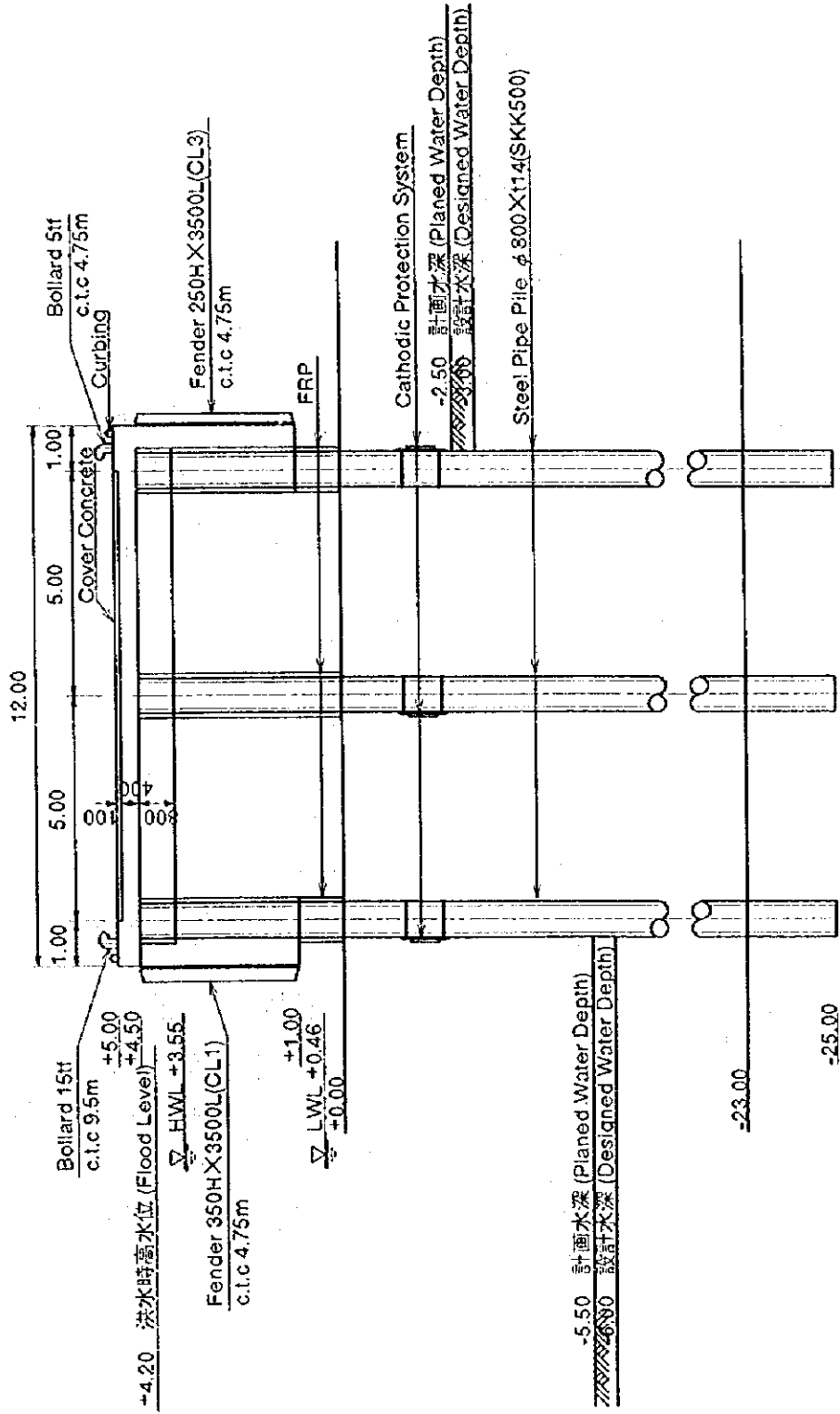


- 凡例 Legend
- ⊙ : 外灯 1 灯用 Lighting Pole (Single)
 - ⊗ : 外灯 2 灯用 Lighting Pole (Double)
 - : 船舶用電源 Power Supply Outlet
 - △ : 給水 Water Supply Outlet
 - ▲ : 給油 Fuel Supply Outlet

MAPUTO FISHING PORT LAYOUT PLAN S=1 : 1,000

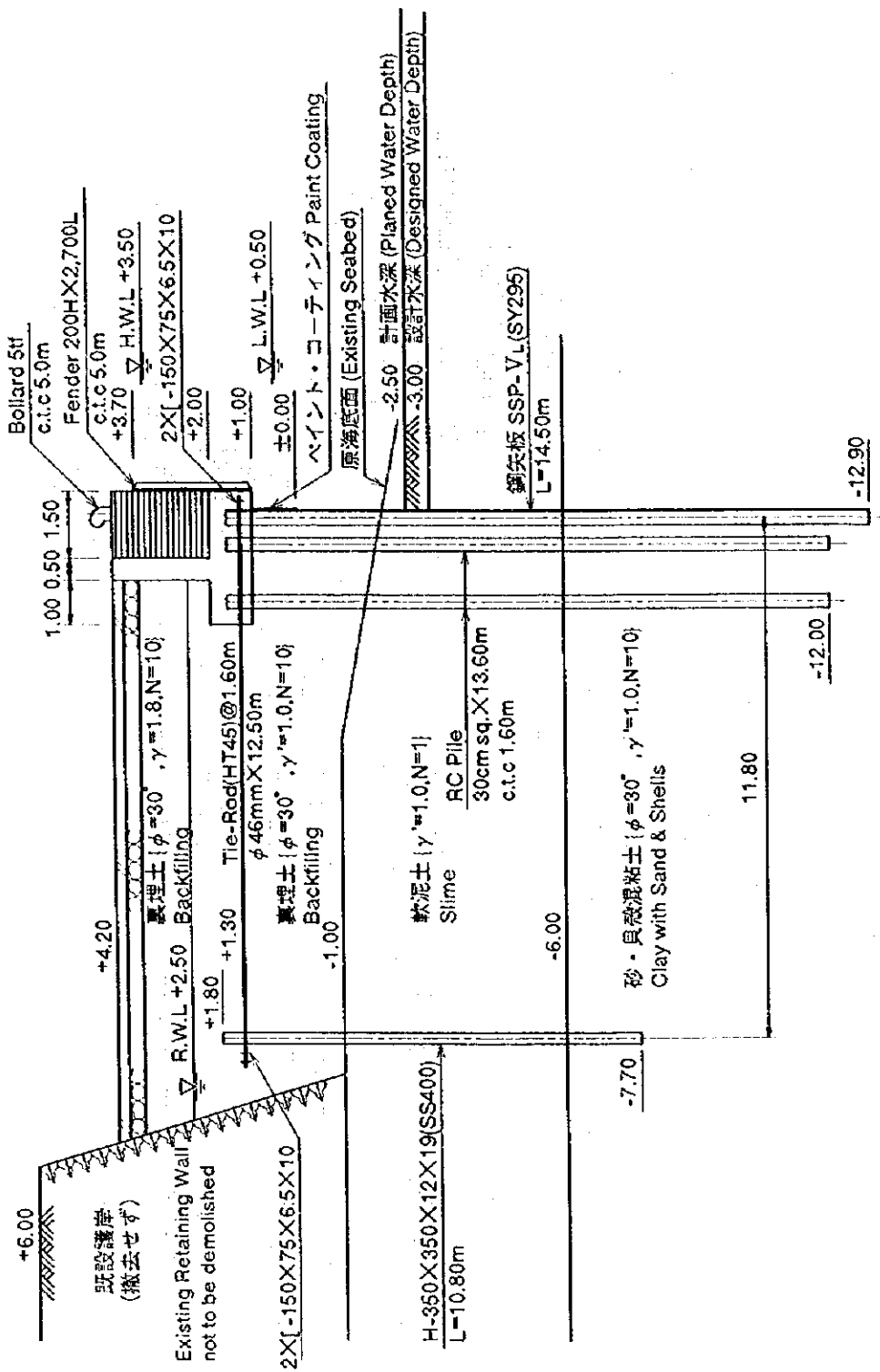
River Side

Harbor Side



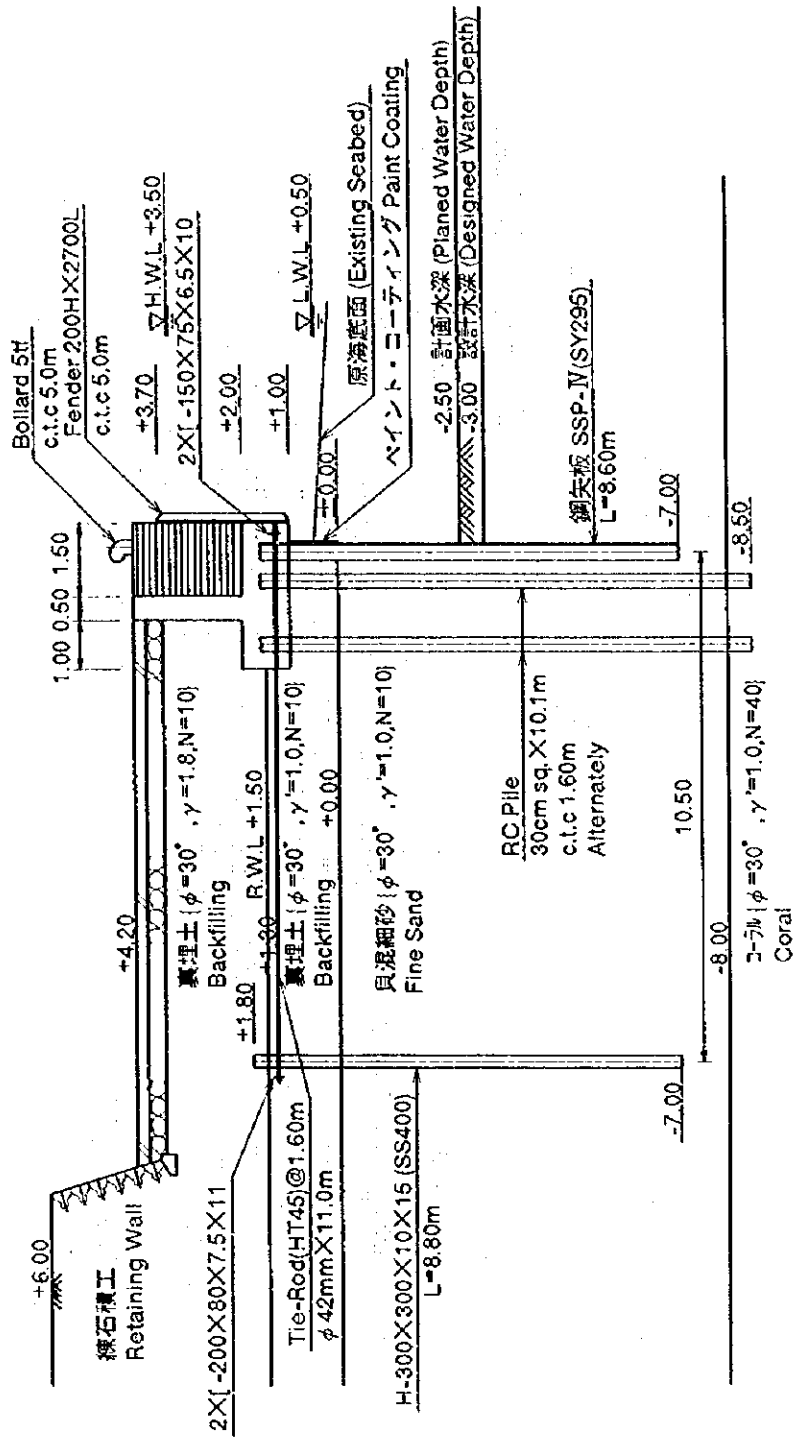
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栈橋標準断面図
Piled Jetty

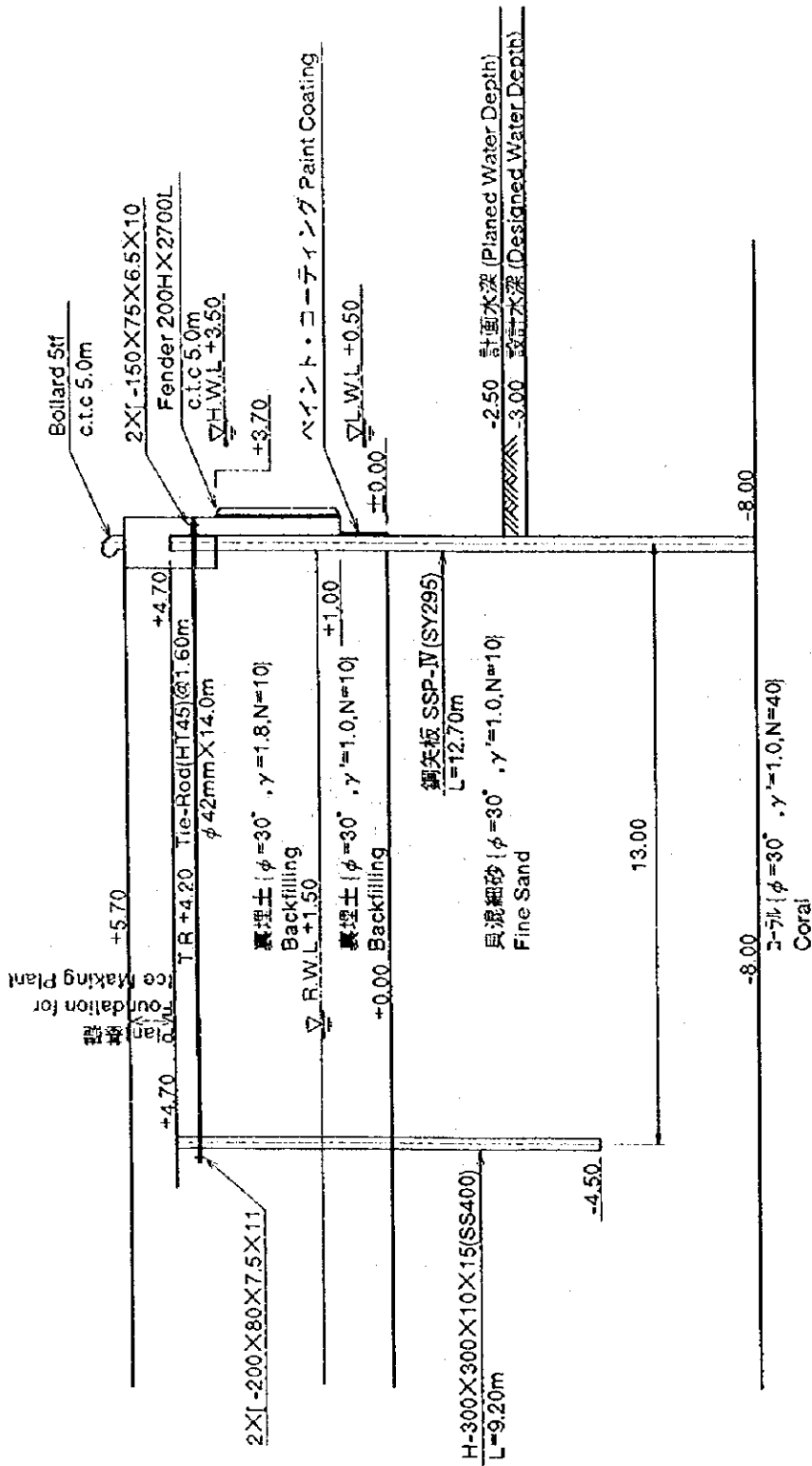


S=1:150

岸壁標準断面図
Quaywall Type A



岸壁標準断面図
Quaywall Type B



S=1:150

岸壁標準断面図
 Quaywall Type C

▽ +5.7 approx 港内地盤高 (Existing Grand Level)

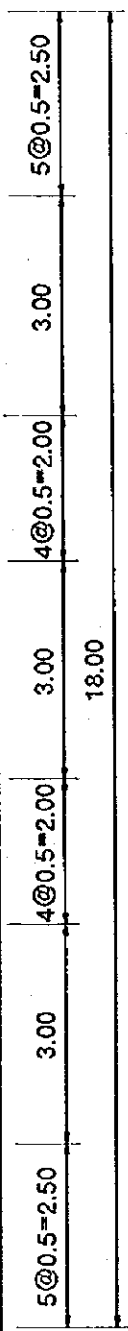
▽ +4.2 岸壁法線天端高 (Crown Height of Quaywall)

▽ H.W.L. +3.55

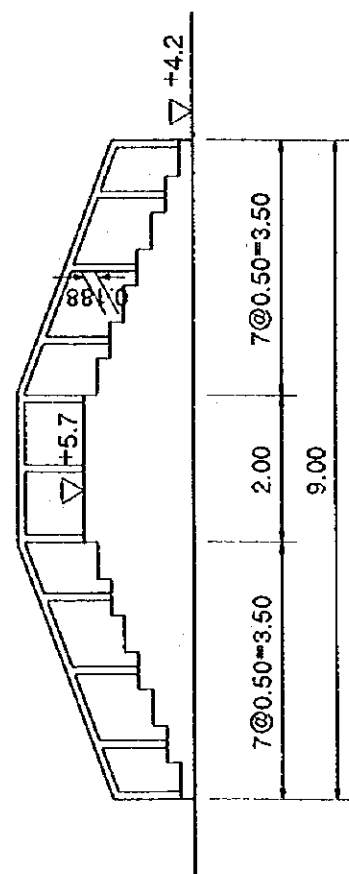
▽ M.S.L. +2.00

▽ +1.0 コーピング下端 (Coping Concrete Bottom Line)

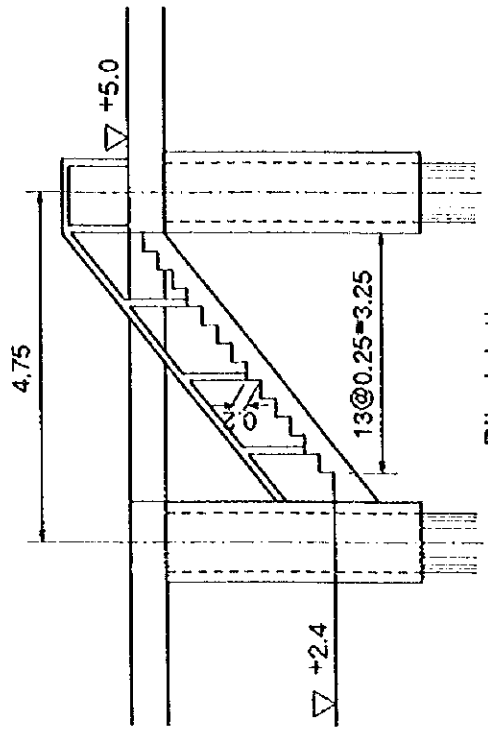
▽ L.W.L. +0.46



Quaywall



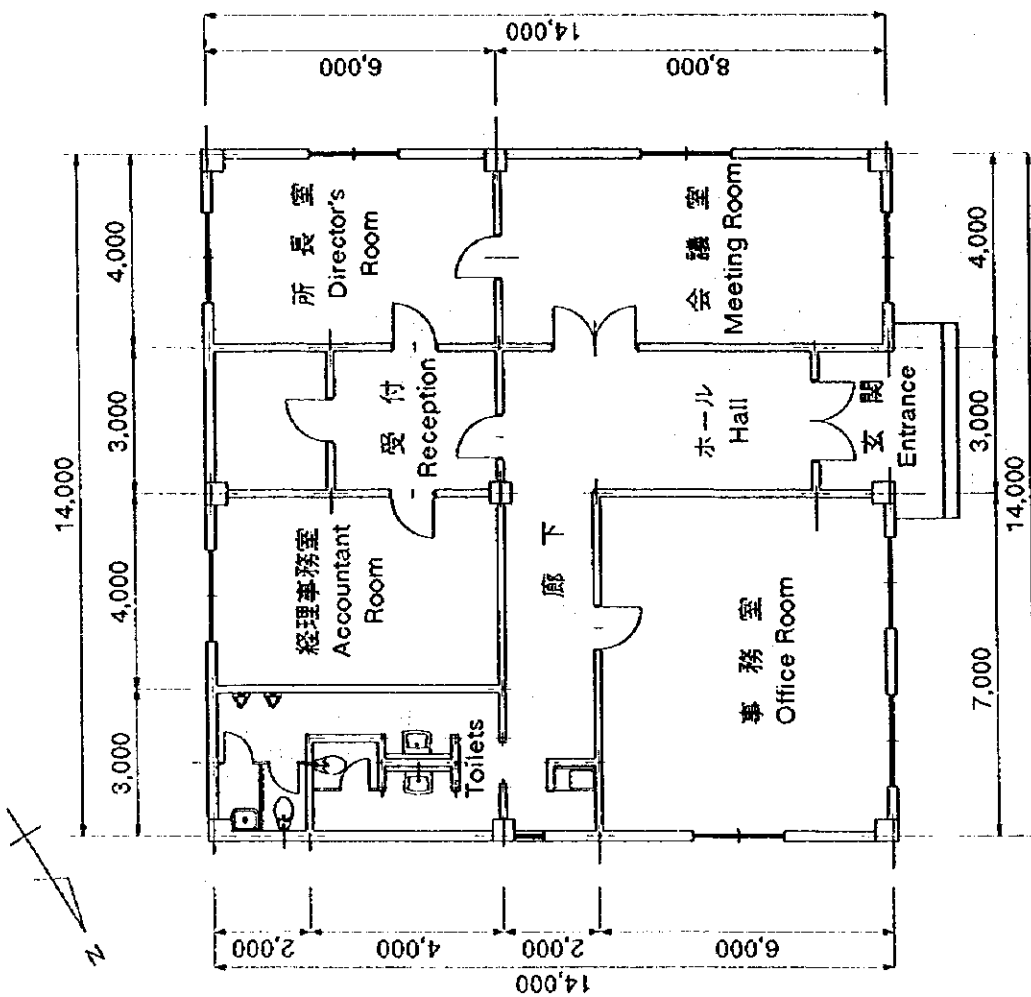
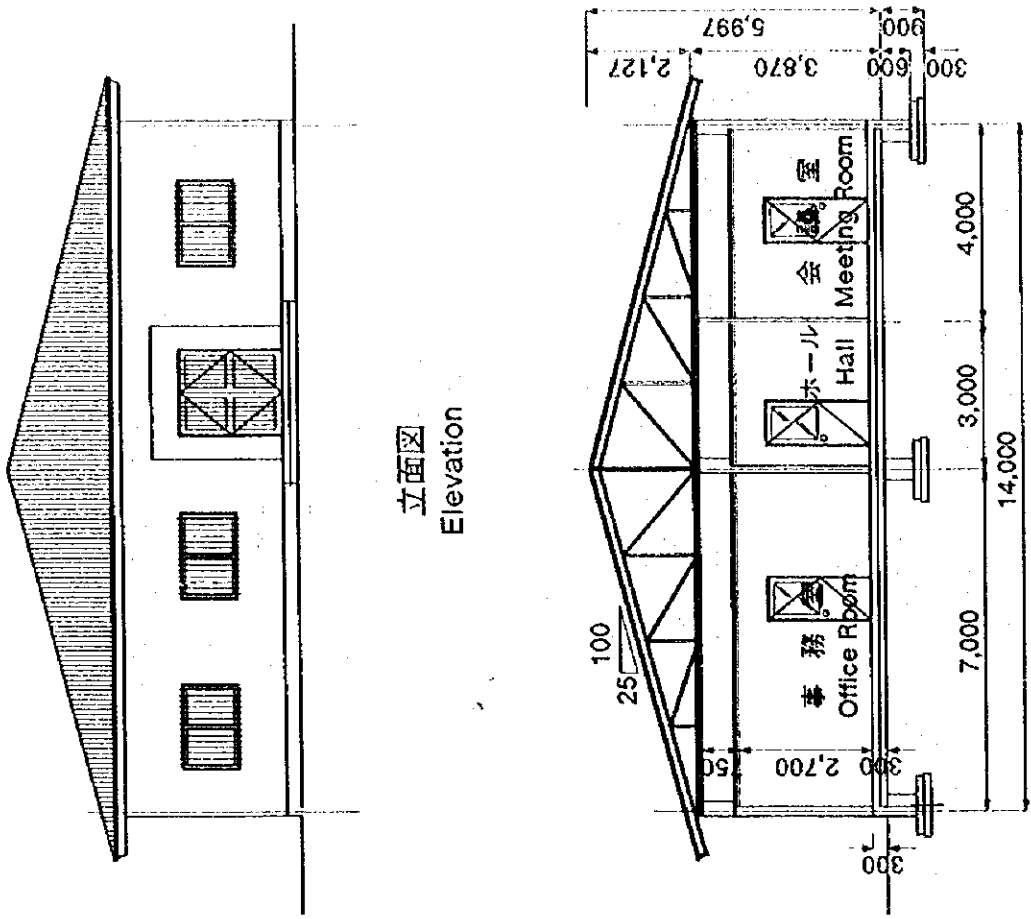
Apron to Road



Piled Jetty

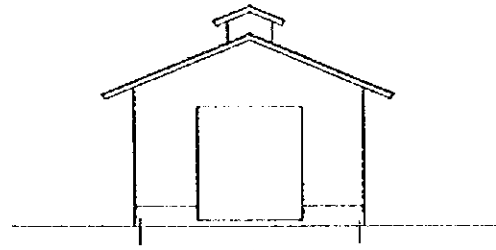
階段詳細図

Detail of Steps S=1:100

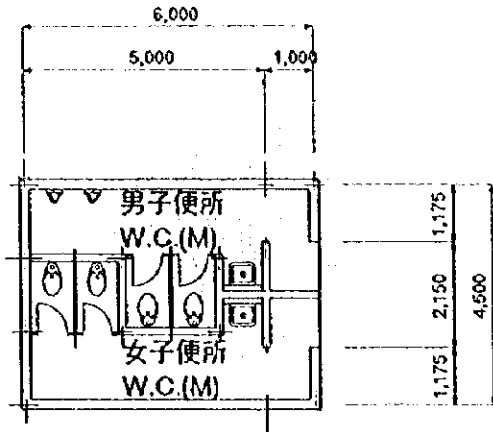


管理事務所棟計画図
Administration Building

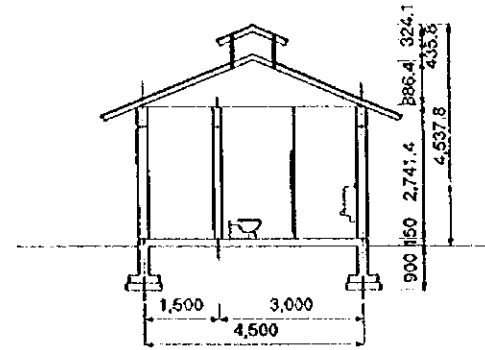
S=1:150



立面图
Elevation



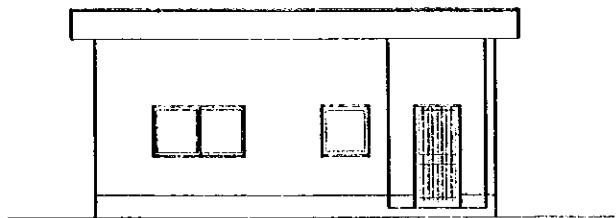
平面图
Plan



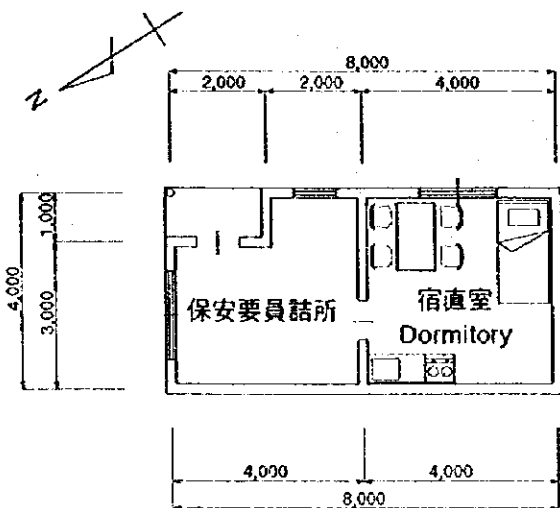
断面图
Section

公共厕所设计图
Public Toilets

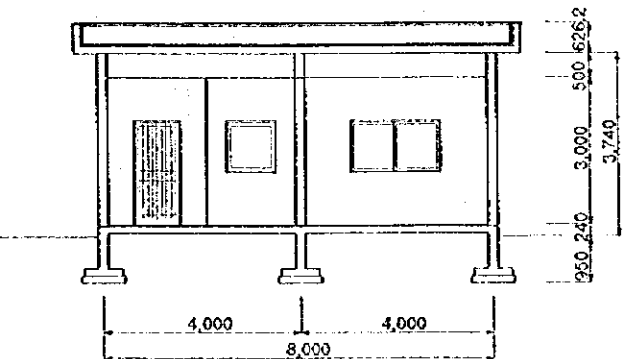
S=1:150



立面图
Elevation



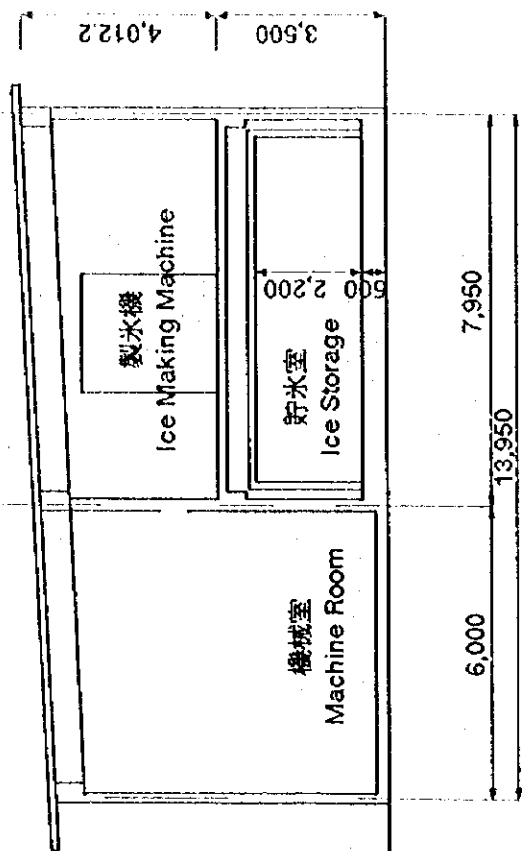
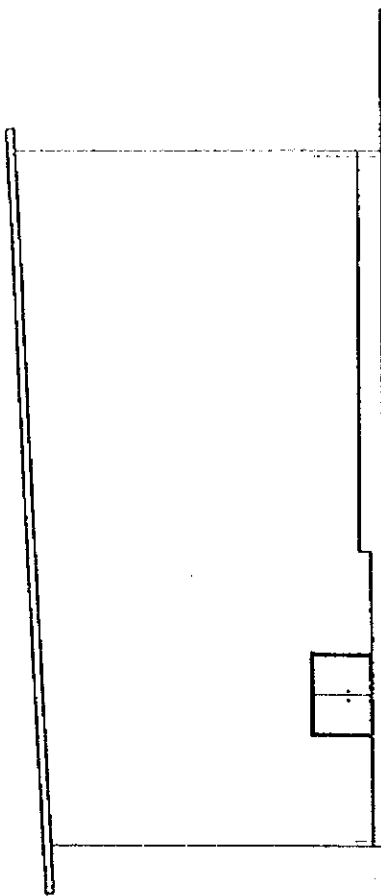
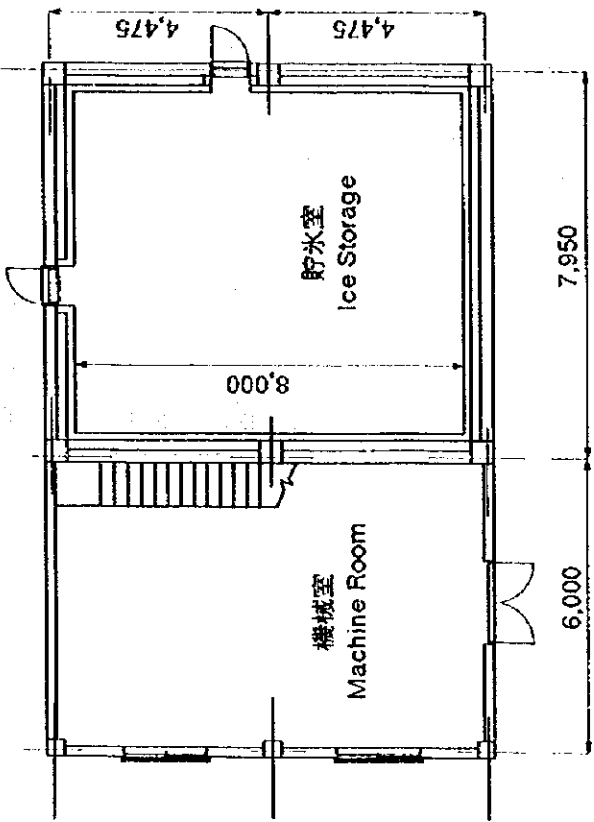
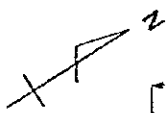
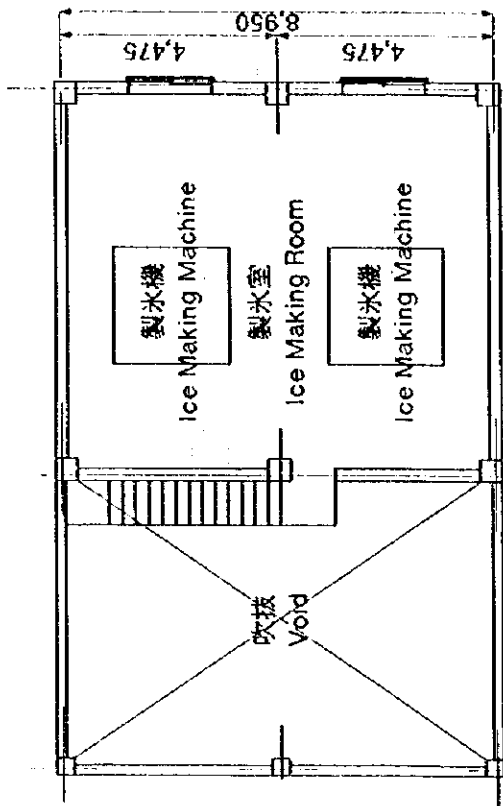
平面图
Plan



断面图
Section

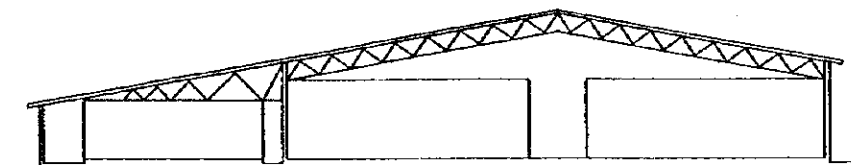
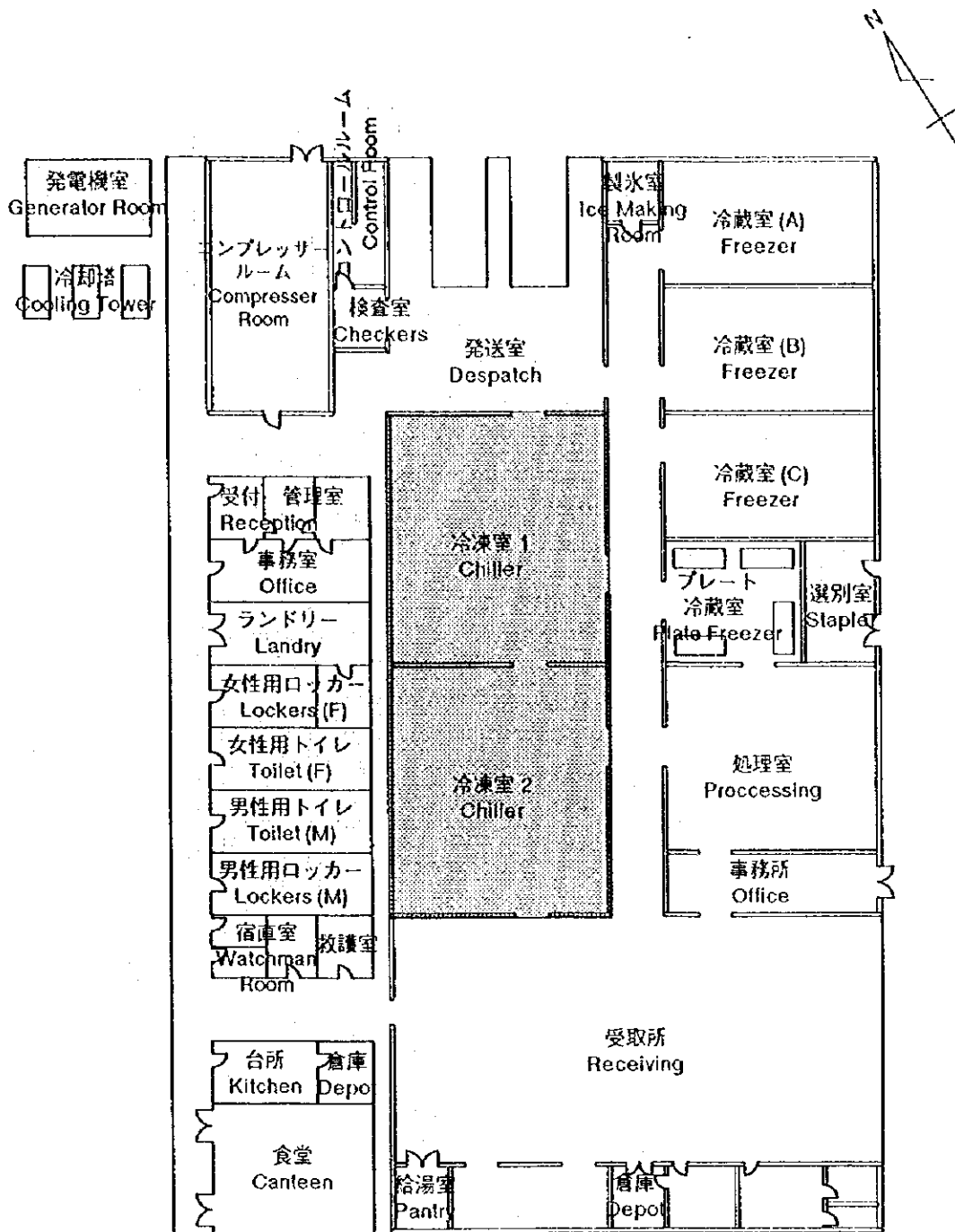
保安要员棟设计图
Guard House

S=1:150

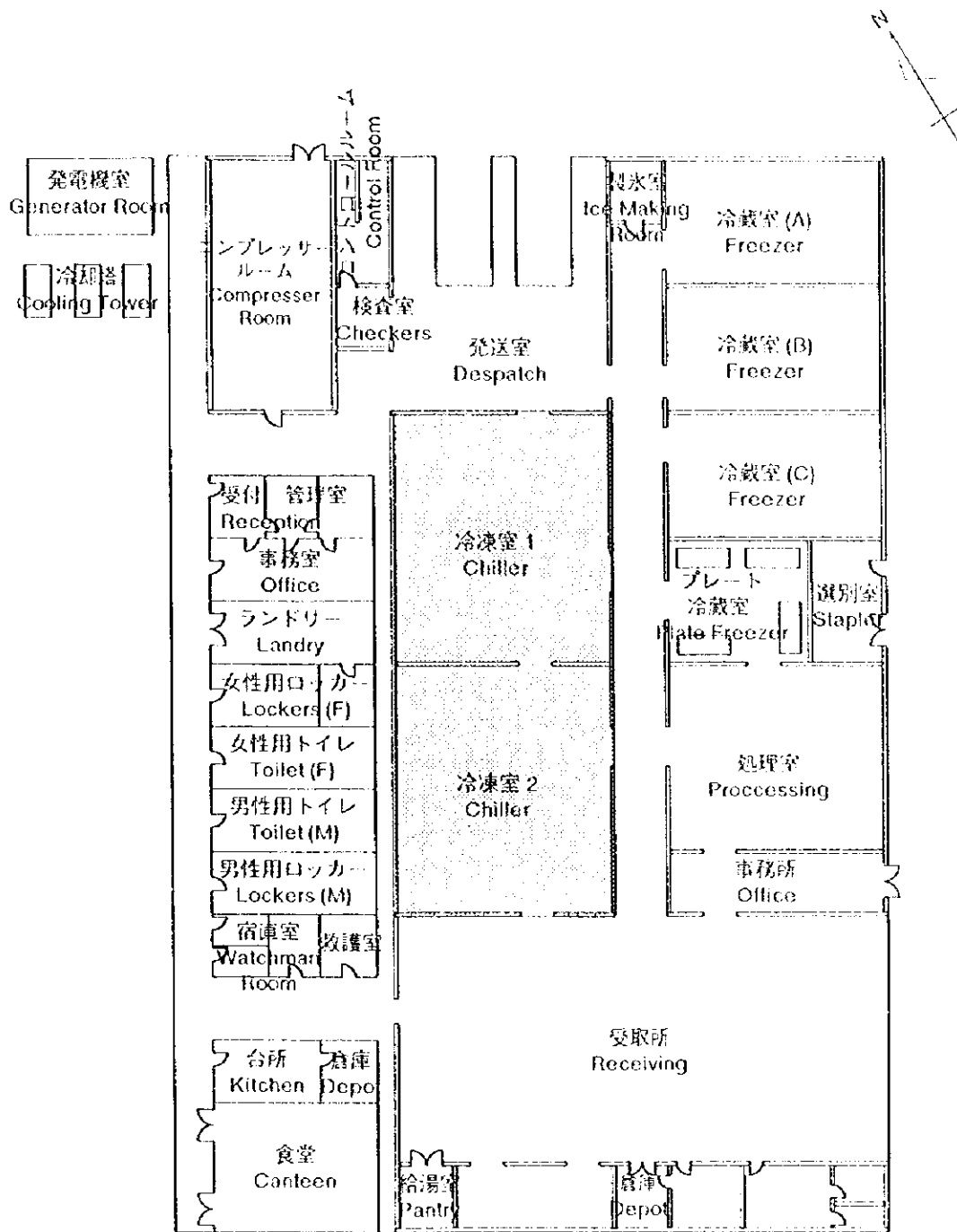


製氷・貯氷庫計画図
Ice Making Plant

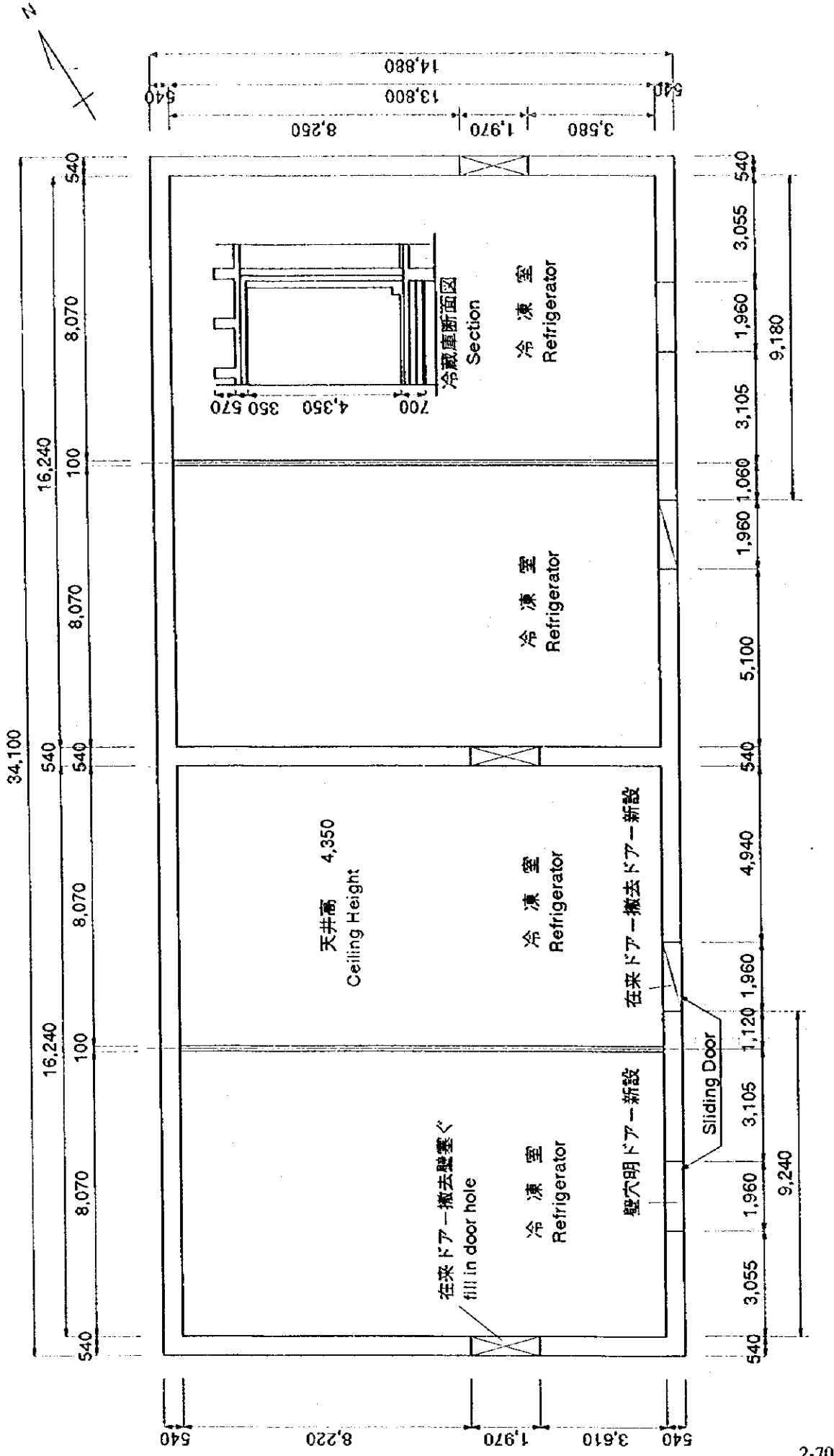
S=1:150



既設冷蔵庫棟平面図
Existing Refrigeration Building



既設冷蔵庫棟平面図
 Existing Refrigeration Building



S=1:150

既設冷蔵庫改良計画図
Existing Cold Storage Rehabilitation Plan

2.4 Environmental Considerations

2.4.1 Institutional Systems for Environmental Conservation

The institutional systems for environmental conservation and rational use of natural resources in Mozambique are still in the process of establishment. In former days some specific sectoral legislation which includes measures to protect the environment have already existed, i.e., the law on mining, the law on water use, the forestry regulations, laws on fisheries, the land law and the labour law. The Ministry of Health and/or the Ministry of Agriculture have carried out campaigns to make people aware of the dangers posed by pesticides, toxic products and waste and to control slash-and-burn agriculture.

The Ministry for Coordination of Environmental Affairs was established in December 1994 and has functioned as the central organization of administrative activities for environmental conservation. The National Environment Management Program was also prepared and published in May 1996. The National Environmental Management Program was authorized in the Environmental Framework Law and it is stated definitely that the Government is responsible for the execution of the Program.

In October 1997, the Environmental Framework Law (Lei No. 20/97 de 1 de Outubro) was put in force, but the details of the system, the council and/or the executive agencies based on the Law are in the process of discussion and installation.

The National Council for Sustainable Development, which is defined in the Environmental Framework Law, will function as a consultative organ for the Cabinet to comprehensively co-ordinate the governmental activities and regulations for environment management. The organization and composition of the Council has been discussed in the Cabinet and was scheduled to be established by December 1998.

Thus the present status of the environmental administration of the Government is at the stage that only the basic framework has just been established, and its own decrees and organizations for execution of environmental policy have not been installed yet.

The environmental problems and tasks in relation to the rehabilitation project of the Maputo Fishing Port (hereinafter called as "the Project") are picked up and discussed with the method of Initial Environmental Examination (IEE) established by JICA. The followings are the report of the discussion.

2.4.2 Initial Environmental Examination and Discussion

(1) Outline of the Project and Geophysical Conditions

The geophysical conditions of the Project are summarized in Table 2.4.1. Since the Project basically aims at the rehabilitation of existing fishing port facilities, no large-scale change or transformation against present status, such as reclamation or excavation of land, is designed.

The geophysical and environmental conditions are featured by river-mouth in the Bay of Maputo sheltered topographically from ocean waves, with a tidal range of over 3.5 m and relatively low wave height and short wave period.

(2) Screening

The aim of screening process defined in JICA's guidelines is to make judgement whether the Project is required to conduct Environmental Impact Assessment (EIA) or not. A series of discussion is made to determine whether EIA is necessary or not from the standpoint to harmonize the sustainable development with the lives of inhabitants and environment based on the outline of the Project and geophysical conditions.

Table 2.4.2 shows the summary of screening of the Project by the JICA format. The possibility that the Project would damage the environmental conditions is very small and it is judged that EIA is unnecessary.

(3) Scoping

Scoping is defined in JICA's guidelines as to find out important effects of environmental impacts in relation to the Project, and to clarify the fields and items to be studied intensively in the EIA process.

Table 2.4.3 is the checklist prepared for scoping of the Project. According to the checklist, few items are expected as the environmental impacts by the Project and it is feared that the problems of "water pollution" and/or "offensive odor" in the "Pollution" items might occur. Those items are the problems do not stem from the Rehabilitation Project itself but from the operation and management of port facilities after completion of the Project.

Table 2.4.4 shows the relations of cause and effect between elements of environmental

impact by Matrix method concerning the period of construction stage and operation stage of port facilities installed in the Project.

3-1) "Social Environment" items

Environmental effects to the "Economic activities" and "Traffic and life facilities" in "Social Environment" items are expected in the Construction stage. This means that it is expected the use of quaywalls for supply and landing could become unable or difficult in the construction stage, because most of the harbour area and basin may be occupied by construction equipment. And the problem of waste dumps and dredged materials generated in construction stage might occur. These problems should be considered in the process of construction planning and can be resolved by the treatment in the proper way and with environmental considerations.

The problem of "Waste and garbage" will happen in the Operation stage. The treatment of sewage from the public toilets which are planned to be set up two more, the installation of septic tanks is considered in the Basic Design.

3-2) "Natural Environment" items

It is understood that there is no major problem item to be pointed out since the aim of the project is to rehabilitate and improve the facilities and functions of existing fishing port.

3-3) "Pollution" items

The items "Water pollution" and "Noise and vibration" of "Pollution" items can be pointed out in the Operation stage. The EMODRAGA-owned dredger is the type of bucket on flat barge, so it is expected that the diffusion of suspended solid is not negligible in the dredging work process.

The source origin of the sediment of the fishing port basin is the river, so it is different from outbreak of new pollution by diffusion and drift of suspended solid into the river. It is expected that proper environmental consideration is necessary in order not to generate too many pollutant loads to the river since the sediment is muddy soil containing organic material. To cope with this problem, a proper treatment such as installation of silt-protector, for example, should be considered in the construction planning.

The species of fishes inhabit the Espirito Santo Estuary are expected to move to another

water area during the Construction stage and to return to the Estuary after the construction, and it is expected that extreme worsening of the environment is avoidable.

“Noise and vibration” is expected to happen by the construction equipment in the Construction stage. Since there exist the city area of Maputo within 200 meters of the fishing port, the construction method and the construction equipment which are able to restrain generation of noise and vibration should be employed.

The problems of “Water pollution” and “Offensive odor” may occur in the Operation stage. Improvement of facilities of the fishing port and increase in loading/unloading volumes sometimes involve increase in output volume of waste and garbage from the fisheries products processes in proportion, and the problem of countermeasures for proper treatment is necessarily raised. Even in the present condition, bilge water and/or garbage are being thrown away from the vessels and fishing boats and the problem of water pollution in the harbour basin is pointed out (refer to Table2.5.1).

Those are the problems to be treated in the operation program of Maputo Fishing Port, and a simplified method of countermeasure can be proposed here.

The main causes of water pollution in the harbour basin are considered as throwing-away of oily ballast and/or bilge water, spills of waste oil, flowing-in of sewage, etc. Though the large-scale vessels are being equipped with the self-treatment facilities of those waste materials, the problem is the method of treatment of waste and spills from medium and/or small scale fishing boats.

The facilities for treatment of waste/bilge water and ultimate disposal are relatively expensive to provide and, in some cases for developing countries, the maintenance is onerous because of the difficulties and costs. So, it is considered difficult for the fishing port to have its own facilities, and the construction and operation of the facilities are to be planned to cope with the output of the waste materials from the total Maputo area.

The installation of container for waste oil collection and employment of its operator can be proposed as the countermeasures to cope with the output from medium and/or small scale fishing boats. Solid and oil components are to be separated from water through the treatment of settlement and skimming in the container basin and are to be transported to the ultimate treatment facility, while residual water is to be disposed into drainage.

The Government of Mozambique has the policy of economic promotion depending

mainly on the utilization of marine resources and the export of marine products to the EU nations and other foreign countries. While, as seen in the establishment of ISO14000s, the international standards of environmental management and audit, the EU nations are making enhancement of requiring the reduction of environmental burden from manufacturing and/or consuming activities and the successive contribution to improvement of natural environment. This policy is to be applied to the trade to/from the EU nations. To improve the method of production and the treatment method of waste materials to those way of less environmental burdens is one of the important tasks that are to be managed in Maputo Fishing Port.

Table 2.4.1 Geophysical Conditions of the Project

Items		Description
Name of the Project		The Project of Rehabilitation of Maputo Fishing Port
Social Environment	LOCAL INHABITANTS (Residents / Inhabitants / Opinion for the Plan, etc.)	The site is the one and only fishing port in the Southern Coastal Area of Mozambique and the local inhabitants highly expect the project for rehabilitation and improvement of the Maputo Fishing Port.
	LAND USE (Fishing village & Fish market / Seaboard Industrial Area / Historic sites, etc.)	The fishing harbour was converted from the old dock adjacent to the commercial port. There exist historic architectures after 19th century in the neighborhood.
	ECONOMY / RECREATION (Agriculture, Fisheries & Business / Resort facilities, etc.)	The fishing port locates in the center of Maputo city near the central market and is expected highly utilized as the fishing port for the capital city.
Natural Environment	GEOGRAPHICAL & GEOLOGICAL FEATURES (Steep configuration, Soft ground & Swamp / Fault, etc.)	The harbour locates on the Espirito Santo Estuary in the Bay of Maputo.
	SEA & COASTAL ZONE (Erosion & Accretion / Tide & Tidal Current / Bathymetry, etc.)	The sea conditions of the site are affected mainly by the tide with tidal range over 3.5 m and the river flood in rainy season. The effects of wind wave generated by Southern monsoon in dry season (winter) should also be considered. To develop the countermeasure against
	VALUABLE FAUNA AND FLORA / HABITAT (Mangrove/ Coral reef / Hydrobious, etc.)	No particular item.
Pollution	OCCURRENCE OF COMPLAINTS (Highly interested pollution or events, etc.)	Dumping of waste oil or garbage from vessels and fishing boat is seen in the harbour. Films of oil and/or floating garbage are seen inside and outside of the harbour.
	RESPONSE / REACTION (Countermeasure / Compensation, etc.)	No countermeasure is taken presently.
Miscellaneous		It is feared that the congestion of fishing boats with work boats during the construction works may occur.

Table 2.4.2 Environmental Screening in Port & Harbour Development

Element of Environmental Impact		Description	Evaluation	Remarks (Grounds)	
Social Environment	1	Resettlement of inhabitants	Resettlement due to occupancy of inhabited area by the Project.	None	The Project will never cross the boundary of the existing fishing port area.
	2	Economic activities	Loss of productive measures such as land or fishery; fatal change of social economy.	None	
	3	Traffic and public facilities	Impact on traffic and/or public facilities such as traffic jam, traffic accident and so on.	None	The Project aims partial improvement and rehabilitation of the fishing port and will not cause rapid increase of traffic volume.
	4	Split of district	Split of community due to interruption of communication and traffic by the Project	None	
	5	Cultural property	Loss of cultural property (temple, shrine, buried property, etc.)	None	
	6	Water right and common right	Violation of fishing right, water rights, common right in forest and so on.	None	
	7	Health and hygiene	Worsening of environment such as dumping of waste and/or outbreak of harmful insect	Some	Improvement of port facilities and increase in handling volumes involve increase in output of waste and garbage from the fisheries products processes in proportion, and the problem of proper treatment is necessarily raised.
	8	Waste and garbage	Generation waste dumps, waste oil and so on through construction and operation	Some	Waste dumps and dredged materials generated in construction stage should be treated and disposed properly.
	9	Risk and hazard	Increase of danger of risk and hazard such as land-slide, vessel accident and so on	None	
Natural Environment	10	Topography and geology	Large-scale change of topographic /geological features by excavation and/or landfill	None	The Project will never cross the boundary of the existing fishing port area.
	11	Soil erosion	Soil erosion by rain fall due to land excavation and/or forest cutting	None	
	12	Underground Water	Water shortage due to excavation and drainage; pollution by soaked water	None	
	13	Hydrological situation	Change of discharge volume or river bed due to landfill and/or drainage	None	No alteration of port facilities that will affect river flow is planned.
	14	Coastal zone	Erosion or accretion due to landfill and/or change of sea condition	None	Ditto
	15	Flora and fauna	Interruption of breeding or extinction of species due to change of habitat condition	None	
	16	Meteorology	Change of temperature or wind flow due to large-scale landfill and/or construction	None	
	17	Landscape	Topographic change due to landfill; destruction of harmony due to building	None	

Pollution	18	Air pollution	Air pollution due to exhaust gas from vehicles and/or vessels	N/A	
	19	Water pollution	Water pollution due to flow-in of soil and earth or waste water	None	
	20	Soil contamination	Dust from field stock-pile; contamination by agricultural chemicals	None	
	21	Noise and vibration	Noise and vibration from vehicles and vessels	N/A	Traffic volume of vehicles and vessels is considered to increase accompanied by improvement of port facilities, but the effect is not clear.
	22	Land subsidence	Land subsidence due to geological change or decline of underground water level	None	
	23	Offensive odor	Outbreak of exhaust gas or offensive odor from port facilities	None	
Total Evaluation : Are IEE or EIA necessary for the Project?				No	

Table 2.4.3 Check-list for Scoping (Port & Harbour Development)

Element of Environmental Impact		Evaluation	Reasons	
Social Environment	1	Resettlement of inhabitants	D	Rehabilitation of functions of existing fishing port.
	2	Economic activities	D	Ditto
	3	Traffic and public facilities	D	Ditto
	4	Split of district	D	Ditto
	5	Cultural property	D	Nothing is reported in the Project area.
	6	Water right and common right	D	Ditto
	7	Health and hygiene	D	No specific problem.
	8	Waste and garbage	D	To be treated properly.
	9	Risk and hazard	D	No plan of new development or landfill.
Natural Environment	10	Topography and geology	D	No rare and valuable topography is reported.
	11	Soil erosion	D	No plan of new development or landfill.
	12	Underground water	D	No plan of putting out underground water.
	13	Hydrological situation	D	Rehabilitation of functions of existing fishing port.
	14	Coastal zone	D	The fishing port is facing an estuary.
	15	Flora and fauna	D	Rehabilitation of functions of existing fishing port.
	16	Meteorology	D	No plan of large-scale development or landfill.
	17	Landscape	D	No plan of large-scale development or landfill.
Pollution	18	Air pollution	D	Rehabilitation of functions of existing fishing port.
	19	Water pollution	C	Processed volume of fishery products and discharge of untreated waste water are considered to increase accompanied by improvement of port productivity.
	20	Soil contamination	D	Nothing to contaminate soil is assumed
	21	Noise and vibration	C	Traffic volume of vehicles and vessels is considered to increase accompanied by improvement of port facilities, but the effect is not clear.
	22	Land subsidence	D	No plan of large-scale development or landfill.
	23	Offensive odor	C	Processed volume of fishery products and discharge of untreated waste water are considered to increase accompanied by improvement of port productivity.

Note: Evaluation of environmental impact

A : High magnitude of impact is expected.

B : Low intensity of impact is expected.

C : Unidentified (to be considered that studying is necessary and the problem will become clear after investigation in detail).

D : Almost no impact is expected and IEE or EIA is considered not necessary.

Table 2.4.4 Matrix for Environmental Scoping (Port & Harbour Development)

Main Actions relating to the Project		Port and Related Facilities					
Elements of Environmental Impact	Total Evaluation	Pre-Operation Stage			Operation Stage		
		Change of Topography; Exclusive Use of Space	Operation of Construction Equipment, Vehicles and Vessels	Exclusive Use of Space	Operation of Vehicles	Navigation of Vessels	Operation of Facilities
Social Environment	1 Resettlement of inhabitants	-	-	-	-	-	-
	2 Economic activities	○	-	○	-	-	-
	3 Traffic and public facilities	○	-	○	-	-	-
	4 Split of district	-	-	-	-	-	-
	5 Cultural property	-	-	-	-	-	-
	6 Water right and common right	-	-	-	-	-	-
	7 Health and hygiene	-	-	-	-	-	-
	8 Waste and garbage	○	-	-	-	-	○
	9 Risk and hazard	-	-	-	-	-	-
Natural Environment	10 Topography and geology	-	-	-	-	-	-
	11 Soil erosion	-	-	-	-	-	-
	12 Underground water	-	-	-	-	-	-
	13 Hydrological situation	-	-	-	-	-	-
	14 Coastal zone	-	-	-	-	-	-
	15 Flora and fauna	-	-	-	-	-	-
	16 Meteorology	-	-	-	-	-	-
	17 Landscape	-	-	-	-	-	-
Pollution	18 Air pollution	-	-	-	-	-	-
	19 Water pollution	○	-	○	-	-	○
	20 Soil contamination	-	-	-	-	-	-
	21 Noise and vibration	○	-	○	-	-	-
	22 Land subsidence	-	-	-	-	-	-
	23 Offensive odor	○	-	-	-	-	○

◎ : Important environmental element which can affect the practicability of the Project depending on its magnitude and countermeasure.

○ : Potential important environmental element depending on the Project magnitude and site conditions.

- : Environmental element which has least impact and requires detail investigation and study in usual condition.

CHAPTER 3 IMPLEMENTATION PLAN

3-1 Implementation Plan

3-1-1 Implementation Concept

The Project must be executed in compliance with the scheme of Japan's Grant Aid Program. The prime consultant of detail design and construction supervision, and the contractor/supplier for the Project are limited to Japanese nationals, and DNP, the executing agency of the Government of Mozambique, will make contracts with those firms. The contracts shall be verified by Ministry of Foreign Affairs of the Government of Japan, and the Project will be implemented after the Verification.

The local construction companies and/or foreign construction firms which have business bases in Mozambique can be selected as subcontractors for the Project. The cost estimation is conducted on the assumption that construction equipment and materials, not available locally in Mozambique, are to be procured from South Africa and Japan.

Meanwhile, ice making plant and refrigerator are planned to be procured from Japan, and specialists such as for refrigerator installation and/or plumbing welder are also planned to be sent from Japan.

Though the Project might be divided into facility construction and equipment procurement, there are many interface issues among the facilities and equipment. A one-package contract with the consortium consists of construction firm, trading company and/or manufacturer should be chosen as the procurement method in order to secure a single-line responsibility by the contractor.

The technicians in the maintenance section of PPM should be engaged in the Project from the stage of installation and/or repairing of ice making plant and refrigerator, and they will be able to experience on-the-job training of tuning-up, maintenance and operation of equipment to be installed.

3-1-2 Implementation Conditions

(1) Considerations for activities in the fishing port

The method and sequence of construction will be carefully studied to minimize

interruption to the activity of the fishing port by the construction works.

(2) Rehabilitation work of collapsed revetment

The construction works at the part of the collapsed revetment should be implemented urgently in the first phase of the Project to avoid expansion of the damage, i.e. Quaywall type B, C.

(3) Arrangements for importation of materials and equipment

The registered certificate of import goods (BRI) is required in Mozambique to import materials and equipment, and pre-shipment inspection (PSI) by the specified agency in the exporting company is obligated by law. The procedures for importation arrangement are complicated and time costing, and also the approval by Ministry of Finance is required for the measures of exemption of taxes. The executing agency has to prepare the required amount of exempt taxes in their budget.

3-1-3 Scope of Works

An outline of the allocation of work items of the Project between both countries is as follows.

Table3.1.1 Allocation of Work Items of the Project

Work Items	Japanese Side	Mozambican Side
Provision of land area for construction works of the Project (including temporary work yard)		○
Removal works of sunken and/or scrapped boats in the Project area	○	
Work of putting fence around the Project area		○
Removal works of refrigerant from the existing Freezer and Ice Making Plant		○
Demolition work of the existing Ice Making Plant	○	
Demolition work of the existing revetment, quaywall and piled jetty	○	
Civil works of fishing port facilities	○	
Dredging work of harbour basin	○	
Construction works of buildings	○	
Construction work of Ice Making Plant	○	
Improvement works of the existing freezer	○	
Installation works of utilities	○	
Procurement and provision of equipment	○	

3-1-4 Construction Supervision

In compliance with the scheme of Japan's Grant Aid Program, a Japanese consultant firm will make a contract of the detail design and construction supervision works of the Project with DNP, the executing agency of the Government of Mozambique. After the verification of the contract by Ministry of Foreign Affairs of the Government of Japan, the consultant will commence the works. The works undertaken by the consultant will generally consist of the followings.

(1) Detail design

The consultant will conduct the detail design based on the results of the Basic Design Study and Exchange of Notes (E/N) of the Project and will prepare the contract drawings, technical specifications and detailed construction cost estimate.

(2) Preparation of Tender

The consultant will be responsible for preparing the tender arrangement, qualification of tenderers on behalf of the executing agency. The concerned works are as follows:

- Announcement of Prequalification,
- Prequalification and Evaluation of the Tenderers,
- Distribution of the Contract Documents,
- Reception and Opening of Tenders,
- Evaluation of the Tenders.

(3) Construction Supervision

The consultant will supervise the progress of the Project to ensure whether the construction works and procurement of materials are conducted in accordance with the technical specifications and/or the implementation program.

The consultant will assign one resident engineer on a permanent basis to supervise the progress of the Project and check the quality of the works and to make necessary contacts and explanations to the governmental agencies concerned.

The consultant will send a specialist to the site from time to time for building works installation works of utilities and/or mechanical plants. And also the quality of

equipment will be fully assured by witnessing the inspections at the manufacturers.

3-1-5 Procurement Plan

(1) Construction Materials

Procured locally in Mozambique:

Soil for filling, stones/rocks, cement, fine and coarse aggregates for concrete, deformed reinforcement bars for concrete, acetylene and oxygen gas, fuels and lubricants,

Procured from South Africa:

Deformed reinforcement bars for concrete, structural steel, steel pipe piles, steel sheet piles,
Building materials and utilities, and miscellaneous interior/exterior materials,

Procured from Japan

Rubber fenders, tie-rods and miscellaneous.

(2) Refrigeration plant and equipment

The existing ice making plant and refrigerator are the USA made and the Netherlands made respectively, and it is feared that procurement of spare parts has become difficult and supply schedule may not be secured. Thus, the Japan made products are selected to be procured for the advantages of punctuality of supplies and after-services.

3-1-6 Implementation Schedule

The construction works will be executed in two fiscal years. The implementation schedule concerning the work items of Japan side is shown in Figure 3.1.2.

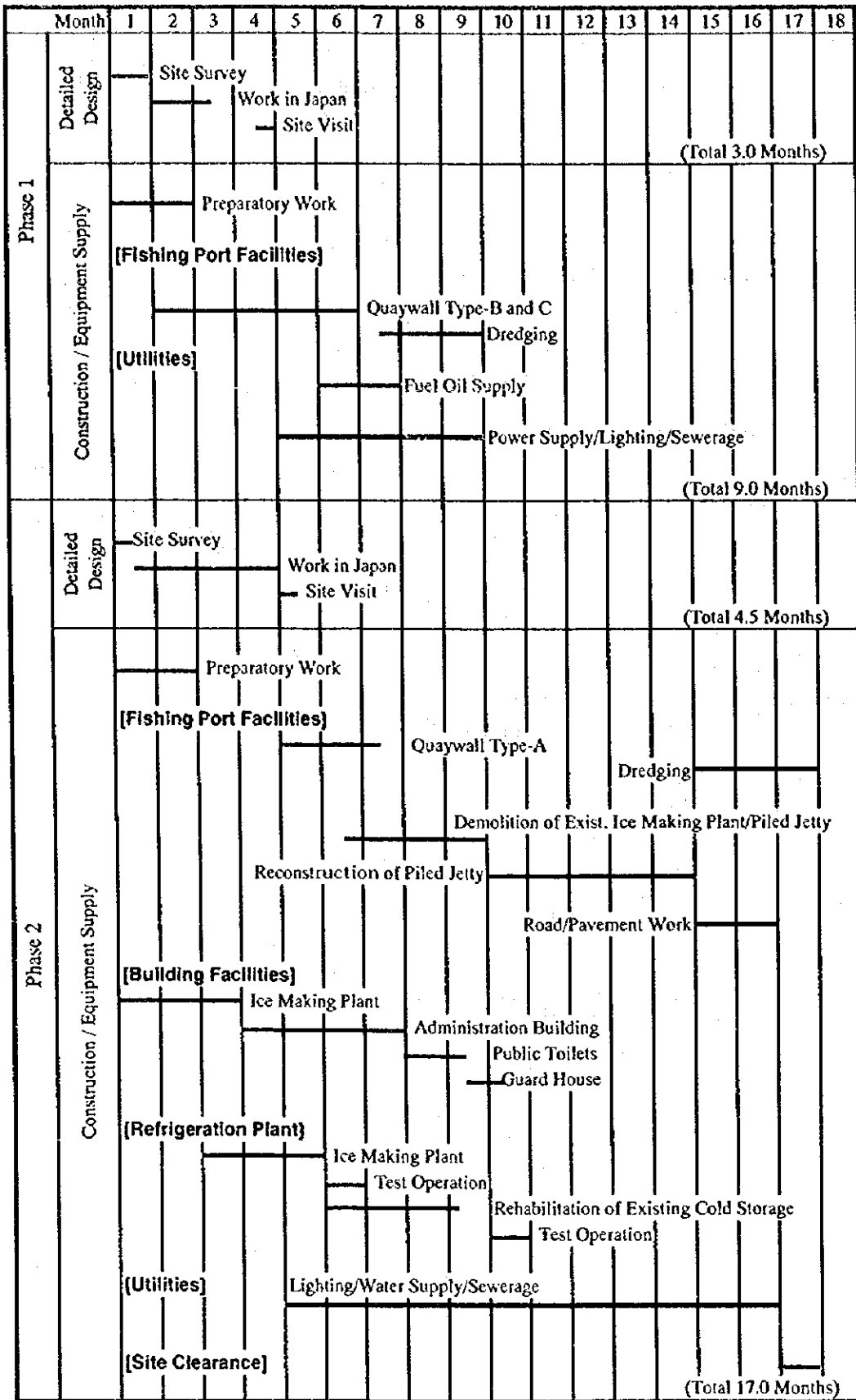
3-1-7 Undertakings of the Government of Mozambique

For implementation of the Project as the Grant Aid of Japan, the necessary measures to be undertaken by the Government of Mozambique are as follows:

- (1) to provide advantageous arrangement to obtain permits and/or approvals necessary for construction works of facilities (for example, quarry),
- (2) to bear commission to a Japanese foreign exchange bank for the banking

- services upon the Banking Arrangement,
- (3) to ensure prompt unloading and customs clearance at the port of disembarkation in Mozambique and internal transportation and exemption of taxes therein of the products imported under the Grant Aid,
 - (4) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies (including VAT) which may be imposed in Mozambique with respect to the supply of the products and services under the verified contracts,
 - (5) to ensure prompt giving permission of entry and stay of Japanese nationals who enter into Mozambique with respect to the supply of services under the verified contracts,
 - (6) to ensure that the facilities and equipment to be provided under the Grant Aid of Japan are to be maintained and used properly and effectively,
 - (7) to bear all the expenses, other than those covered by the Grant Aid of Japan, necessary for the accomplishment of the Project, and
 - (8) to maintain the water depth of the harbour basin by the periodical maintenance dredging works.

Table3.1.2 Implementation Schedule



3-2 Operation and Maintenance Plan

The present organization will be maintained for management and operation of the facilities and equipment provided by the Project, and the Maintenance Division of PPM will undertake the responsibility for the maintenance. The proposed contents of the maintenance and management of the facilities and equipment provided by the Project are as follows:

- Civil facilities of the Fishing Port, buildings, utilities, and refrigerator: to be operated and maintained directly by PPM,
- Ice making plant: the operation and maintenance is to be carried out directly by PPM,
- Equipment: the truck crane and forklift trucks are to be operated and maintained directly by PPM.

The estimated incomes and expenditures for maintenance and management of the facilities and equipment are shown in Table 3.2.1.

Though the above-mentioned estimation was calculated by the condition that income from Ice Selling, that occupies 40% of the total amount of income, is assumed lower (70% of planned figure), it is judged that the cost for maintenance and management of the fishing port facilities can be affordable. The details and their explanations of the estimation of annual income/cost are as follows:

(1) Freezer Fee

Prawns: $(134 \text{ tons} \times 8 \text{ weeks} + 80 \text{ tons} \times 8 \text{ weeks}) \times \$19.2/\text{ton}/\text{week} = \$27,341.-$

Fishes: $(2,268 \text{ tons} \times 4 \text{ weeks} + 216 \text{ tons} \times 1 \text{ week} + 504 \text{ tons} \times 4 \text{ weeks} + 160 \text{ tons} \times 1 \text{ week} + 160 \text{ tons} \times 4 \text{ weeks} + 70 \text{ tons} \times 52 \text{ weeks}) \times \$12.5/\text{ton}/\text{week} = \$191,800.-$

Total: \$219,141.-

(2) Income from Ice Selling

Income by selling Ice	for fishing boats	: 2,829 tons x \$84.7/ton = \$239,616
	for distribution	: 1,480 tons x \$169.5/ton = \$250,860
	Total	: \$490,476.-

The above is estimated from the planned figures but exceeds the amount of actual selling. So, 70% figure of the above estimation is employed to this financial planning.

(3) Freezer Operation Cost

Electricity	$75.7\text{kW} \times 85\% \times 50\% \times 24 \text{ hours} \times 365 \text{ days} \times \$0.097/\text{kWh} = \$27,338.-$
Water	$0.268 \text{ tons/day} \times 50\% \times 365\text{days} \times \$0.565 = \$28.-$
Total	\$27,366.-

(4) Ice Making Plant Operation Cost

Electricity	$109.8\text{kW} \times 85\% \times 70\% \times 24 \text{ hours} \times 365 \text{ days} \times \$0.097/\text{kWh} = \$55,513.-$
Water	$44.928 \text{ tons/day} \times 70\% \times 365\text{days} \times \$0.565 = \$6,486.-$
Total	\$61,999.-

(5) Payroll for Operators of Freezer and Ice Making Plant

\$5,900.-

The 30% of increase is added to the actual record of Payroll for Freezer Operator (1997, \$4,567.-) as the increase staff for Ice Making Operation.

(6) Payroll for Stevedores

\$18,200

The 10% of increase is added to the actual record of Payroll for Stevedores (1997, \$16,539.-) as the increase staff for Ice Selling.

(7) Payroll for Mechanics and Maintenance

\$16,967.- (by the actual record of 1997)

(8) Maintenance Cost of Freezer

\$40,245.- (5 % of Construction Cost)

(9) Maintenance Cost of Port Facilities

\$55,384.- (1 % of Construction Cost)

(10) Maintenance Cost of Ice Making Plant

Building	\$2,109.- (1 % of Construction Cost)
Ice Making Plant	\$38,863.- (5 % of Construction Cost) Total = \$40,972

(11) Maintenance Cost of Equipment

\$12,498.- (5 % of Procurement Cost)

(12) Depreciation Cost

\$337,369.- (calculated from the years of endurance)

The years of endurance is assumed as 30 years for the port facilities, 10 years for the installations and equipment.

(13) Dredging of Harbour Basin

$$19,000 \text{ m}^3 \times \$2.7/\text{m}^3 = \$51,300.-$$

Table3.2.1 Financial Plan of Operation and Maintenance

(Unit : US\$)

Income		Expenditure	
Item	Amount	Item	Amount
Freezer Fee	219,141	Freezer Operation Cost	
Income from Ice Selling	343,000	(Water, electricity)	27,366
Berthing Fee	163,032	Ice Making Plant	
Crane Fee	79,475	Operation Cost	61,999
		(Water, electricity)	
		Payrolls	
		Freezer and Ice Making	
		Plant Operator	5,900
		Equipment Driver	18,200
		Mechanics/Maintenance	16,967
		Maintenance Cost	
		Freezer	40,245
		Ice Making Plant	40,972
		Port Facilities	55,384
		Equipment	12,498
		Depreciation Cost	337,369
		Dredging of Harbour	51,300
		Miscellaneous	
Total	804,648	Total	668,200

CHAPTER 4 EVALUATION OF THE PROJECT AND RECOMMENDATION

4-1 Project Effect

4-1-1 Project Effect

The following direct project effects will be achieved by the rehabilitation of Maputo Fishing Port by the Project.

(a) Semi-industrial and artisanal fishing industry

Berthing congestion will break up by the increase of the berthing quay length. And also the increase of numbers of the medium/small size fishing boats that use Maputo Fishing Port is expected.

Since the crown height of the quay is planned lower than that of the existing quay and many step works are to be installed along the quay, efficiency of unloading work at the quay can be improved.

The construction of ice making plant will improve the quality maintenance of the fish catches and the rehabilitation of refrigerator will improve the stable supply of marine products. And thus the reduction of the post-harvest loss of fish catches will promote the effective utilization of the marine resources.

(b) Large-scale fishing industry

The rehabilitation of refrigeration building will make possible the storage of the fish catches by the industrial fishing boats such as prawns and/or high-quality fishes and will promote the export of marine products.

The rehabilitation of the piled jetty and the installation of new mobile crane will improve the loading/unloading efficiency of the industrial fishing boats. Electricity supply to the berthing fishing boats will become possible not to depend on the ship-born generator and will make berthing economical.

(c) Fish market

The construction of ice making plant and the rehabilitation of refrigerator will improve the quality maintenance of the fish catches and will improve the stable supply and distribution of marine products to the market

(d) Environment of the fishing port

The construction of public toilet for the users of the fishing port and the diversion of the outlet of the city drainage to the riverside will improve the environment of the fishing port especially the water quality of the harbour.

4-1-2 Verification of Propriety of the Project

The Project is evaluated to have important significance as the Grant Aid by the Government of Japan from the following viewpoints and to have sufficient propriety.

- (a) Since the benefit by the project is expected to extend not only to the regional fishing people but also to all the resident people in the metropolitan area, the direct/indirect population benefit by the project is presumed very large as over one million people.
- (b) The aim of the Project completely meets with the targets of the fishery sector of the Nation's Five Years Development Program of the Government of Mozambique, i.e., the increase of marine products supply to the domestic market, the increase of fish catches that can obtain foreign currency and the improvement of life levels in the fishing villages.
- (c) It is informed that the cost of the Project born by the Government of Mozambique has already been assigned by the budget. The organization for the implementation of the Project will be prepared to have sufficient staff members, technology level and fund. Independent and profitable management is proved to be possible by the planned cash flow and the smooth operation of the fishing port is expectable.

4-2 Recommendation

(1) Maintenance dredging

Maputo Fishing Port is located facing the estuary of Espirito Santo and its harbour basin is shared by the medium/small-size fishing boats, SAFMAR and SOMONAV that have their own facilities in the harbour. This harbour basin is inevitably deposited by the sediment inflow from the river and it will require the periodic maintenance dredging. Since the design depth of the fishing port portion of the basin is planned as -2.5m in this project, it is predicted that the maintenance dredging of approximately 20,000m³ every year is required

from this time on.

So far the maintenance dredging of the harbour basin has been conducted by the way such that the whole dredging of the basin is entrusted to EMODRAGA on the agreement of all the port officials concerned and the cost is shared by them. By the reason, the maintenance dredging of the basin was not always conducted timely because the dredging was never managed without the agreement of the necessity and expenditure among all the port officials concerned.

Therefore, it is preferable to establish the joint maintenance and dredging program with all the port officials concerned for the maintenance dredging of the harbour basin every year. But, since SAFMAR and SOMONAV do not necessarily require the water depth of -2.5m, it might be required that PPM independently prepare and conduct the maintenance and dredging program.

Sounding survey of the harbour basin will be necessary in the maintenance and dredging program. Though the detailed sounding survey can be entrusted to EMODRAGA in prior to the maintenance dredging, it is preferable that daily sounding of the depth of points in the harbour basin by the lead to be conducted by PPM itself periodically.

(2) Maintenance and inspection by Port Engineers

PPM does not keep any civil/port engineer in its organization. Neither the Ministry of Agriculture nor National Directorate of Fisheries has its organization without civil/port engineer. Since there are a lot of civil works in Maputo Fishing Port, to conduct the timely maintenance and inspection of the works is necessary for the efficient port operation and long-term and economical utilization of the facilities.

If it is difficult to keep civil/port engineer(s) in the fishing port itself, it is recommendable to establish a joint and cooperative relation with CFM and to realize the inspection of port facilities and civil works by the civil/port engineers in CFM.

(3) Conservation of environment of the fishing Port

The new construction of two toilets for the user of Maputo Fishing Port, the diversion of the outlet of urban drainage from the harbour basin to the riverfront, etc., are proposed to improve the operational environment of the fishing port. And concerning the problem of treatment of bilge water and/or oil spills from the medium/small size fishing boats, the

installation of container basin in the port area to collect the waste water, the prohibition of throwing-away of waste water and severe management of the rule are also proposed.

To achieve the proper operation of the port facilities and administration of the fishing port, it is recommendable to install the environment management section in the organization of PPM and to conduct the public relations activity for the environment consciousness of the users.

APPENDICES

- I. Member List of the Study Team
- II. Schedule of the Study
- III. List of the Party concerned in the Recipient Country
- IV. Minutes of Discussion
- V. Topographic / Bathymetric Survey Map
- VI. References

I. Member List of the Study Team

I-1 Basic Design Study

- | | |
|---|--|
| (1) Team Leader | Hozumi KATSUTA
Development Specialist,
Japan International Cooperation Agency |
| (2) Project Coordinator | Hidenori NAKAMURA
Staff, Second Project Study Division,
Grant Aid Project Study Department,
Japan International Cooperation Agency |
| (3) Technical Adviser | Takeru KATO
Deputy Director, Disaster Prevention and
Coastal Protection Division, Fishing Port
Department, Fisheries Agency |
| (4) Chief Consultant/Port Civil Engineer | Nobuaki NAGAO
Pacific Consultants International |
| (5) Fishery Products Marketing Planner | Masanobu IWAMIYA
Pacific Consultants International |
| (6) Civil Engineer | Nobuo IDE
Pacific Consultants International |
| (7) Architectural Planner/Facilities Planner | Tadahiro SUZUKI
Pacific Consultants International |
| (8) Natural Conditions Surveyor/Environmental Surveyor | Kazutoshi KASHIMA
Pacific Consultants International |
| (9) Construction Planner/Cost Estimator | Katsuhiko TAKAHASHI
Pacific Consultants International |
| (10) Interpreter (Portuguese) | Keiko MITSUNAGA
Pacific Consultants International |

I-2 Draft Basic Design Explanation

- | | |
|---|---|
| (1) Team Leader | Yoichi KOBAYASHI
Construction Inspector, Construction
Division, Fishing Port Department,
Fisheries Agency |
| (2) Project Coordinator | Taiji NAKAGAWA
Deputy Director, General Affairs Division,
Tokyo International Training Center,
Japan International Cooperation Agency |
| (3) Chief Consultant/Port Civil Engineer | Nobuaki NAGAO
Pacific Consultants International |
| (4) Fishery Products Marketing Planner | Masanobu IWAMIYA
Pacific Consultants International |
| (5) Interpreter (Portuguese) | Yoshiko FUKUSHIMA
Pacific Consultants International |

II. Schedule of the Study

II-1 Basic Design Study

August 1 – 2	Trip from Tokyo to Maputo
August 3	Courtesy visit to Ministry of Agriculture and Fisheries, Ministry of Foreign Negotiations and Cooperation; Meeting with DNP
August 4	Site investigation
August 5	Meeting with PPM, SOMONAV
August 6 – 7	Meeting with DNP, PPM
August 8 – 12	Site investigation; data and information collection
August 12	Signing of Minutes of Discussion; Data and information collection
August 13	Katsuta, Kato and Nakamura move to Harare, visit Japan Embassy at Zimbabwe and JICA Office (return to Tokyo on August 15)
August 13 – 21	Topographic/bathymetric survey; site investigation; data and information collection and hearing
August 14	Sediment sampling and suspended solid sampling (neap tide)
August 15 – 16	Longshore current and water quality observation (neap tide)
August 17 – 20	Investigations of the existing port structures
August 21	Suspended solid sampling (spring tide)
August 22 – 23	Longshore current and water quality observation (spring tide)
August 23 – 31	Site investigation; data and information collection and hearing (Takahashi move to Johannesburg on August 23, research for the construction situation and cost information in South Africa; return to Tokyo on September 2)
September 1	Ide, Suzuki, Kashima and Mitsunaga depart from Maputo (return to Tokyo on September 2)
September 2	Additional investigation and meeting with DNP
September 3	Nagao and Iwamiya move to Harare, visit Japan Embassy at Zimbabwe and JICA Office (return to Tokyo on September 5)

II-2 Draft Basic Design Explanation

December 7 – 8 Trip from Tokyo to Maputo

- December 8 Courtesy visit to Ministry of Agriculture and Fisheries;
Site investigation
- December 9 Explanation of Draft Basic Design Report (DB/D) to DNP
and discussion
- December 10 Explanation of DB/D Report to CFM and SAFMAR and
discussion
- December 11 Discussion on DB/D Report with DNP
- December 12-13 Discussion within Study Team
- December 14 Discussion on Minutes of discussion
- December 15 Signing of Minutes of Discussion
- December 16 Move to Harare; visit Japan Embassy at Zimbabwe and
JICA Office, explain and report about the discussion on
DB/D
- December 17-18 Trip from Harare to Tokyo

III. List of the Party concerned in the Recipient Country

1. **Ministerio da Agricultura e Pescas**

Ms. Isidora Esperanca Faztudo	Vice-Ministra da Agricultura e Pescas
Mr. Rodrigues Bila	Secretario Geral
Mr. Herminio Tembe	Director, Direccao Nacional de Pescas
Mr. Joao Simao Nyaima	Oficial Senior de Cooperacao, Direccao Nacional de Pescas
Mr. Rosario Cumbi	Director
Mr. Caetano J. Meque	Director, Porto de Pesca de Maputo
Mr. Silvano Macaneta	Economista, Direccao Nacional de Pescas

2. **Ministerio de Negocios Estrangeiros e Cooperacao**

Mr. Chico Verniz Mortar	Desk Officer para o Japao, Direccao para os paises da Asia e Oceania
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3. **Ministerio de Obras Publicas e Habitacao**

Mr. Jose Coutinho	Chefe do Departamento de Planeamento e Estudos
Mr. Tomas Mangué	Direccao Nacional de Aguas

4. **Ministerio para a Coordenacao da Accao Ambiental**

Francisco I. C. Mabjaia	Secretario Geral
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5. **C. F. M. (Empresa Nacional de Portos e Caminhos de Ferro de Mocambique E.E.)**

Mr. Anibal F. Sebastiao Laice	Director de Engenharia
Mr. Domingos F. Lopes Bainha	Administrador (Executive Board Director)
Mr. Aluisio Q'Mbawe	Engenheiro Electronico
Mr. Sancho E. Q. Junior	Engenheiro Civil
Mr. Augusto Fernando Dimbane	Engenheiro

6. **SAFMAR**

Mr. Eugenio Muianga	Vice-Director
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7. **SOMONAV**

Mr. Matane	President
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IV. Minutes of Discussions

IV-1 Minutes of Discussions of August 12, 1998 ----- IV-2

IV-2 Minutes of Discussions of December 15, 1998 ----- IV-14

Minutes of Discussions
the Basic Design Study
on
the Project for Rehabilitation of Maputo Fishing Port
in
the Republic of Mozambique


In response to a request from the Government of the Republic of Mozambique, the Government of Japan decided to conduct a Basic Design Study on the Project for Rehabilitation of Maputo Fishing Port (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Mozambique a study team (hereinafter referred to as "the Team"), which is headed by Hozumi KATSUTA, Development Specialist, JICA, and is scheduled to stay in the country from August 2 to September 3, 1998. The Team held discussions with the officials concerned of the Government of Mozambique 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.

Maputo, August 12, 1998


Mr. Hozumi KATSUTA
Leader
Basic Design Study Team
Japan International Cooperation Agency


Mr. Rodrigues Armando BILA
Secretary General
Ministry of Agriculture and Fisheries

ATTACHMENT

1. OBJECTIVES

The objectives of the Project are to increase port landing and marketing capacity and to improve efficiency of port operations by rehabilitating and improving infrastructure and by re-equipping fishing port.

2. PROJECT SITE

The Project site is Maputo Fishing Port which appears in Annex-1.

3. RESPONSIBLE AND EXECUTING ORGANIZATION

National Directorate of Fisheries (DNP), Ministry of Agriculture and Fisheries

Organization charts are shown in Annex-2.

4. ITEMS REQUESTED BY THE GOVERNMENT OF MOZAMBIQUE

After discussions with the Basic Design Study Team, the following items were finally requested with priority by the Government of Mozambique.

	components	priority	
		A	B
(a)	Construction of quay wall including demolition of existing Rip-Rap	×	
(b)	Placing of floating jetty		×
(c)	Rehabilitation of Piled Jetty	×	
(d)	Construction of new ice making plant	×	
(e)	Construction of an administration office with a social center		×
(f)	Procurement of move crane		×
(g)	Procurement of fork-lifts		×
(h)	Rehabilitation of Cold Store	×	

The final components of the Project, however, will be decided after further study.

The way of rehabilitation of Piled Jetty (reconstruction/reinforcement/repair) and its objective portion also depend on further study.

5. JAPAN'S GRANT AID SYSTEM

(1)The Government of Mozambique has understood the system of Japan's Grant Aid explained by the Team as described in Annex-3.

(2)The Government of Mozambique will take the necessary measures described in Annex-4 for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

6. SCHEDULE OF THE STUDY

(1)The consultants will proceed to future studies in Mozambique until September 3, 1998.

(2)JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around October, 1998.

(3)In case that the contents of the report is accepted in principle by the Government of Mozambique, JICA will complete the final report and send it to the Government of Mozambique by February, 1999.

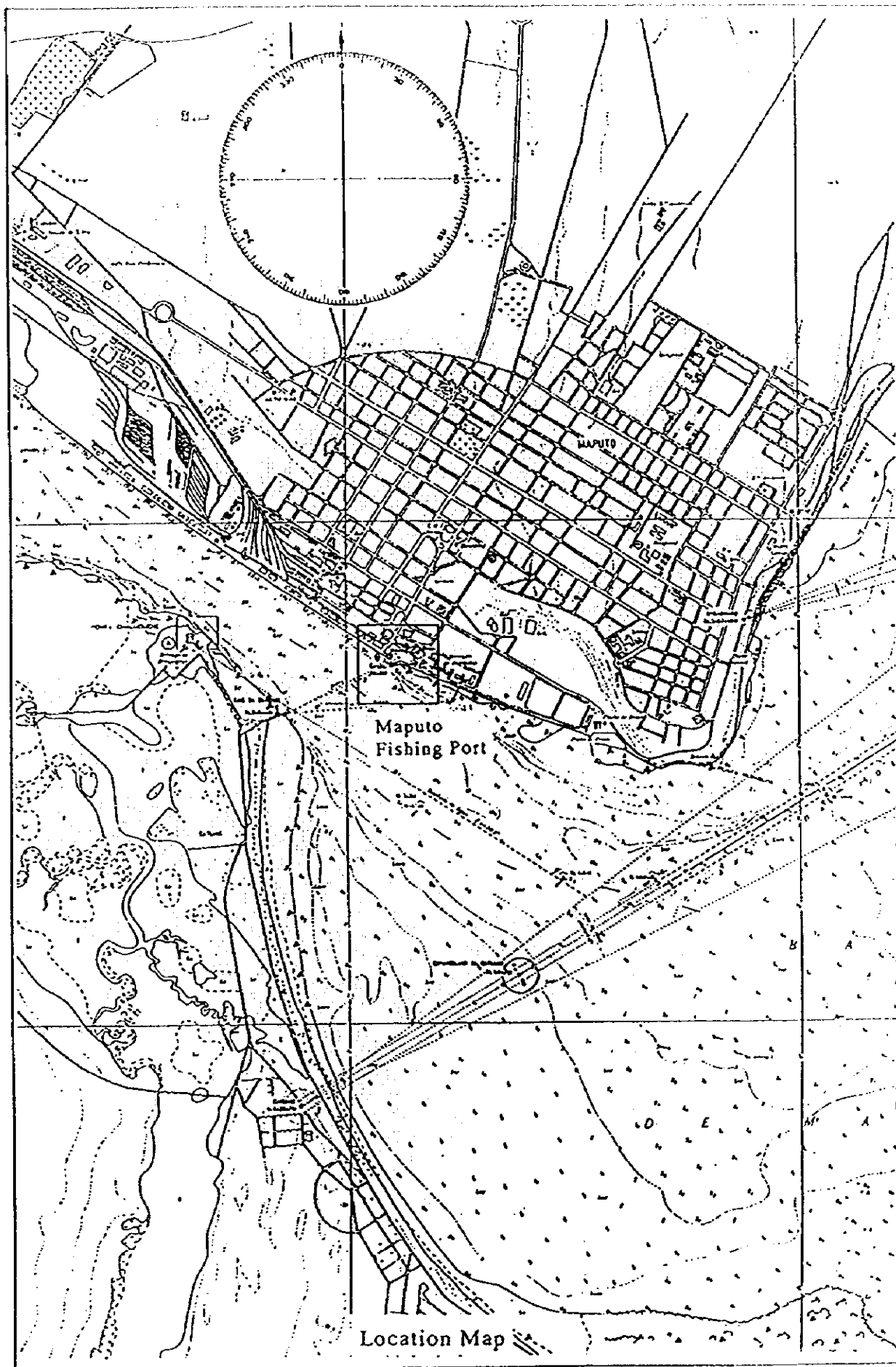
7. OTHER RELEVANT ISSUES

(1)Maputo Fishing Port (PPM) shall implement periodic maintenance dredging to maintain planned depth of water in the port. In case that the budget for dredging of PPM is insufficient for implementing, DNP will allocate necessary budget for dredging. Frequency and amount of maintenance dredging will be suggested in the final report based on the further study.

(2)DNP and PPM shall coordinate with SAFMAR, CFM, SOMONAV and other related organizations concerning preparation and implementation of the Project.

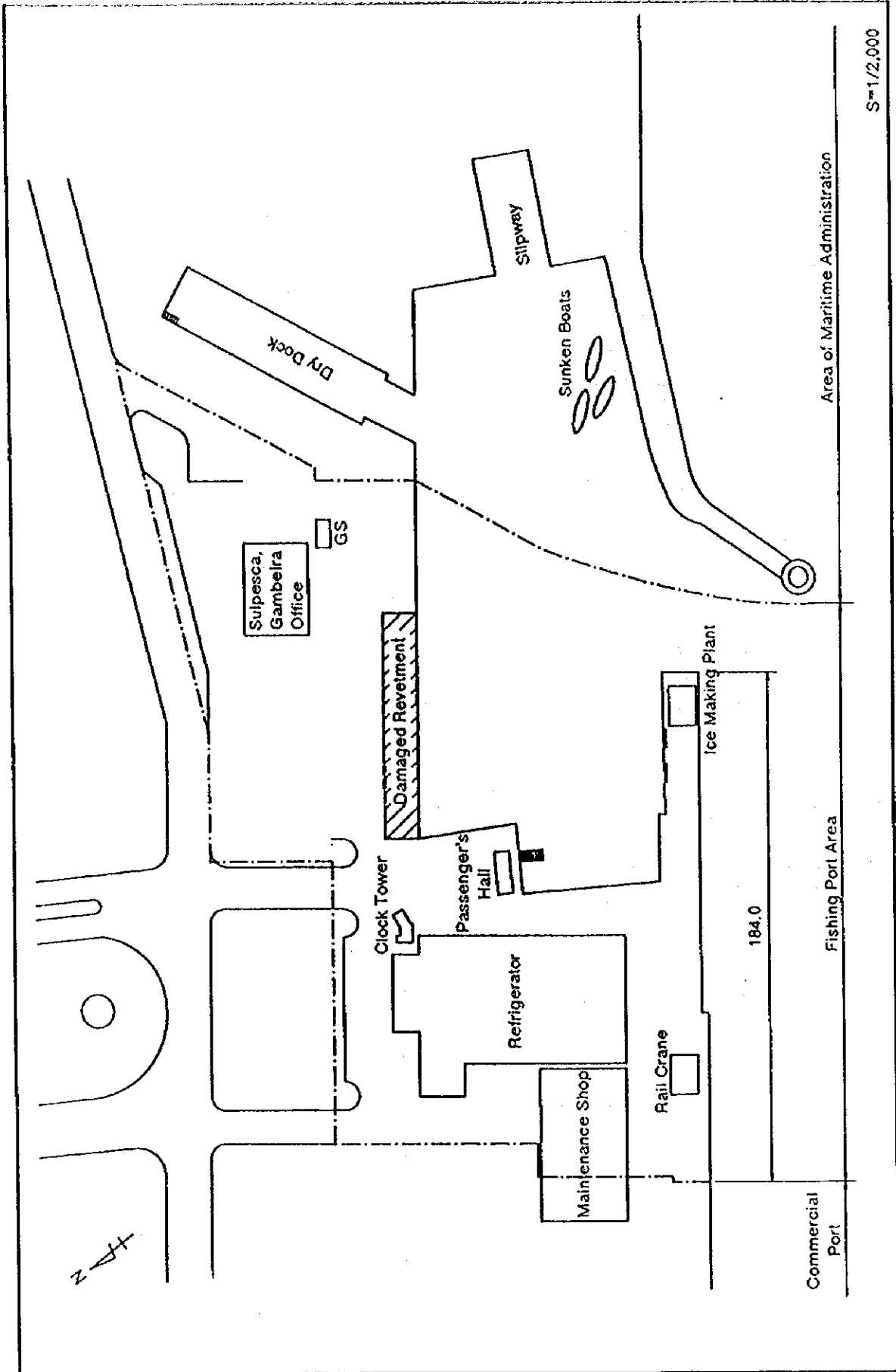
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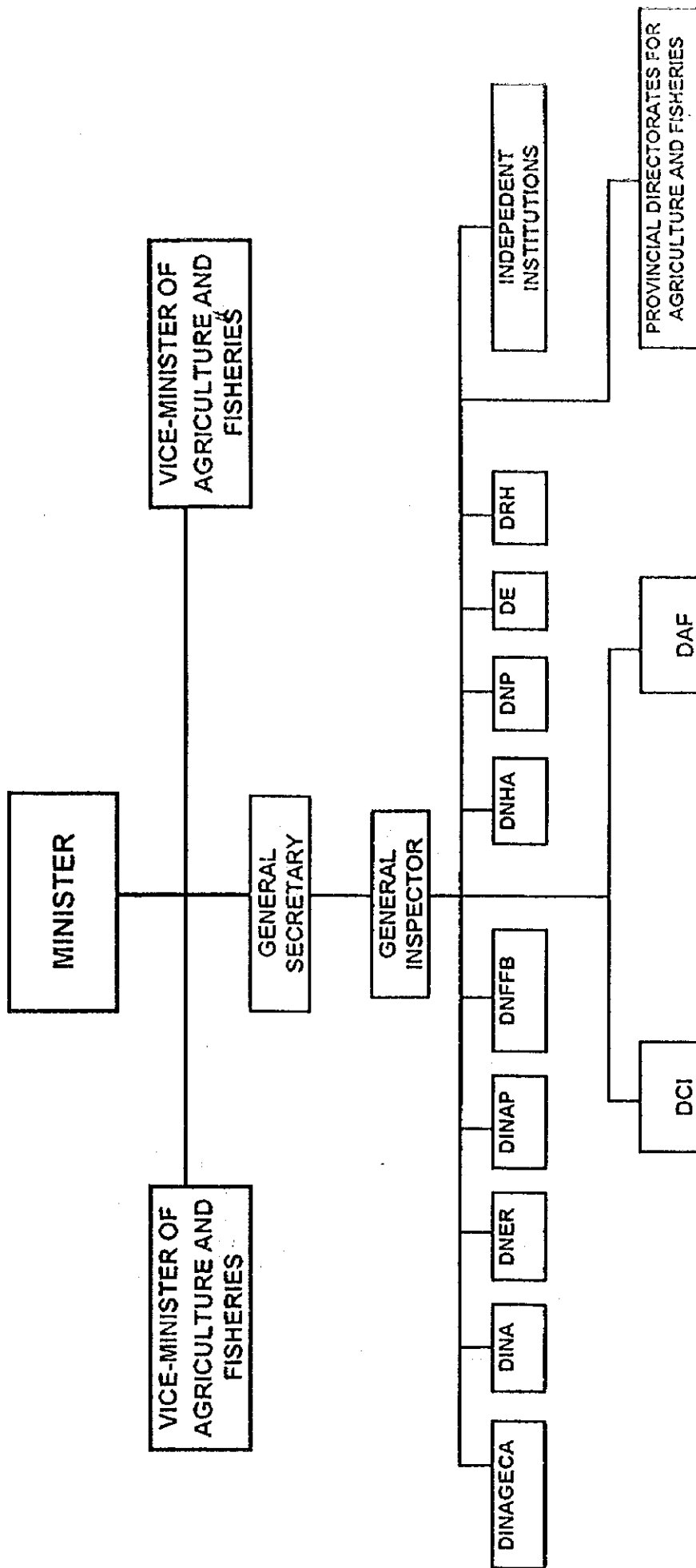


Layout of Existing Maputo Fishing Port

Bl

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ORGANISATION CHART OF MINISTRY OF AGRICULTURE AND FISHERIES



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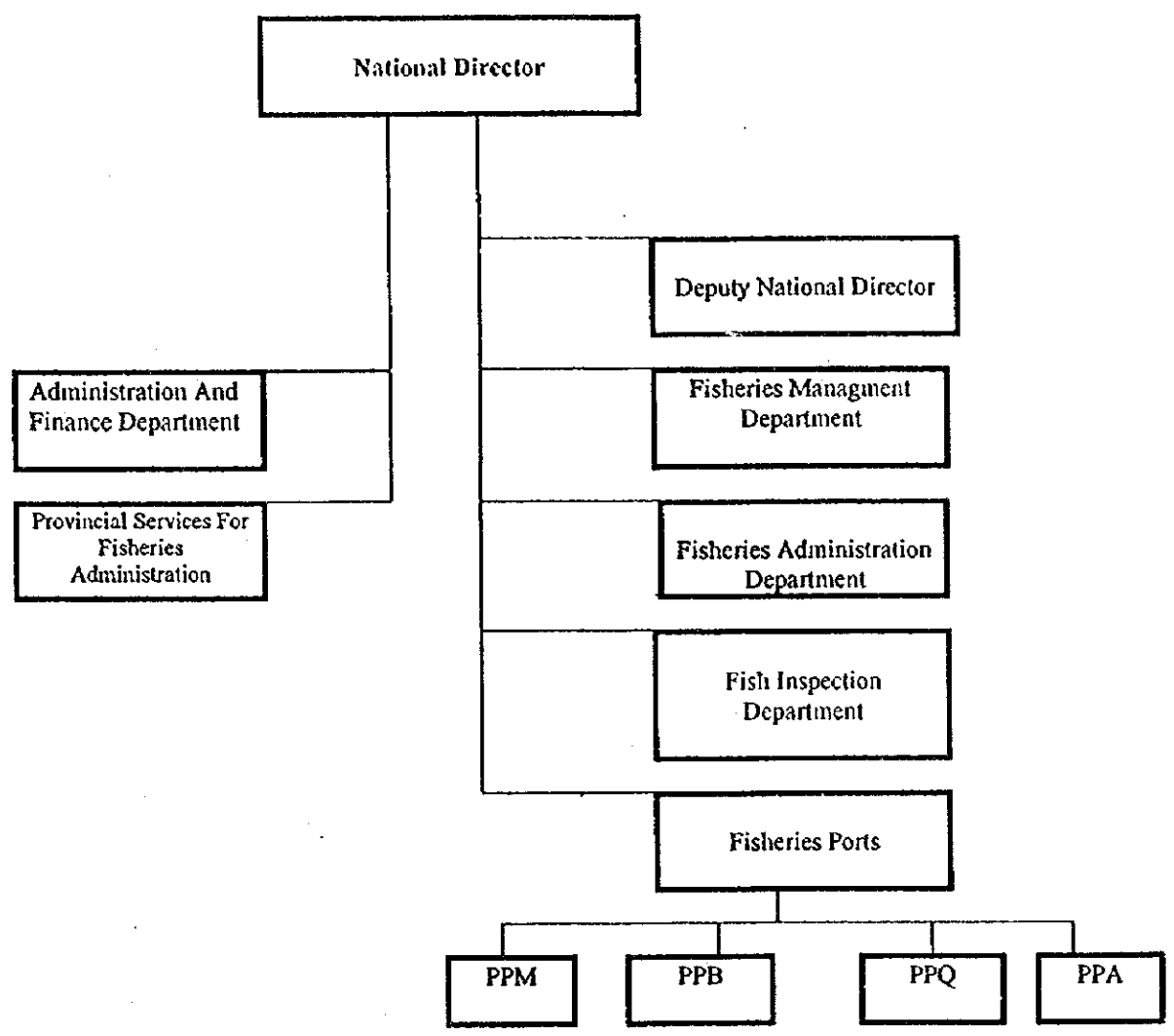
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- **DINAGECA** - National Directorate for Geography and Cadastre
- **DINA** - National Directorate for Agriculture
- **DNER** - National Directorate for Rural Extension
- **DINAP** - National Directorate for Livestock
- **DNFFB** - National Directorate for Forestry and Wildlife
- **DNHA** - National Directorate for Agricultural Hydraulics
- **DNP** - National Directorate of Fisheries
- **DE** - Directorate of Economics
- **DRH** - Human Resources Directorate
- **DCI** - International Cooperation Department
- **DAF** - Administration and Finance Department

3/10

MHC

ORGANIZATION CHART OF NATIONAL DIRECTORATE OF FISHERIES



als

W/K

JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by the recipient country)
Study	(Basic Design Study conducted by Japan International Cooperation Agency (JICA))
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by the Cabinet)
Determination of the Implementation	(The Note exchanged between the Governments of Japan and recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study) using (a) Japanese consulting firm(s).

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, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the study

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- a) Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project.

e) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of the Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The selected firm(s) carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consultant firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) Japan's Grant Aid

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

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

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

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

However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

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5) Necessity of "Verification"

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

6) Undertakings required of the Government of the Recipient Country

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

- (1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- (2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- (3) To secure buildings prior to the procurement in case the installation of the equipment.
- (4) To ensure all the expenses and prompt excursion for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- (5) 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.

7) "Proper Use"

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

8) "Re-export"

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

9) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should 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 the Government of the recipient country or its designated authority under the Verified Contracts.
- 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.

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Necessary measures to be taken by the Government of Mozambique
in case that Japan's Grant Aid is extended to the Project

1. To secure the site for the execution of the Project, including the land for temporary offices, working areas, storage yards and others.
2. To clear, level and reclaim the site prior to commencement of the construction.
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the site.
4. To bear commissions to the Japanese bank for the banking services based upon Banking Arrangement.
5. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation.
6. To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Mozambique with respect to the supply of the products and services under the Verified Contracts.
7. To accord Japanese nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Mozambique and stay therein for the performance of their work.
8. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant.
9. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment.

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Minutes of Discussions

Basic Design Study on the Project for Rehabilitation of Maputo Fishing Port in the Republic of Mozambique (Consultation on Draft Report)

In August 1998, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for Rehabilitation of Maputo Fishing Port (hereinafter referred to as "the Project") to the Republic of Mozambique, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft report of the study.

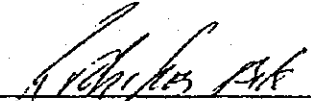
In order to explain the draft and to consult the Government of Mozambique, JICA sent to Mozambique a study team (hereinafter referred to as "the Team"), which is headed by Mr. Yoichi KOBAYASHI, Construction Inspector, Construction Division, Fishing Port Department, Fisheries Agency, and is scheduled to stay in the country from December 7 to 18, 1998.

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

Maputo, December 15, 1998



Mr. Yoichi KOBAYASHI
Leader
Basic Design Study Team
Japan International Cooperation Agency



Mr. Rodrigues Armando BILA
Secretary General
Ministry of Agriculture and Fisheries

ATTACHMENT

1. COMPONENTS OF THE DRAFT REPORT

The Government of Mozambique has agreed to and accepted in principle the components of the Draft Report proposed by the Team.

2. JAPAN'S GRANT AID SYSTEM

- (1) The Government of Mozambique has understood the system of Japan's Grant Aid explained by the Team as described in Annex-1.
- (2) The Government of Mozambique will take the necessary measures described in Annex-2 for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

3. FUTURE SCHEDULE

The Team will make the Final Report in accordance with the confirmed items and sent it to the Government of Mozambique by the end of March, 1999.

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JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

- Application (Request made by a recipient country)
- Study (Basic Design Study conducted by Japan International Cooperation Agency (JICA))
- Appraisal & Approval (Appraisal by the Government of Japan and Approval by the Cabinet)
- Determination of the Implementation (The Note exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

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, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

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- a) Confirmation of the background, objectives and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project.
- e) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

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

The consultant firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) Japan's Grant Aid

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

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

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

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- 4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

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

However, the prime contractors, namely consulting, constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- 5) Necessity of "Verification"

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

- 6) Undertakings required to the Government of the Recipient Country

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

- (1) To secure land necessary for the site of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- (2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- (3) To secure buildings prior to the procurement in case the installation of the equipment.
- (4) 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.
- (5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal

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levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

7) "Proper Use"

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

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9) Banking Arrangement (B/A)

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- 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 recipient country or its designated authority.

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**Necessary measures to be taken by the Government of Mozambique
In case that Japan's Grant Aid is extended to the Project**

1. To secure the site for the execution of the Project, including the land for temporary offices, working areas, storage yards and others.
2. To clear level and reclaim the site prior to commencement of the construction.
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the site.
4. To bear commissions to the Japanese bank for the banking services based upon Banking Arrangement.
5. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation.
6. To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Mozambique with respect to the supply of the products and services under the Verified Contracts.
7. To accord Japanese nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Mozambique and stay therein for the performance of their work.
8. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant.
9. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities well as for the transportation of the equipment.

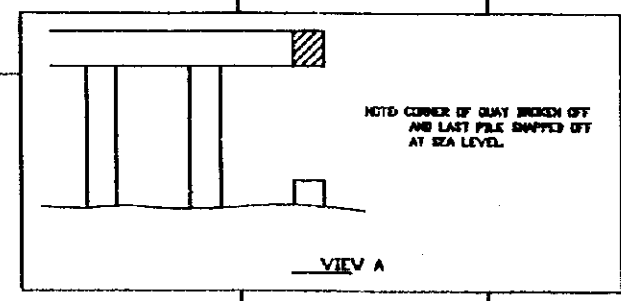
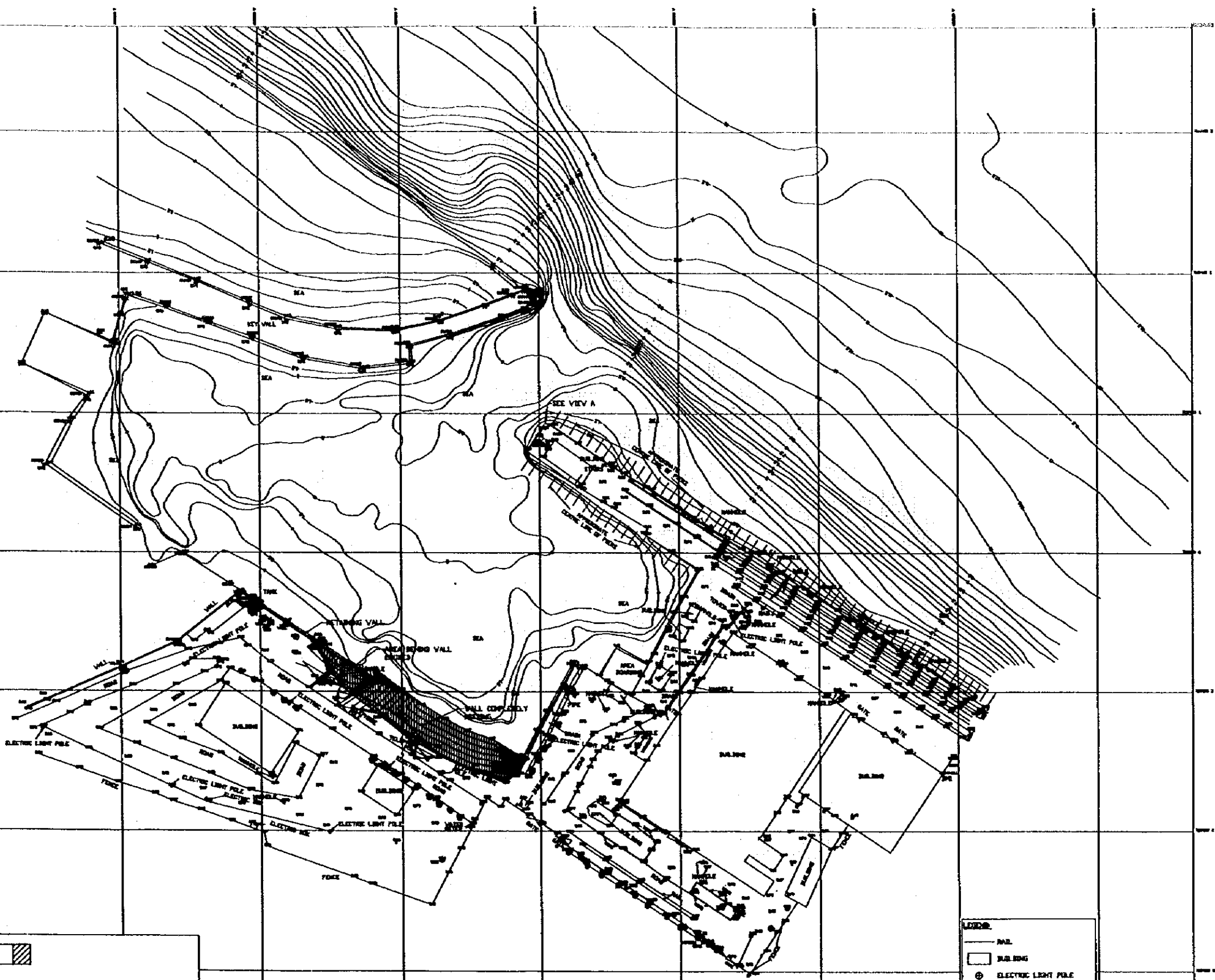
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V. Topographic/Bathymetric Survey Map

Drawing No.
**HARBOUR
 MAPUTO FISHING**
 Contract
 Client

Scale 1:500
 Date 14 OCTOBER 1998
 Checked
 Drawn
 Approved by
 Recommended by

REVISIONS		
No.	Date	Description



24 1 Y 406 082.84 X 7 187 179.23 Z 6.398
 24 2 Y 406 947.28 X 7 187 066.76 Z 6.804

- LEGEND:
- WALL
 - ▭ BUILDING
 - ⊙ ELECTRIC LIGHT POLE
 - TELEPHONE POLE
 - TREE
 - GATE
 - ⊕ BEACH MARK
 - ▨ AREA FOR REHABILITATION

VI. References

No.	Description	Copy/ Original	Publisher (Organization)	Year/Mo nth
1	Relatorio Tecnico do Exercicio Economico de 1997	Copy	Porto de Pesca de Maputo	1998. 1
2	Relatorio Tecnico do Exercicio Economico de 1996	Copy	Porto de Pesca de Maputo	1997. 1
3	Relatorio Tecnico do Exercicio Economico de 1995	Copy	Porto de Pesca de Maputo	1996. 1
4	Listagem geral dos barcos industriais	Copy	Direccao Nacional de Pescas	1998.10
5	Listagem geral dos barcos Semi-industriais	Copy	Direccao Nacional de Pescas	1998. 7
5A	An attachment to the above.	Copy	Porto de Pesca de Maputo	1998. 9
6	Resumo de Licencas Semi-industrals	Copy	Direccao Nacional de Pescas	1998. 7
7	Abstract of the National Development Program	Copy	Ministerio da Agricultura e Pescas	1997. 6
8	Boletim da Republica	Copy	Government	1997. 1
8A	Regulamento Interno dos Orgaos Centrais	Copy	Ministerio da Agricultura e Pescas	1998. 3
9	Politica Pesqueira e Estrategias de Implementacao	Copy		1996. 5
10	Plano Director	Copy	SEP	1994. 8
10A	Master Plan - Identification of Projects	Copy	SEP	1994. 8
11	Fundo de Fomento Pesqueiro	Copy	IDPPE (Insituto de Desenvolvimento da Pesca de	1996. 5
12	Year Book 1996	Original	Instituto Nacional Estatstica	1996
13	Regulamento de Exploracao do Cais de Pesca de Maputo e Livro de Tarifas	Copy	Porto de Pesca de Maputo	1991. 1
14	Estatisticas de Pesca 1996	Copy	Direccao Nacional de Pescas	1996
15	Programa do Governo - 05/05/95	Copy	Government	1996
16	Estatisticas de Pesca 1998	Copy	Direccao Nacional de Pescas	1998
17	Fishery Port Rehabilitation Project	Copy	Direccao Nacional de Pescas	1998. 5
18	PPM Embarcacoes Atracdas	Copy	Porto de Pesca de Maputo	1998. 8
19	Categorias dos Peixes	Copy	Porto de Pesca de Maputo	1998. 8
20	Organigrama de PPM	Copy	Porto de Pesca de Maputo	1998. 8

No.	Description	Copy/ Original	Publisher (Organization)	Year/Mo nth
21	Fornecimento de Gelo	Copy	Porto de Pesca de Maputo	1998. 8
22	Environmental Framework Law - Lei No. 20/97 de 1 de Outubro	Copy	Boletim da Republica - Publicacao Oficial da Republica de	1997.10
23	Programa Nacional de Gestao Ambiental	Original	Ministerio para a Coordenacao da Accao Ambiental	1997. 5
24	Boletim de Analise de Agua 2311/98	Original	Agua do Maputo, E. E.	1998. 8
25	Reuniao de Financiadores Objectivos e Resultados Esperados	Copy		
26	Mapa dos Custos de Manutencao e Reparacoes dos Equipamentos e Edificios	Copy	Porto de Pesca de Maputo	1998. 9
27	Orcamento de Investimento 1998	Copy		
28	Sondagens Geologicas no Porto de Lourenco Marques - DC-1A~DC-15	Copy	C.F.M. Library	1961. 9~ 62. 1.
29	Sondagens Geologicas no Porto de Lourenco Marques - PCM-1~PCM-7	Copy	C.F.M. Library	1962. 6~ 62. 7.
30	Perfil de Sondagem Geologicas - GM-1~GM-4	Copy	C.F.M. Library	1970. 6~ 70. 8.
31	Perfil de Sondagem Geologicas - DCR-1~DCR-5	Copy	C.F.M. Library	1970. 7~ 70. 8
32	Sounding Survey Map along Wharves (Fishing Port - Commercial Port)	Copy	C.F.M. Library	1968
33	Estudo do Perfil de Dragagem No Interior da Doca da Capitania	Copy	NORAD - Norwegian Agency for Development and Cooperation	1992. 6
34	Dragagem na Doca Molhada da Capitania - Relatorio	Copy	Empresa Mocambicana de Dragagens (EMODRAGA, EP)	1997.12
35	Estudo do Plano Geral do Porto de Lourenco marques - Capitulo V	Copy	Direccao dos Portos Caminhos de Ferro e Transportes de	1958.12
36	Code of Practice for Pile Foundations	Original	South African Bureau of Standards / No. 88	1972
37	Bending Dimensions and schedule of steel reinforcement of concrete	Original	South African Bureau of Standards / No. 82	1997
38	Code of Practice for the Structural Use of Steel	Original	South African Bureau of Standards / No. 162-3	1984
39	Method of testing cement, Part 1	Original	South African Bureau of Standards / No. 196-1	1994
40	Method of testing cement, Part 2	Original	South African Bureau of Standards / No. 196-2	1994
41	Standardized Specification for Civil Engineering Construction (Piling)	Original	South African Bureau of Standards / No. 1200F	1983
42	Standardized Specification for Civil Engineering Construction (Concrete: Structural)	Original	South African Bureau of Standards / No. 1200G	1982
43	Standardized Specification for Civil Engineering Construction (Concrete: Ordinary Buildings)	Original	South African Bureau of Standards / No. 1200GB	1984

No.	Description	Copy/ Original	Publisher (Organization)	Year/Mo nth
44	Standardized Specification for Civil Engineering Construction (Precast Concrete)	Original	South African Bureau of Standards / No. 1200GE	1984
45	Standardized Specification for Civil Engineering Construction (Prestressed Concrete)	Original	South African Bureau of Standards / No. 1200GF	1984
46	Standardized Specification for Civil Engineering Construction (Structural Steelwork)	Original	South African Bureau of Standards / No. 1200H	1990
47	Regulamento de Seguranca do Pessoal e Higiene no Trabalho	Copy	Provincia de Mocambique Imprensa / Nacional	1971
48	Regulamento de Seguranca das Construcoes contra os Sismos	Copy	Republica Portuguesa	1971
49	Normas de Seguranca das Instalacoes Electricas de Baixa Tensao	Copy	Republica Portuguesa	1972
50	Regulamentos Gerais das Canalizacoes de Agua e de Esgoto	Copy	Republica Portuguesa	1972
51	Regulamento Geral das Edificacoes Urbanas	Copy	Ministerio da Construcao e Aguas / Direccao Nacional de Economia	1976
52	Regulamento de Betoas de Ligantes Hidraulicos	Copy	Republica Portuguesa	1976
53	Regulamento de Solicitacoes em Edificios e Pontes	Copy	Republica Portuguesa	1977
54	Programas de Concurso Tipo e Cadernos de Encargos Tipo para as Empreitadas de Obras Publicas	Copy	Republica Portuguesa	1979
55	Regulamento de Estruturas de Betao Armado	Copy	Universidade Eduardo Mondlane / Departamento de Engenharia Civil	1987. 5
56	Regulamento de Estruturas de Aco para Edificio	Copy	Universidade Eduardo Mondlane / Departamento de Engenharia Civil	1987.10
57	Instrucoes para Calculo dos Honorarios de Projectos de Obras Publicas	Copy	Ministerios das Obras Publicas e das Comunicacoes	1987. 4
58	Dados Geograficas Gerais sobre a R.P.M. para Elaboracao de Projectos de	Copy	Ministerio da Construcao e Aguas / Direccao Nacional de Economia	1987. 9
59	Condicoes Tecnica Gerais para Elaboracao de Projectos de Edificio	Copy	Ministerio da Construcao e Aguas / Direccao Nacional de Economia	1990

JICA