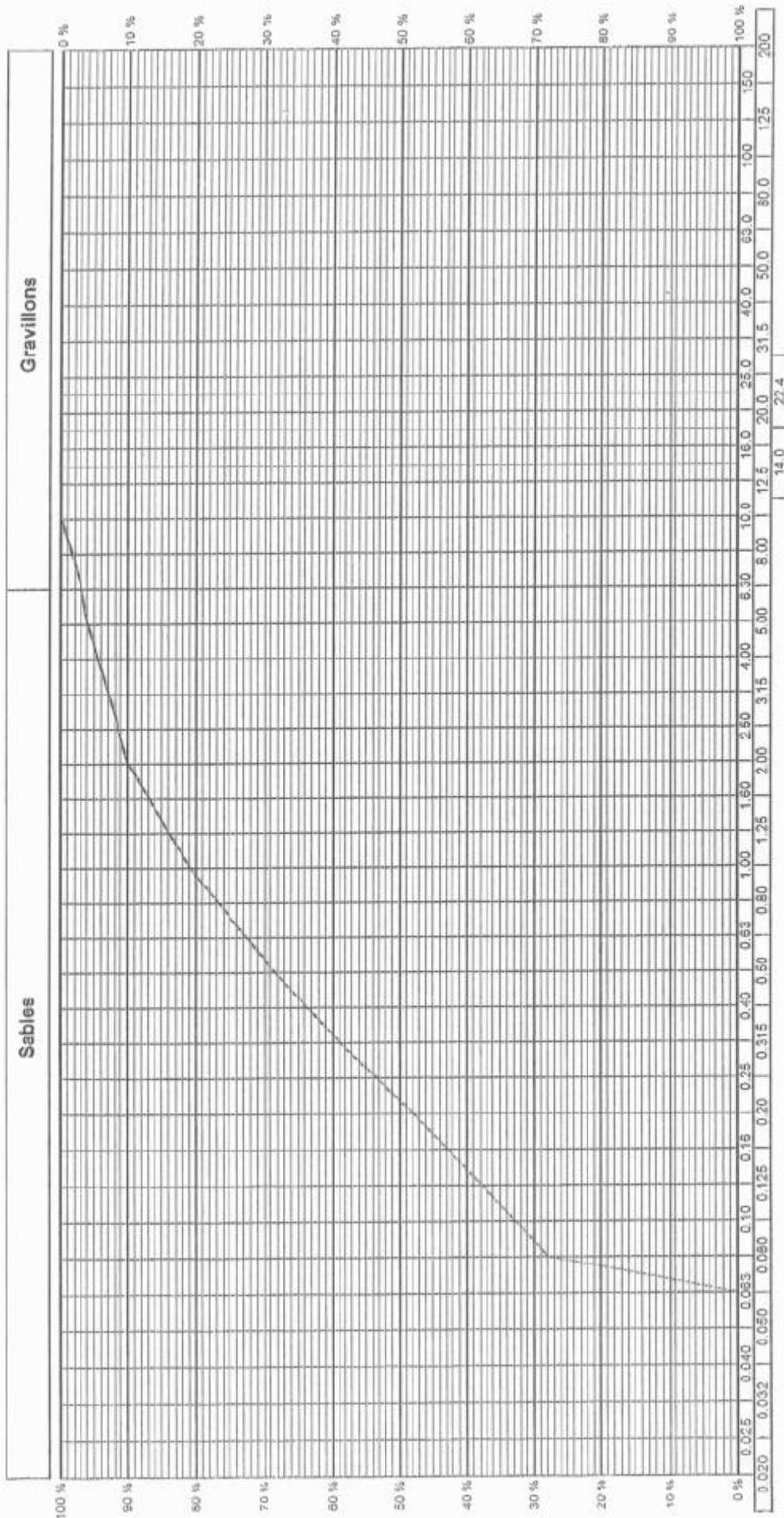
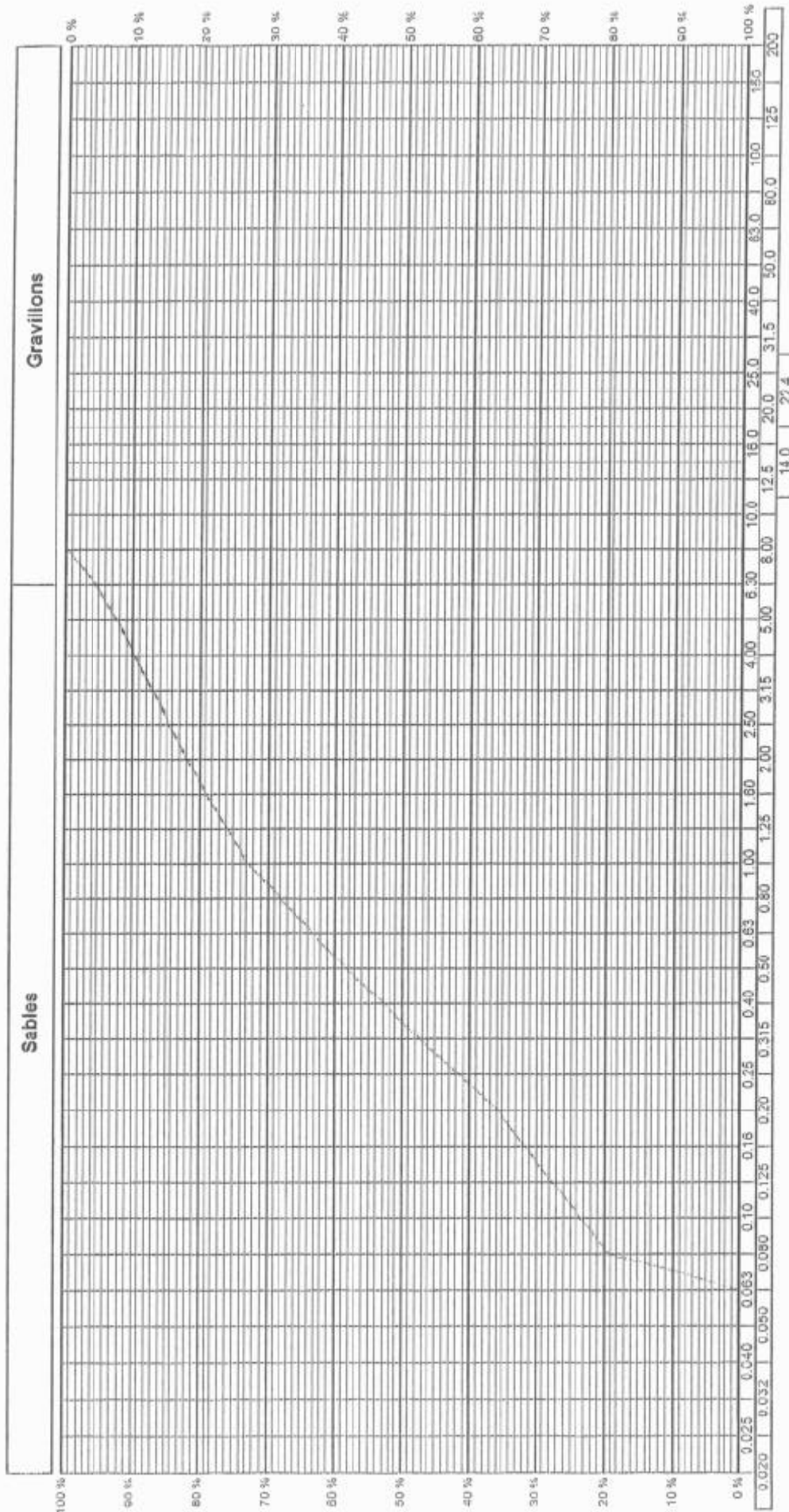


Figure A.6.2-2(1) Soil Conditions (Grading Curve, BH1, -2.20m)

TAMIS EN mm

**PORT DE PRAIA**  
**SONDAGE : BH1**  
 PROFONDEUR : 3,45m

Période du 12/07/2001 au 12/07/2001



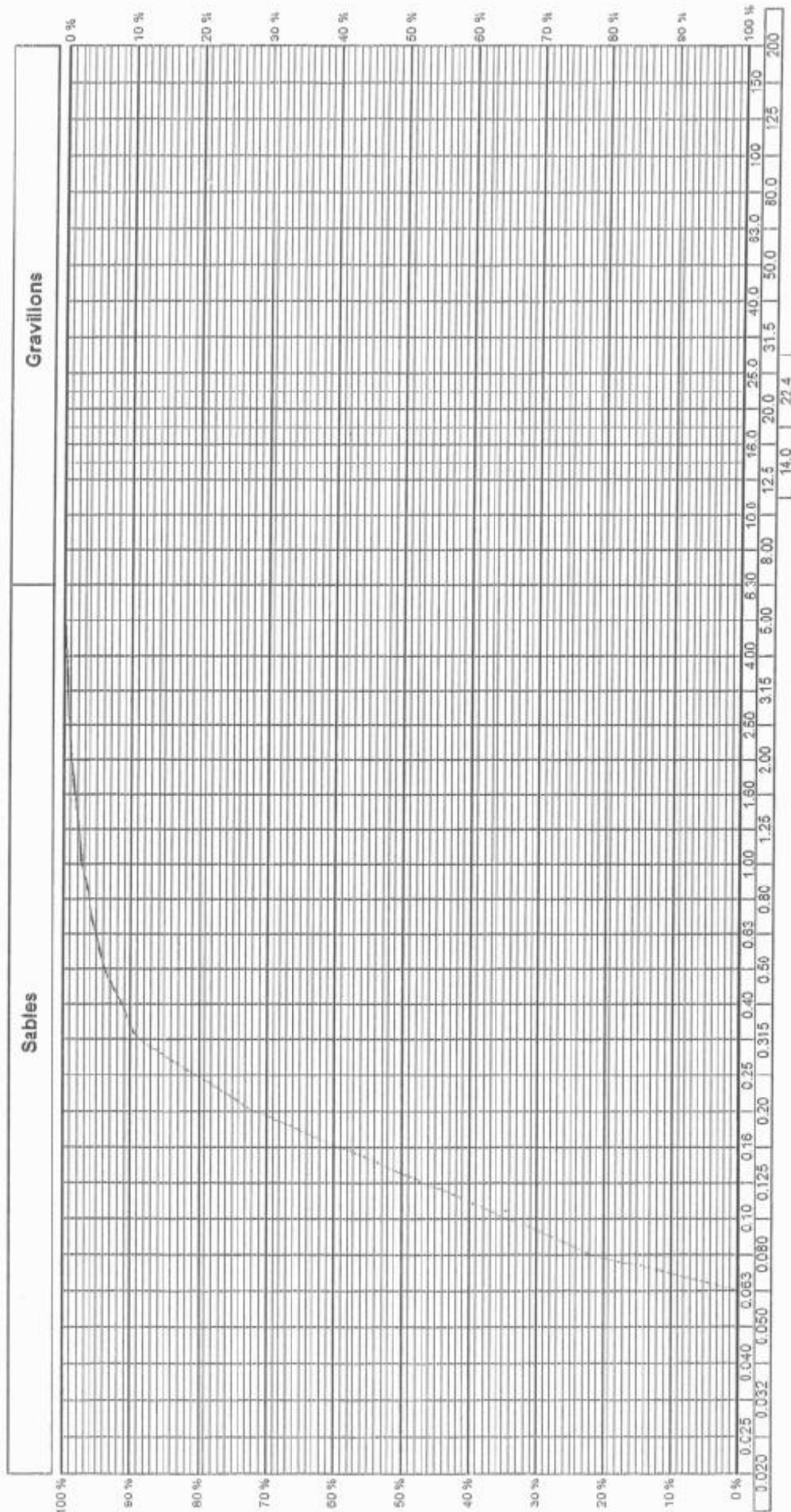
TAMIS EN mm

Figure A.6.2-2(2) Soil Conditions (Grading Curve, BH1, -3.45m)

**PORT DE PECHE DE PRAIA**  
**SONDAGE : BH1**  
**PROFONDEUR : 4,45**

LASOWER

Période du 12/07/2001 au 12/07/2001



TAMIS EN %

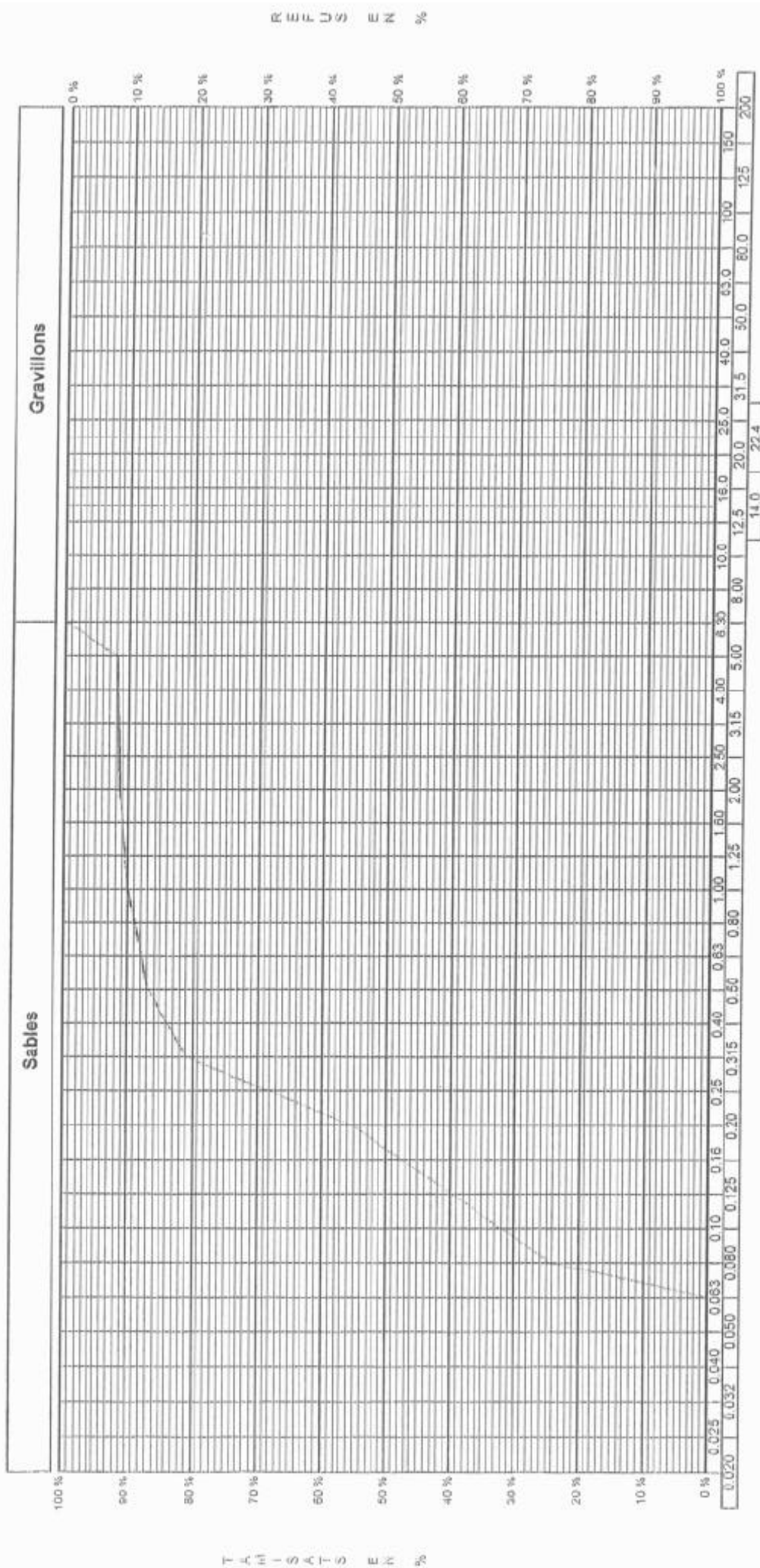
Figure A.6.2-2(3) Soil Conditions (Grading Curve, BH1, -4.45m)



**PORT DE PECHE DE PRAIA**  
**SONDAGE : BH2**  
 PROFONDEUR : 6.45m

Librairie

Période du 12/07/2001 au 12/07/2001



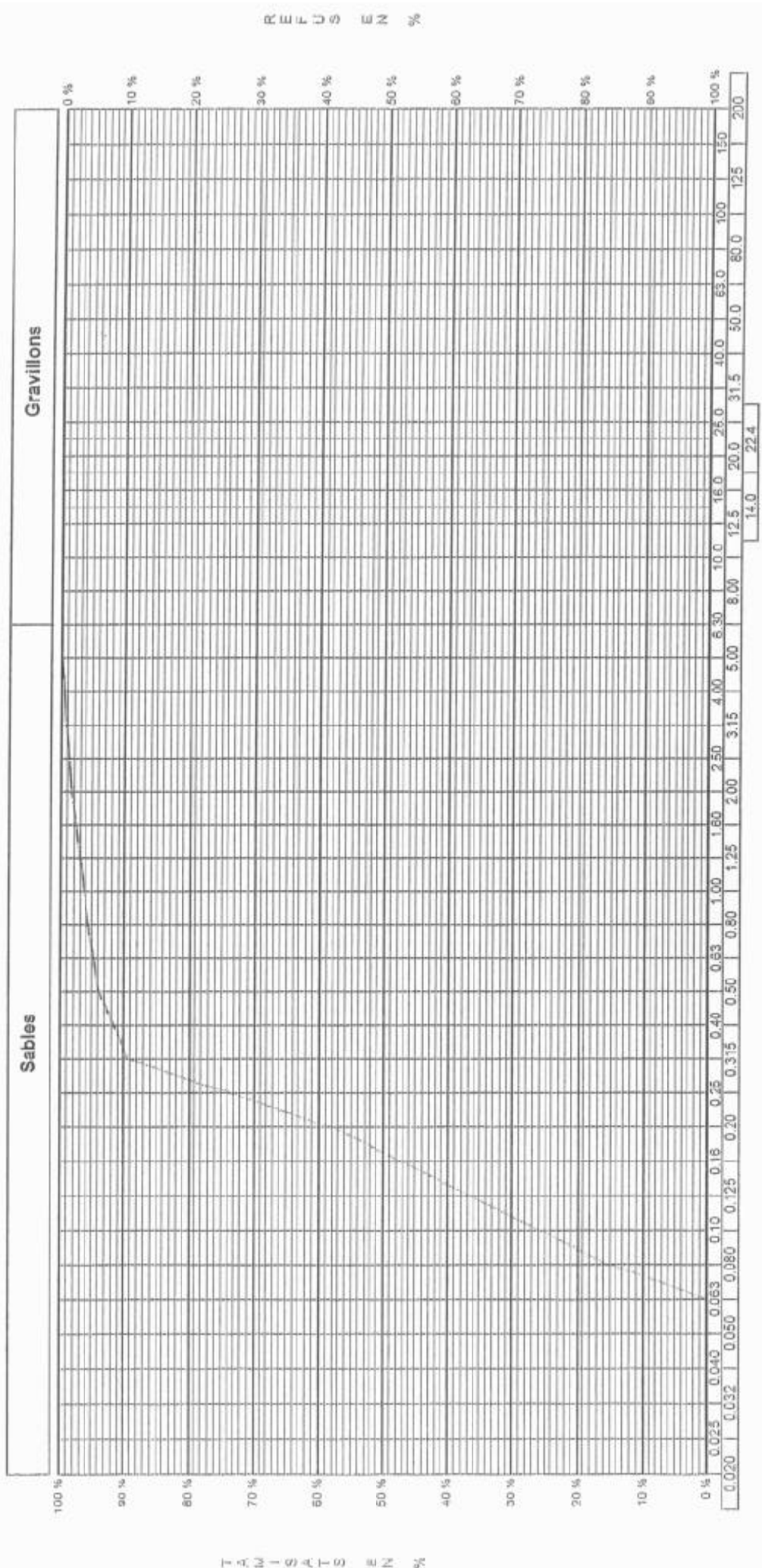
TAMIS EN mm

Figure A.6.2-2(4) Soil Conditions (Grading Curve, BH2, -6.45m)

**PORT DE PECHE DE PRAIA**  
**SONDAGE : BH2**  
 PROFONDEUR : 7,45m

LaboWit

Période du 12/07/2001 au 12/07/2001



T A M I S - 0 A T - 0 E N %

Figure A.6.2-2(5) Soil Conditions (Grading Curve, BH2, -7.45m)



# PORT DE PECHE DE PRAIA

SONDAGE : BH2

PROFONDEUR : 8,45m

Période du 12/07/2001 au 12/07/2001

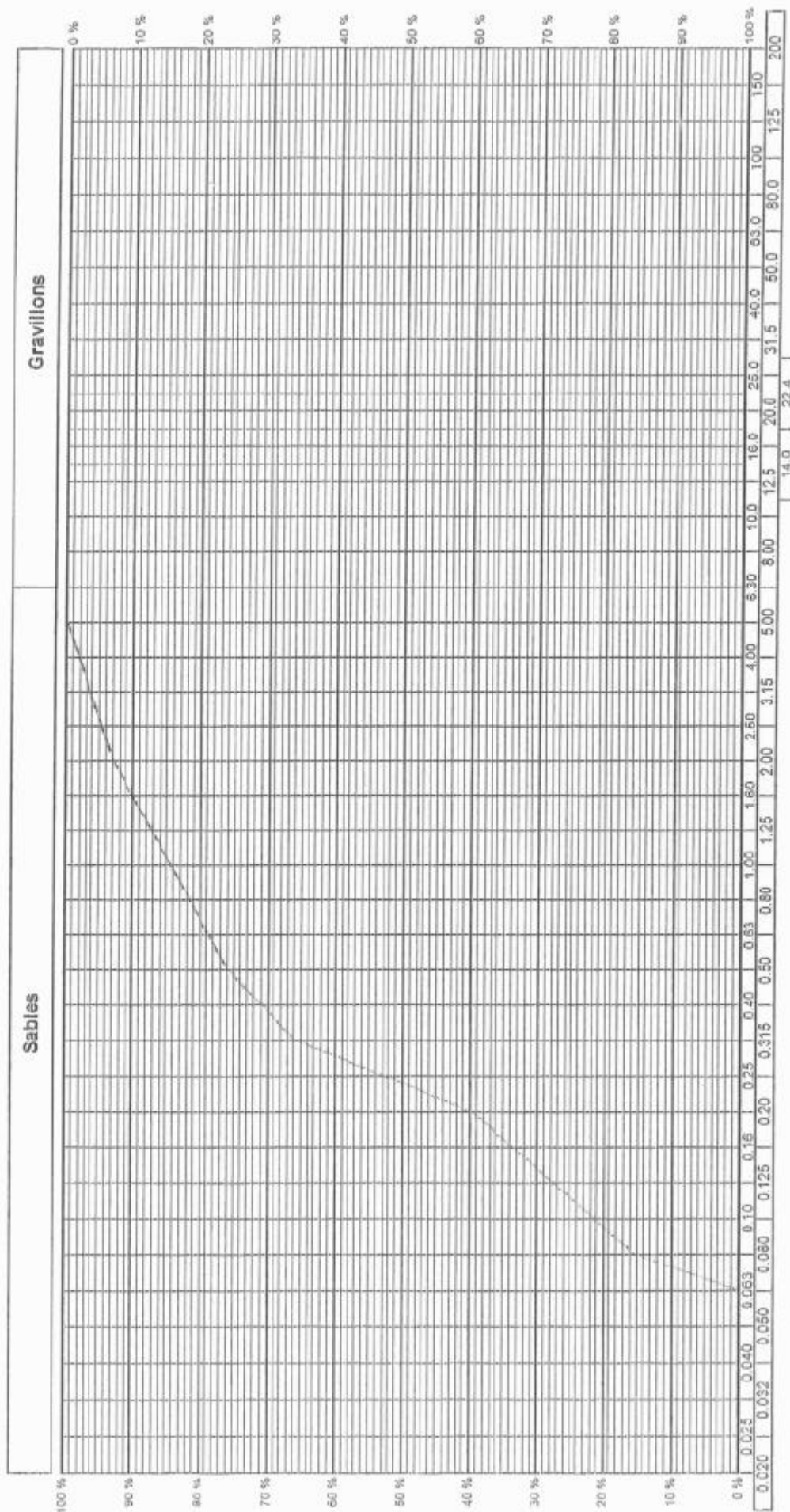


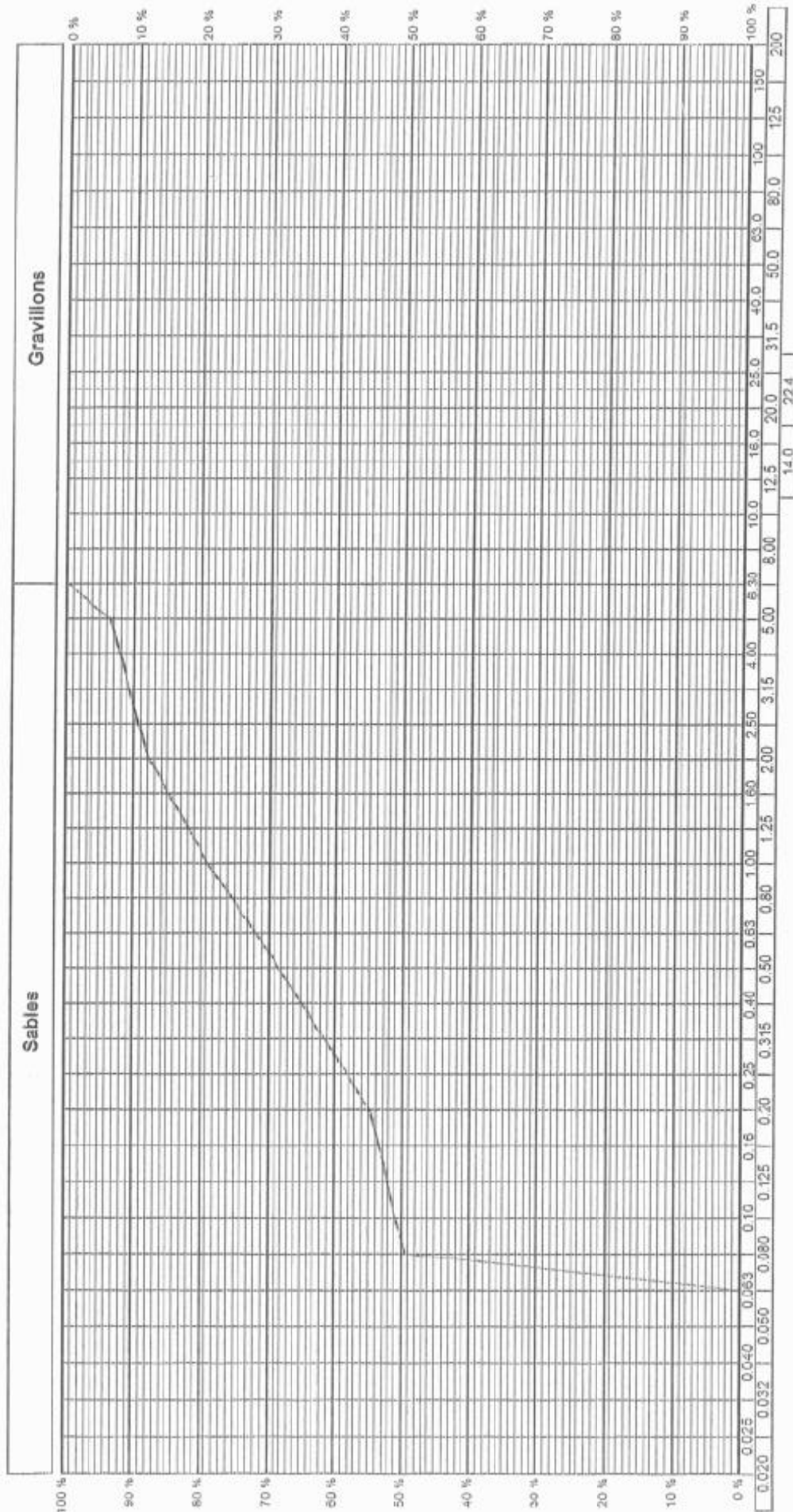
Figure A.6.2-2(6) Soil Conditions (Grading Curve, BH2, -8.45m)

# PORT DE PECHE DE PRAIA

SONDAGE : BH3  
PROFONDEUR : 1,45

Labo 20102

Période du 11/07/2001 au 11/07/2001



T A M I S E N %

R E F U S E N %

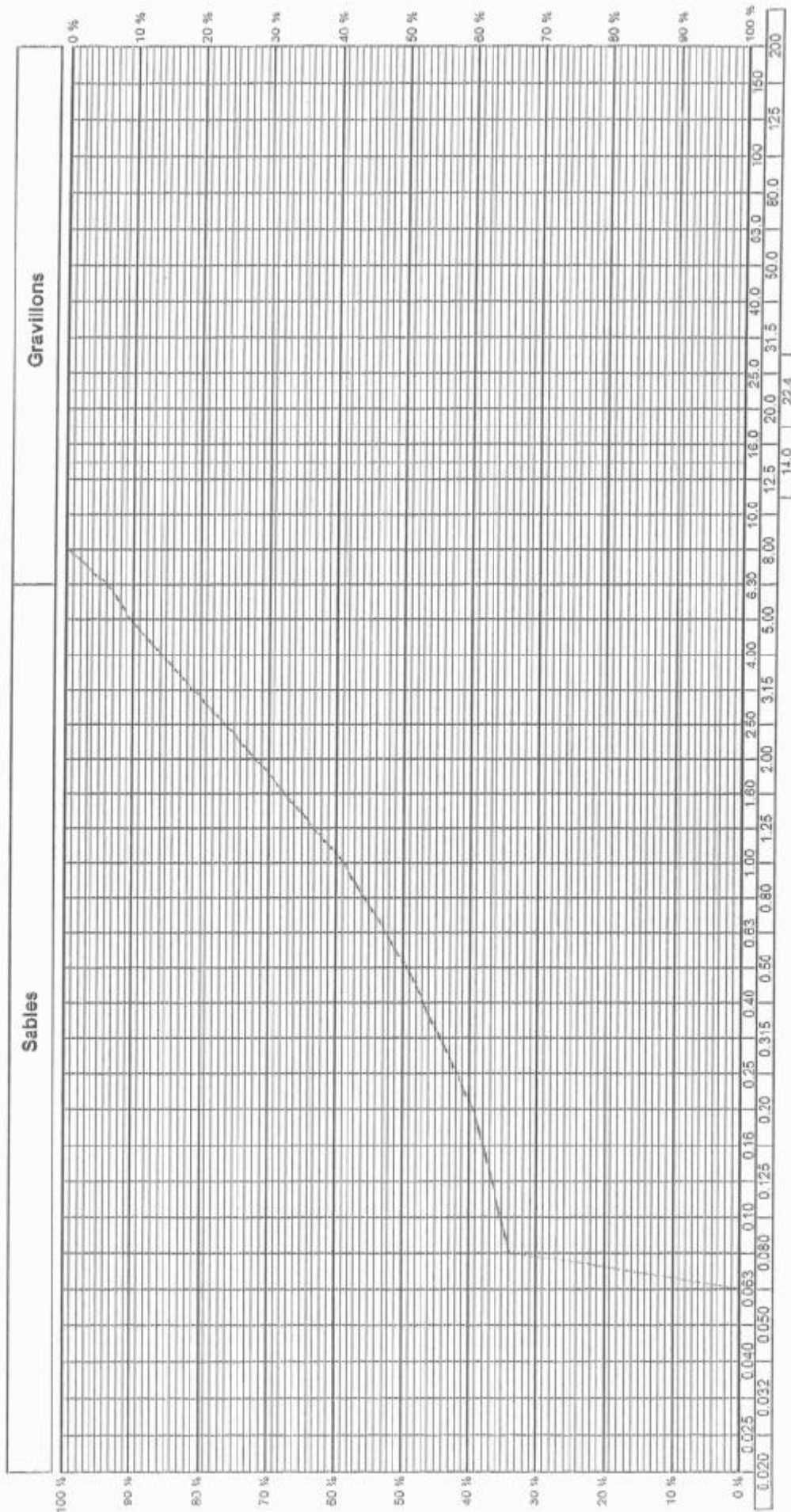
Figure A.6.2-2(7) Soil Conditions (Grading Curve, BH3, -1.45m)

# PORT DE PECHE DE PRAIA

SONDAGE : BH3  
PROFONDEUR : 6,60m

L22-1102

Période du 12/07/2001 au 12/07/2001



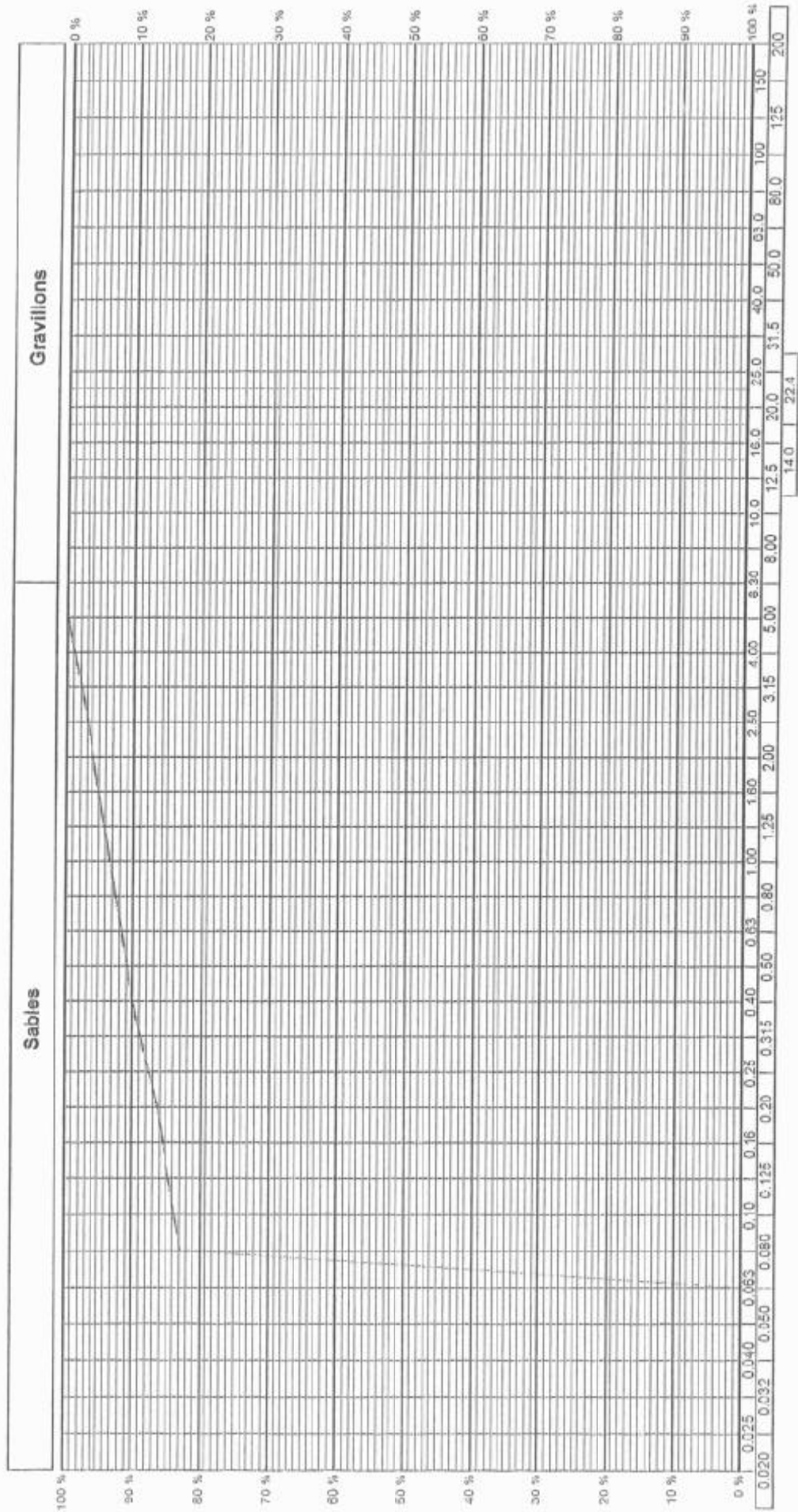
TAMIS EN mm

Figure A.6.2-2(8) Soil Conditions (Grading Curve, BH3, -6.60m)

**PORT DE PECHE DE PRAIA**  
**SONDAGE : BH3**  
 PROFONDEUR : 8,05m

LABORATOIRE

Période du 12/07/2001 au 12/07/2001



TAMIS EN mm

Figure A.6.2-2(9) Soil Conditions (Grading Curve, BH3, -8.05m)

### Appendix 6.3 Dimension of Fishing Boats

**Table A.6.3-1 Dimensions of Industrial Fishing Boats**

[illegible]



**Table A.6.3-2 Dimensions of Artisanal Fishing Boats**

RELAÇÃO DE EMBARCAÇÕES DE PESCA LOCAL - REGISTRO NA CAPITANIA DOS PORTOS DE SOFIAVENC

Nº	NAVIO	ARMADOR	CONSTRUÇÃO		COMP.	BOCA	PONTAL	Nº REGISTO	DATA	TONS	PORTO ABARMENTO	TRIPULAÇÃO
			LOCAL	ANO								
C1	Claudia	Valério A. Freitas	Praia	1993	6,20	1,96	0,66	0008-P/CPS/93	26.9.93	2,00	Praia	
C2	Cula	Herculano L. Seneço	Praia	1993	6,00	1,96	0,66	0009-P/CPS/93	30.9.93	2,00	Praia	
C3	Gerson e Atie Bons Amigos	Retílio T.S. Sequeira	Praia	1993	5,14	1,91	1,81	0011-P/CPS/93	10.11.93	1,80	Praia	
C4	Adilson Bjaló	Antônio S. dos Santos	Praia	1993	6,00	1,75	1,96	0014-P/CPS/93	10.11.93	1,90	Praia	
C5	Deisy	João Manuel B. Teixeira	Praia	1993	7,00	2,00	0,82	0016-P/CPS/93	19.11.93	2,07	Praia	
C6	Maldine	Mário de F. Monteiro	Praia	1993	4,40	1,40	0,52	0018-P/CPS/93	9.12.93	0,80	Praia	
C7	Duas Marias	Maria Novo Vieira Lopes	Praia	1993	3,75	1,22	0,27	0019-P/CPS/93	9.12.93	0,30	Praia	
C8	Carlitos	José Manuel Cabral	Praia	1993	5,00	1,75	3,71	0021-P/CPS/93	13.13.93	3,71	Praia	
C9	C.R. 1/2	Alice Lima Medina	Praia	1993	6,00	2,00	1,10	0022-P/CPS/93	13.12.93	3,30	Praia	
C10	C.R. 1/3	Alice Lima Medina	Praia	1993	6,00	2,00	1,10	0023-P/CPS/93	13.12.93	3,37	Praia	
C11	Luiza	Francoisco Tavares	Praia	1993	4,40	1,30	0,52	0024-P/CPS/93	14.12.93	0,74	Praia	
C12	Zelmirinha	Raul Santos da Cruz	Praia	1993	4,60	1,30	0,52	0025-P/CPS/93	14.12.93	0,77	Praia	
C13	Claudina	Cipriano Fortes	Praia	1993	6,00	1,75	0,75	0026-P/CPS/93	14.13.93	1,96	Praia	
C14	Os Irmãos	João P. Correia	Praia	1993	5,40	2,00	1,50	0027-P/CPS/93	14.12.93	4,00	Praia	
C15	Cidália	Francoisco de Pina	Praia	1993	4,00	1,30	0,50	0028-P/CPS/93	14.12.93	0,65	Praia	
C16	Vulcão	Agnelo C. de Barros	Praia	1993	6,00	2,00	1,00	0029-P/CPS/93	21.12.93	3,00	Praia	
C17	Djene	Agnelo Pereira	Praia	1993	4,00	1,26	0,58	0030-P/CPS/93	21.12.93	0,73	Praia	
C18	Sol Pesca I	João de C. Castro Lima	Praia	1994	6,00	1,80	0,75	0044-P/CPS/93	3.2.94	2,02	Praia	
C19	Luizinha	Ana Maria dos S. Borges	Praia	1994	6,00	1,90	1,96	0046-P/CPS/94	23.2.94	1,96	Praia	
C20	Golfinho	Roberto Mendes	Praia	1994	6,50	2,00	0,79	0051-P/CPS/94	29.3.94	2,56	Praia	
C21	Paula	Henrique de Barros	Praia	1994	6,00	1,75	0,75	0067-P/CPS/94	31.6.94	1,96	Praia	
C22	Denitinha	José Lopes Monteiro	Praia	1994	6,50	2,00	0,79	0089-P/CPS/94	14.9.94	2,56	Praia	



RELATÓRIO DE EMBARCAÇÕES DE PESCA LOCAL REGISTADO NA CAPITANIA DOS PORTOS DE SCAVENIC

Nº	NAVIO	ARMADOR	CONSTRUÇÃO		COMP.	BOCA	PONTAL	Nº REGISTO	DATA	TONS	PORTO ARMAMENTO	TRIPULAÇÃO
			LOCAL	ANO								
23	Mito	Antônio F. Silva	Praia	1994	6,20	1,10	0,80	1890-P/CPS/94	5.10.94	2,50	Praia	
24	Solângela	Luís Dias de Rosa	Praia	1994	6,00	1,75	0,75	1899-P/CPS/94	30.3.94	1,96	Praia	
25	Neusa	Adriano Dias Seneado	Praia	1995	6,60	2,40	1,35	162-P/CPS/94	26.9.95	5,34	Praia	
26	Nicholsonian II	Julio César M. de Carvalho Many Nichols de Carvalho	Praia	1995	6,00	1,75	0,75	184-P/CPS/95	11.12.95	1,96	Praia	
27	Santa Esterina	Silvino Borges Lopes	Praia	1996	5,95	1,50	0,70	190-P/CPS/96	26.2.96	1,66	Praia	
28	Deus te Ajude	Antônio Vaz Moreno	Praia	1996	5,5	1,5	0,50	194-P/CPS/96	14.3.96	1,4	Praia	
29	Romina	Albertina M.T.R. Seneado	Praia	1996	6,00	1,75	0,75	197-P/CPS/96	15.4.96	1,96	Praia	
30	Denity	Albertina N.T.R. Seneado	Praia	1996	6,00	1,75	0,75	198-P/CPS/96	15.4.96	1,96	Praia	
31	Felicidade	Felicidade R. Seneado	Praia	1996	6,10	1,90	0,85	198-P/CPS/96	17.4.96	2,46	Praia	
32	Quenira	Julio Mendes Mateus	Praia	1996	5,20	1,40	1,10	211-P/CPS/96	11.6.96	2,02	Praia	
33	Dilmar	Eduardo Lopes Coubal	Praia	1996	6,50	1,80	0,70	218-P/CPS/96	4.10.96	2,47	Praia	
34	Celita II	José Sanches	Praia	1996	4,20	1,20	0,52	219-P/CPS/96	8.10.96	0,65	Praia	
35	Niriam	Marques dos Reis	Praia	1996	4,40	1,20	0,60	220-P/CPS/96	8.10.96	0,79	Praia	
36	Pátia	Manoel dos Santos	Praia	1996	4,40	1,30	0,56	221-P/CPS/96	8.10.96	0,80	Praia	
37	Nico	José Lopes Tavares	Praia	1996	6,00	1,75	0,75	222-P/CPS/96	8.10.96	1,96	Praia	
38	Ariana	Luís Vaz	Praia	1996	5,00	1,60	0,60	225-P/CPS/96	15.10.96	1,02	Praia	
39	São Pedro	Sotero Tavares	Praia	1996	4,00	1,50	0,50	229-P/CPS/96	5.11.96	0,75	Praia	
40	Final Notice	José Maria Lima Barbosa	Praia	1997	6,6	2,35	1,00	242-P/CPS/97	23.1.97	3,87	Praia	
41	Quenira	Ana Mameia Alves	Praia	1997	4,40	1,20	0,72	265-P/CPS/97	3.10.97	0,72	Praia	
42	Carla	Carlos Alberto	Praia	1997	5,00	1,70	0,70	269-P/CPS/97	30.10.97	1,48	Praia	
43	Deus te Ajude	Luís Lopes de Andrade	Praia	1997	6,30	1,80	0,90	272-P/CPS/97	20.11.97	2,55	Praia	
44	Ranpesca	Antônio J. Ramalho	Praia	1997	6,00	1,75	0,75	273-P/CPS/97	31.12.97	1,96	Praia	



RELACÃO DE EMBARCAÇÕES DE PESCA LOCAL REGISTADO NA CAPITANIA DOS PORTOS DE SOTAVENTO

Nº	NAVIO	ARMADOR	CONSTRUÇÃO		OCUP.	BOCA	PORTAL	Nº REGISTO	DATA	TONS	PORTO ABASTECIMENTO	TRIPULAÇÃO
			LOCAL	ANO								
45	Esprito Santo	Eduardo Tavares	Praia	1998	4,30	1,44	0,84	281-P/CPS/98	10.2.98	1,30	Praia	
46	São Simão de Ajuda	Hipólito da Viga	Praia	1998	4,10	1,35	0,50	282-P/CPS/98	16.2.98	0,61	Praia	
47	Rainha do Mar	João José M. de Sousa	Praia	1998	5,00	1,75	0,75	283-P/CPS/98	19.2.98	2,00	Praia	
48	Esperança	Sergio Santos e J. Vicente	Praia	1998	6,00	1,75	0,75	286-P/CPS/98	21.3.98	1,96	Praia	
49	Lapa Grúia	José António Pereira	Praia	1998	6,5	1,90	0,70	299-P/CPS/98	8.6.98	2,16	Praia	
50	Marie-Zinha	Rita Fernandes Pereira	Praia	1998	5,75	1,80	0,80	303-P/CPS/98	5.6.98	2,07	Praia	
51	Celypso	Sergio dos Santos	Praia	1998	6,00	1,75	0,80	309-P/CPS/98	16.10.98	2,10	Praia	
52	Gabrielle	Jean Charles Cambou	Praia	1998	6,5	2,00	0,75	310-P/CPS/98	30.11.98	2,04	Praia	
53	Cruzreiro	Daniel Mendes	Praia	1998	8,40	2,60	1,10	314-P/CPS/98	16.12.98	6,06	Praia	
54	Liliana	Raísel Vaz Tavares	Praia	1998	5,00	1,75	1,20	315-P/CPS/98	16.12.98	2,25	Praia	
55	Zezito	Gerle Feiza B.R. Silva	Praia	1999	5,60	2,05	0,75	321-P/CPS/98	25.1.99	2,15	Praia	
56	Jair	Carla Paiza B.R. Silva	Praia	1999	6,50	2,05	0,75	322-P/CPS/99	25.1.99	2,15	Praia	
57	Moca	Carlos Alberto Costa	Praia	1999	5,60	1,86	0,96	377-P/CPS/99	2.6.99	2,38	Praia	
58	Lenira	Rita Gallé K. Mará	Praia	1999	6,00	1,85	0,69	390-P/CPS/99	27.7.99	1,91	Praia	
59	Vulcão	Manuel Gomes	Praia	2000	4,50	1,50	0,56	430-P/CPS/00	18.2.00	1,45	Praia	
60	Na Era de Fátima	Francisco de Pina	Praia	2000	3,40	1,60	0,60	441-P/CPS/00	29.3.00	0,61	Praia	
61	Paula	Joaquim Alves	Praia	2000	6,00	1,90	0,75	443-P/CPS/00	19.4.00	2,13	Praia	
62	Rosina	Joaquim Alves	Praia	2000	6,00	1,90	0,75	444-P/CPS/00	19.4.00	2,13	Praia	
63	Dilza	José Tavares Feixeira	Praia	2000	6,50	1,80	0,75	454-P/CPS/00	15.5.00	2,19	Praia	
64	Nilta	José Tavares Feixeira	Praia	2000	6,50	1,80	0,75	455-P/CPS/00	15.5.00	2,19	Praia	
65	São Pedro	Aguinaldo S. R. Lopes	Praia	2000	4,10	1,20	0,75	459-P/CPS/00	17.6.00	0,92	Praia	
66	Shirley Iglesado	Emanuel Joaquim S. Delgado	Praia	2001	4,75	1,40	0,55	477-P/CPS/00	19.12.00	2,91	Praia	
67	Beatriz	José Nunes da Graça	Praia	2001	6,20	2,00	0,80	480-P/CPS/00	5.2.01	2,36	Praia	
68	Edelise	José Nunes da Graça	Praia	2001	6,50	2,10	0,80	481-P/CPS/01	5.2.01	2,73	Praia	









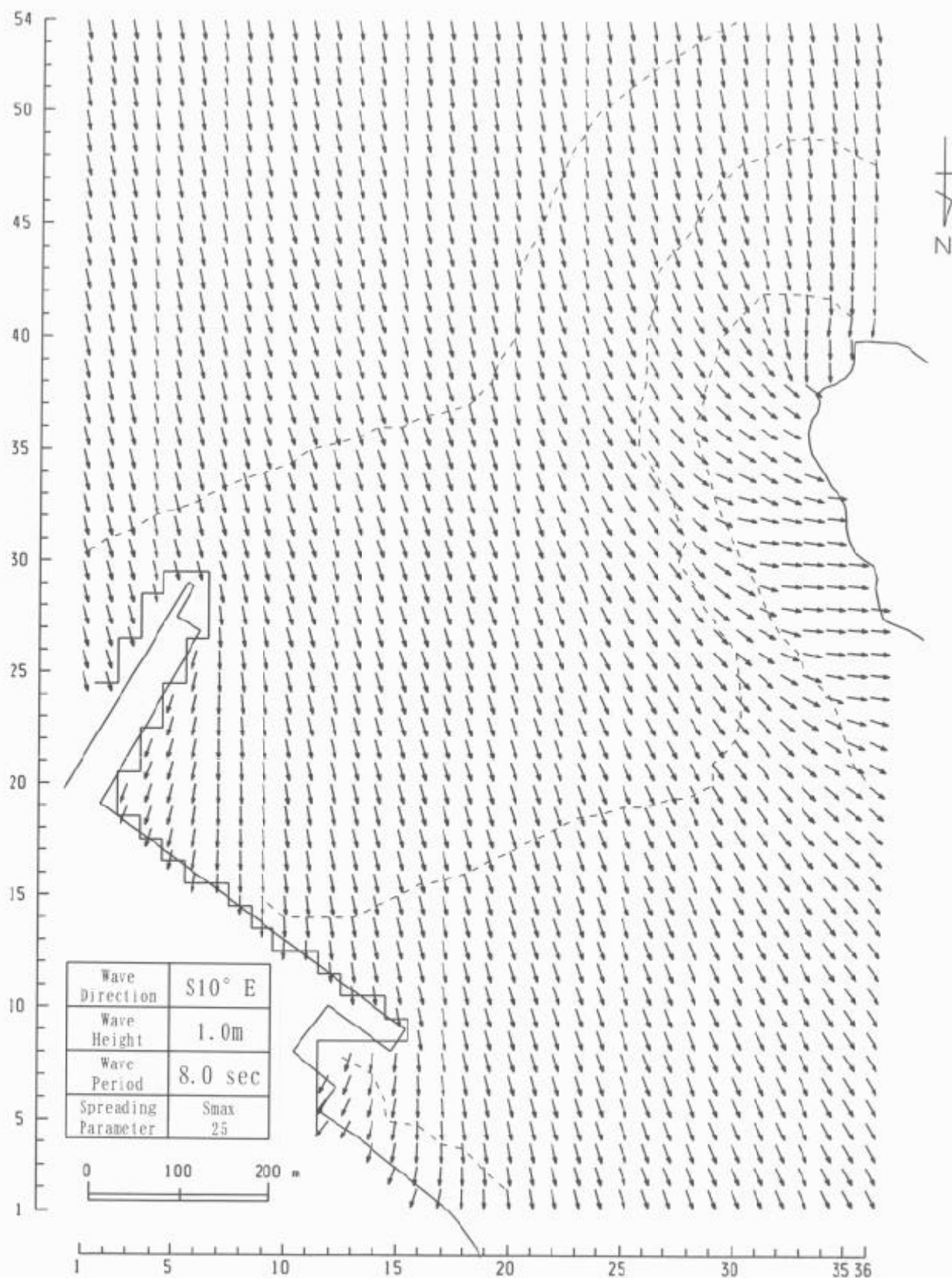


Figure A.6.4-2 Distribution of Wave Direction (Incident Waves, Present Condition)





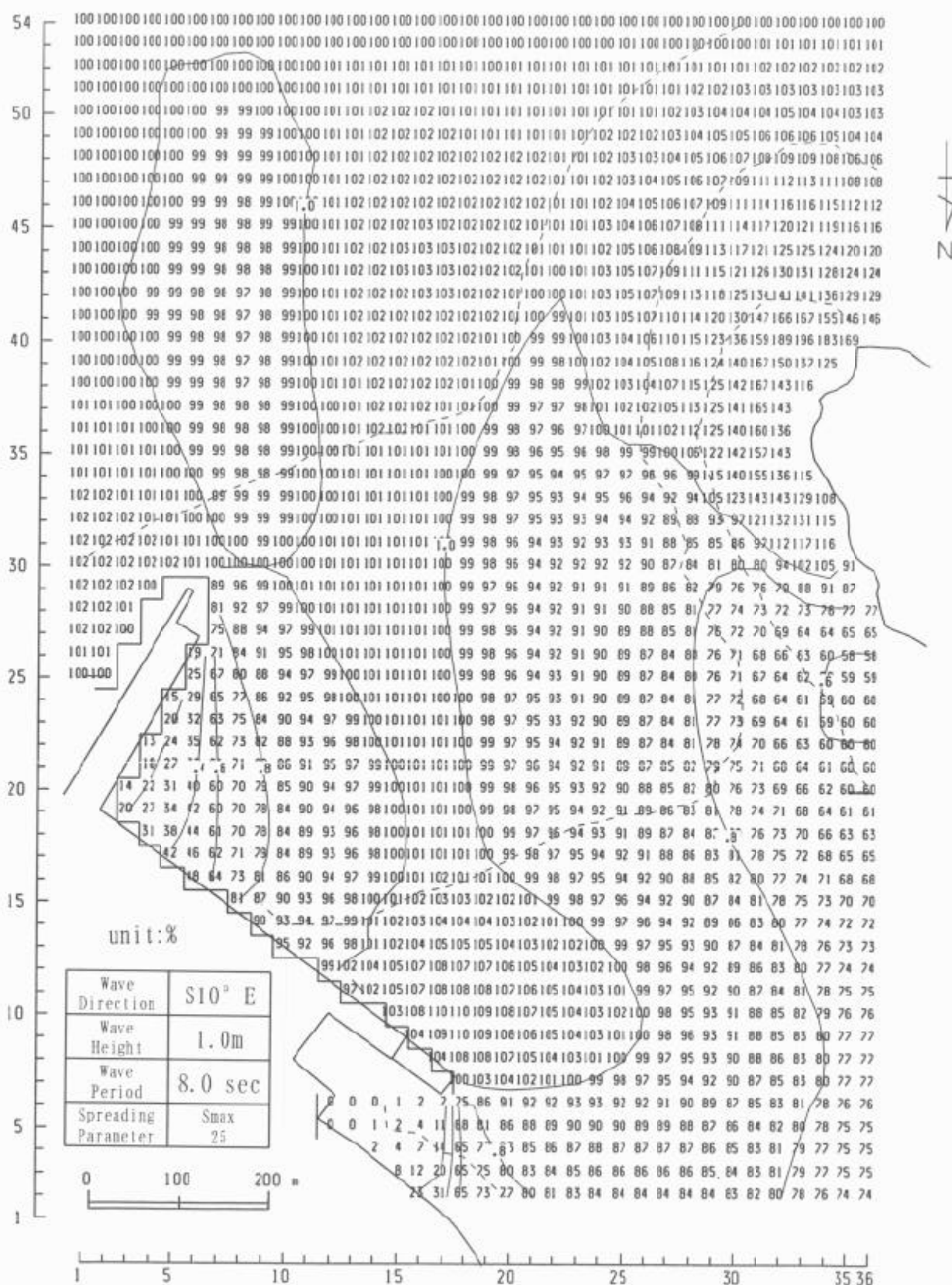


Figure A.6.4-4 Distribution of Wave Height Ratio  
(Compound Waves, 80m Straight Extension of Breakwater)





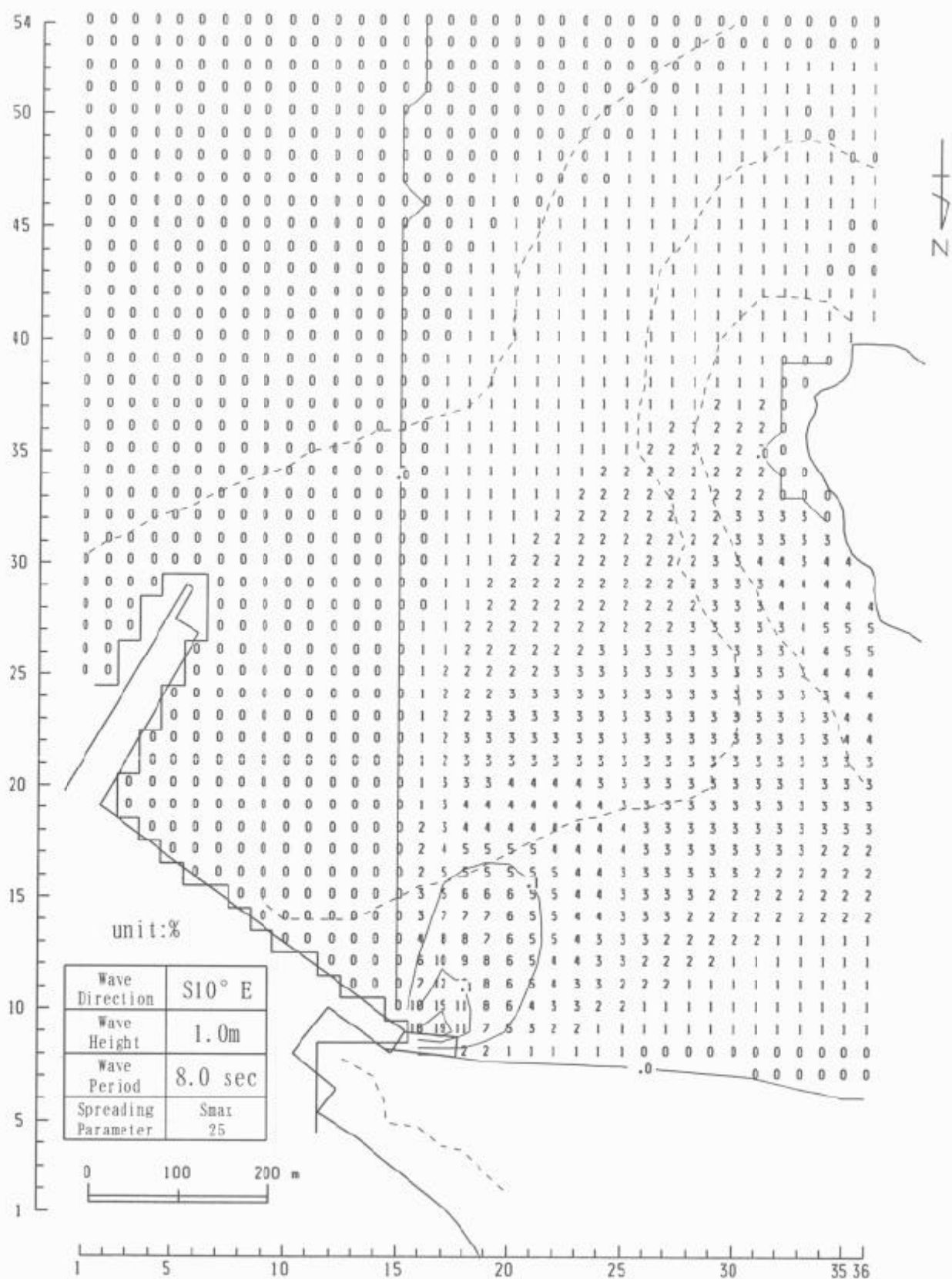


Figure A.6.4-7 Distribution of Wave Height Ratio  
(Difference between Present Condition, 70m 30° Bending Extension of Breakwater)



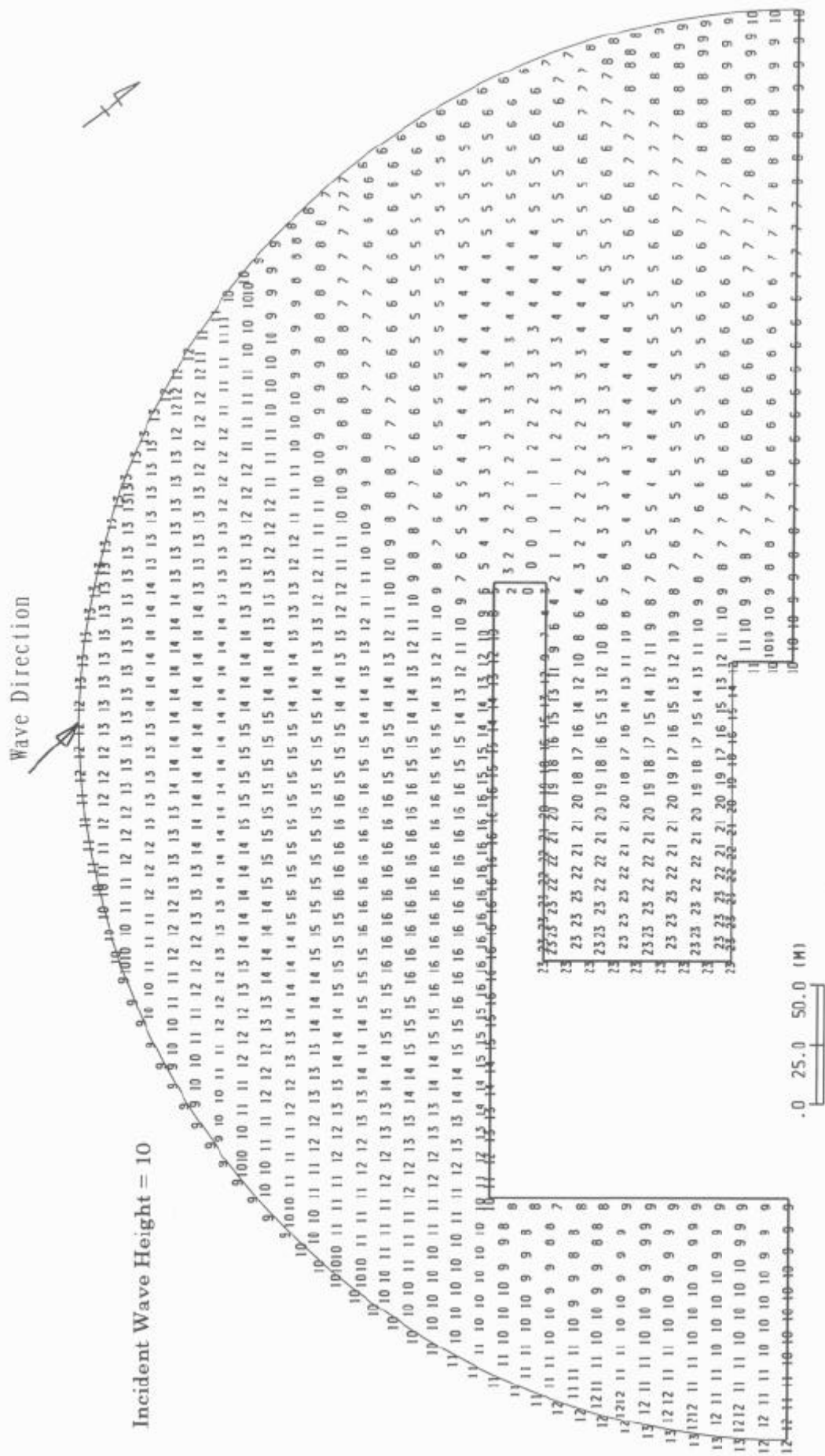


Figure A.6.5-1 Distribution of Wave Height Ratio for Long Period Waves  
(80m Straight Extension of Breakwater, Wave Direction: S, Wave Period: 100s)

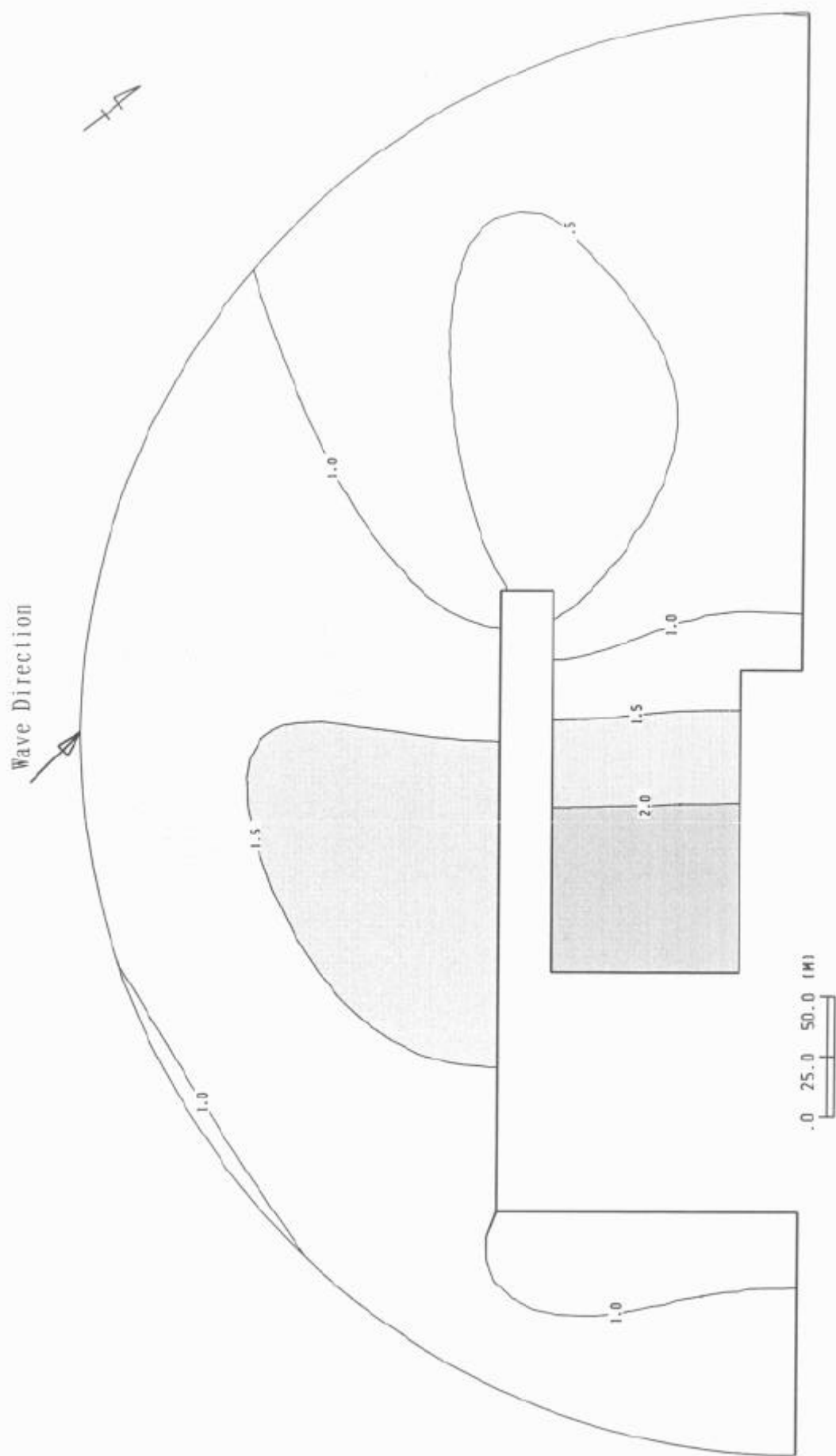


Figure A.6.5-2 Wave Height Ratio Contour Lines  
(80m Straight Extension of Breakwater, Wave Direction: S, Wave Period: 100s)

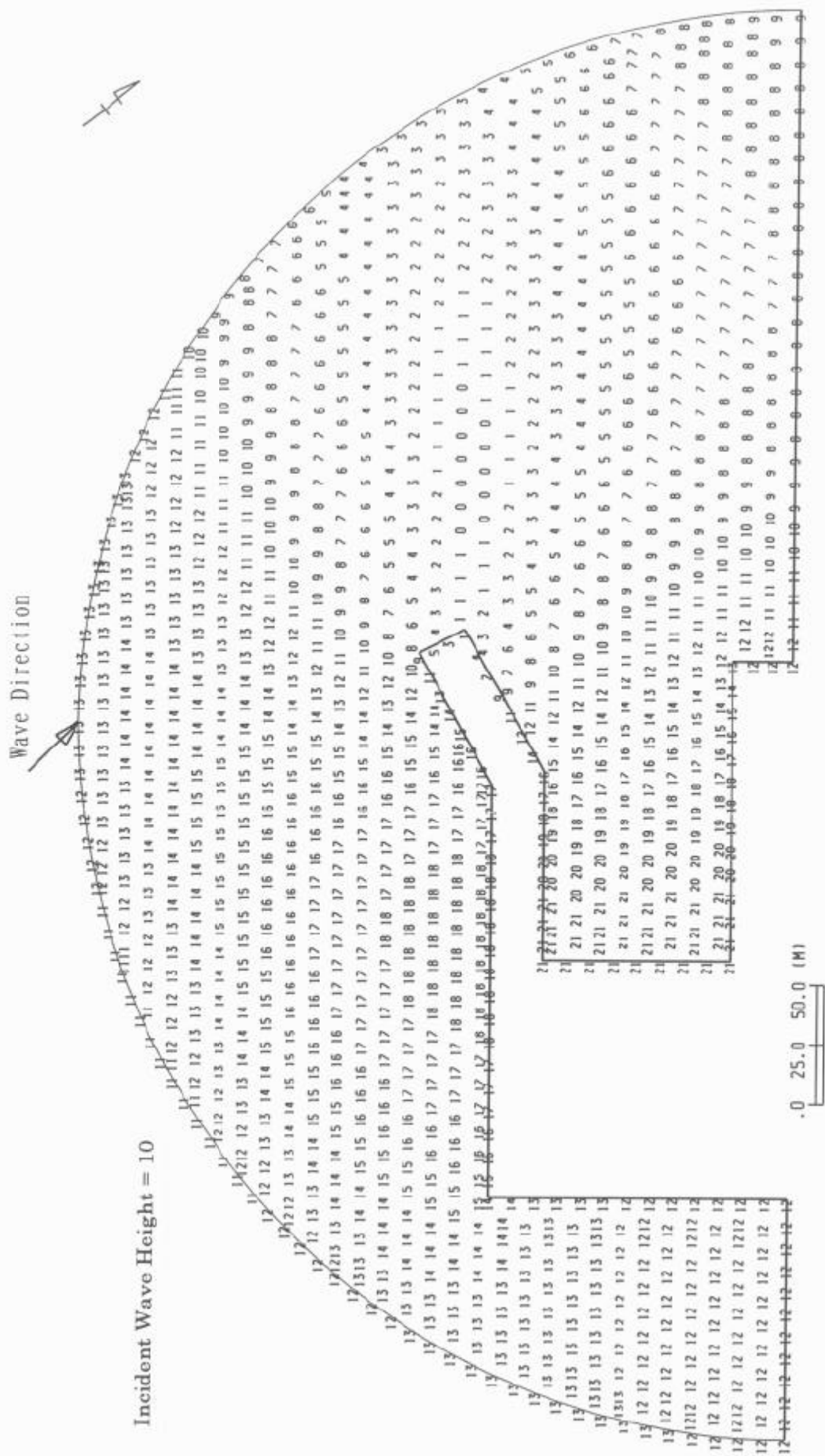


Figure A.6.5-3 Distribution of Wave Height Ratio  
(70m 30° Bending Extension of Breakwater, Wave Direction: S, Wave Period: 100s)



Figure A.6.5-4 Wave Height Ratio Contour Lines  
(70m 30° Bending Extension of Breakwater, Wave Direction: S, Wave Period: 100s)