

FISHERIES DIVISION

MINISTRY OF AGRICULTURE & FISHERIES  
SOLOMON ISLANDS

No. 01

**BASIC DESIGN STUDY REPORT  
ON  
THE HONIARA CENTRAL MARKET  
DEVELOPMENT PROJECT  
IN  
SOLOMON ISLANDS**

**JANUARY 1996**

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**JAPAN INTERNATIONAL COOPERATION AGENCY  
CRC OVERSEAS COOPERATION Inc.**

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BASIC DESIGN STUDY REPORT ON THE HONIARA CENTRAL MARKET DEVELOPMENT PROJECT IN SOLOMON ISLANDS JANUARY 1996 JAPAN INTERNATIONAL COOPERATION AGENCY CRC OVERSEA

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1129597(9)

マイクロ  
フィルム作成

## PREFACE

In response to a request from the Government of Solomon Islands, the Government of Japan decided to conduct a basic design study on the Honiara Central Market Development Project in Solomon Islands and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Solomon Islands a study team from June 25 to July 21, 1995.

The team held discussions with the officials concerned of the Government of Solomon Islands, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Solomon Islands in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Solomon Islands for their close cooperation extended to the teams.

January, 1996



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Kimio Fujita  
President  
Japan International Cooperation Agency



January, 1996

Mr. Kimio Fujita  
President  
Japan International Cooperation Agency  
Tokyo, Japan

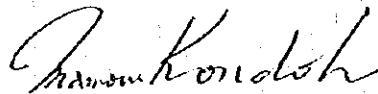
**Letter of Transmittal**

We are pleased to submit to you the basic design study report on the Honiara Central Market Development Project in Solomon Islands.

This study was conducted by CRC Overseas Cooperation Inc., under a contract to JICA, during the period from June 20, 1995 to January 12, 1996. In conducting the study, we examined the feasibility and rationale of the project with due consideration to the present situation of Solomon Islands and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

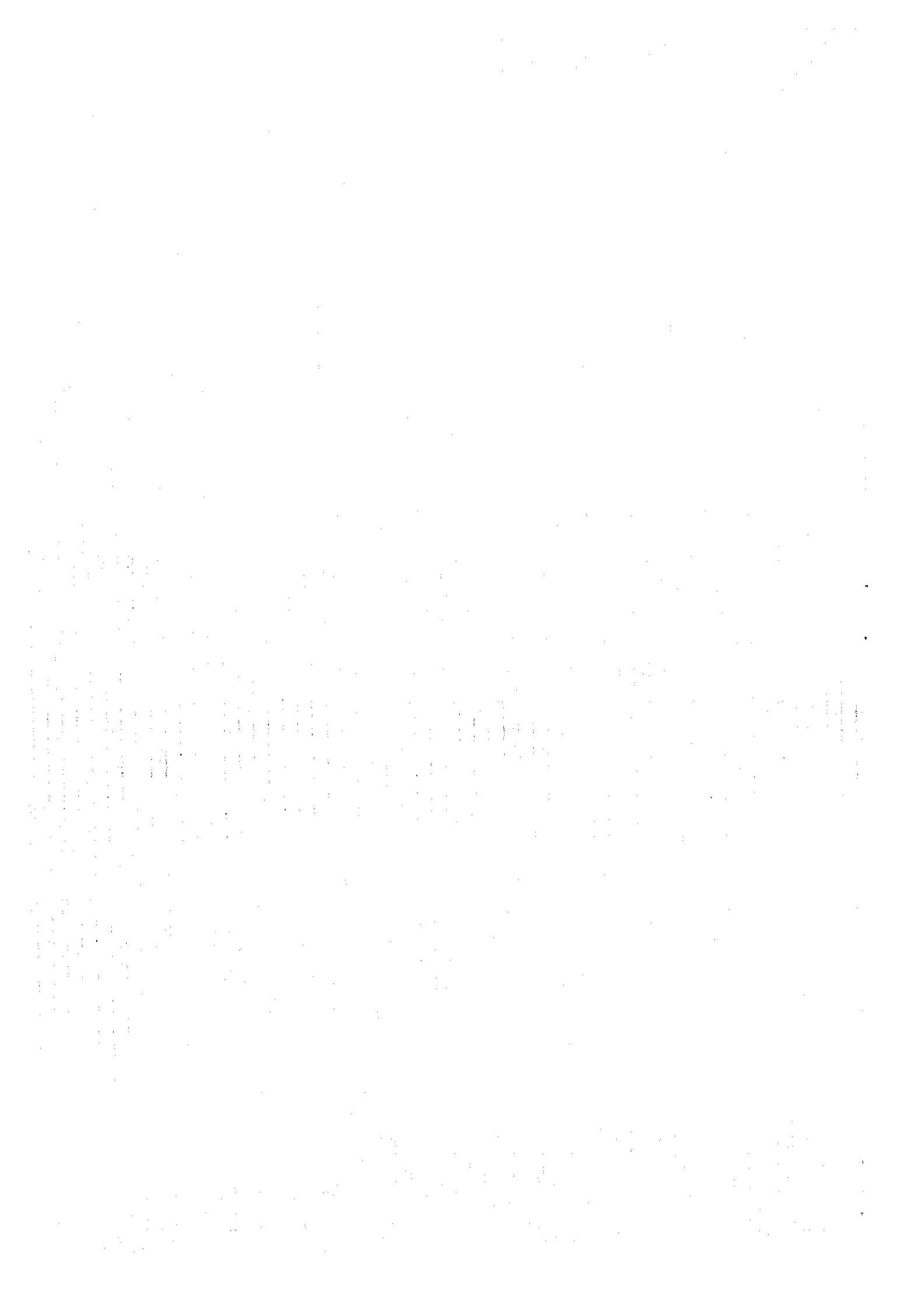


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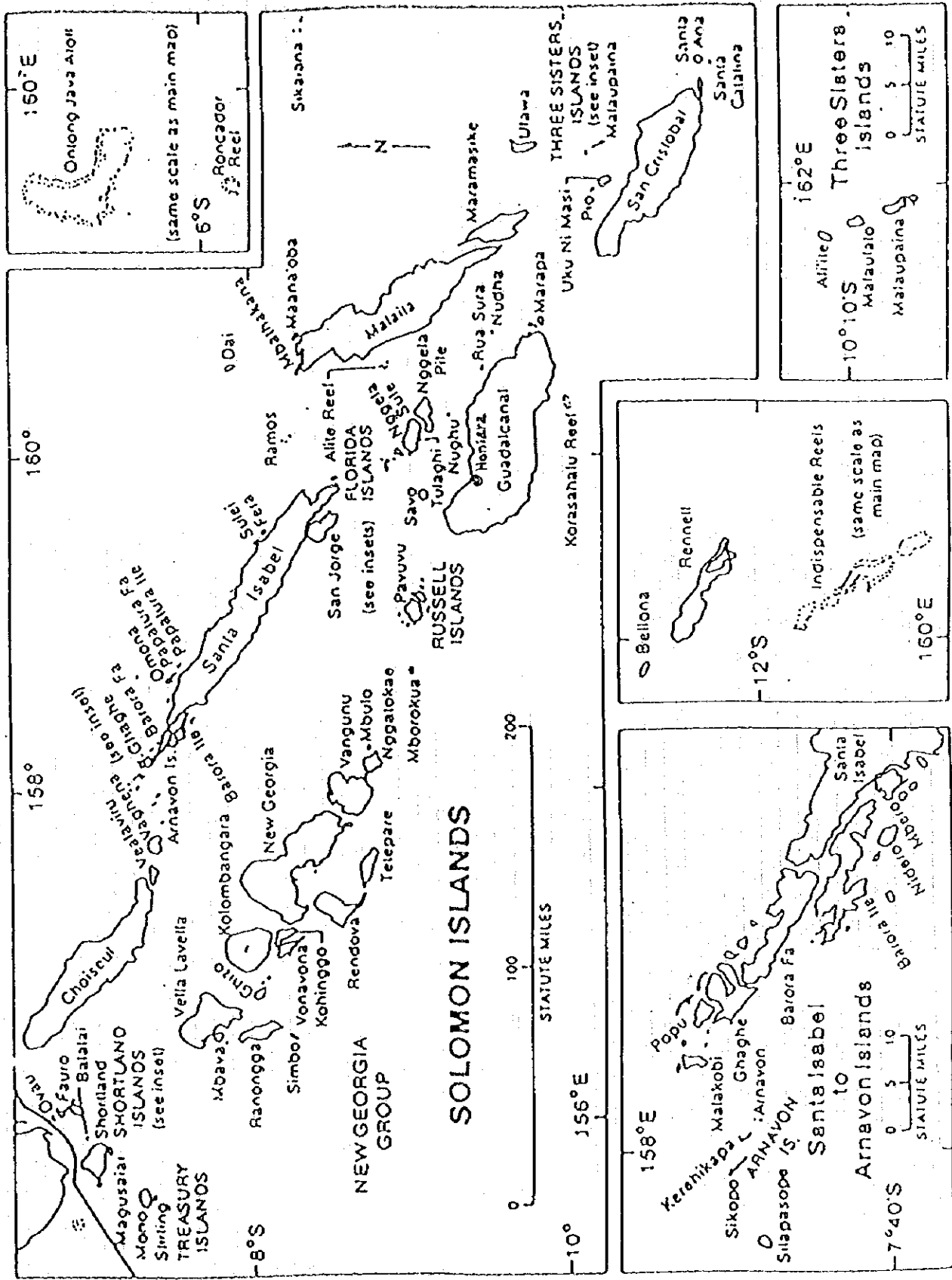
Project Manager

Basic design study team on  
the Honiara Central Market Development  
Project in Solomon Islands

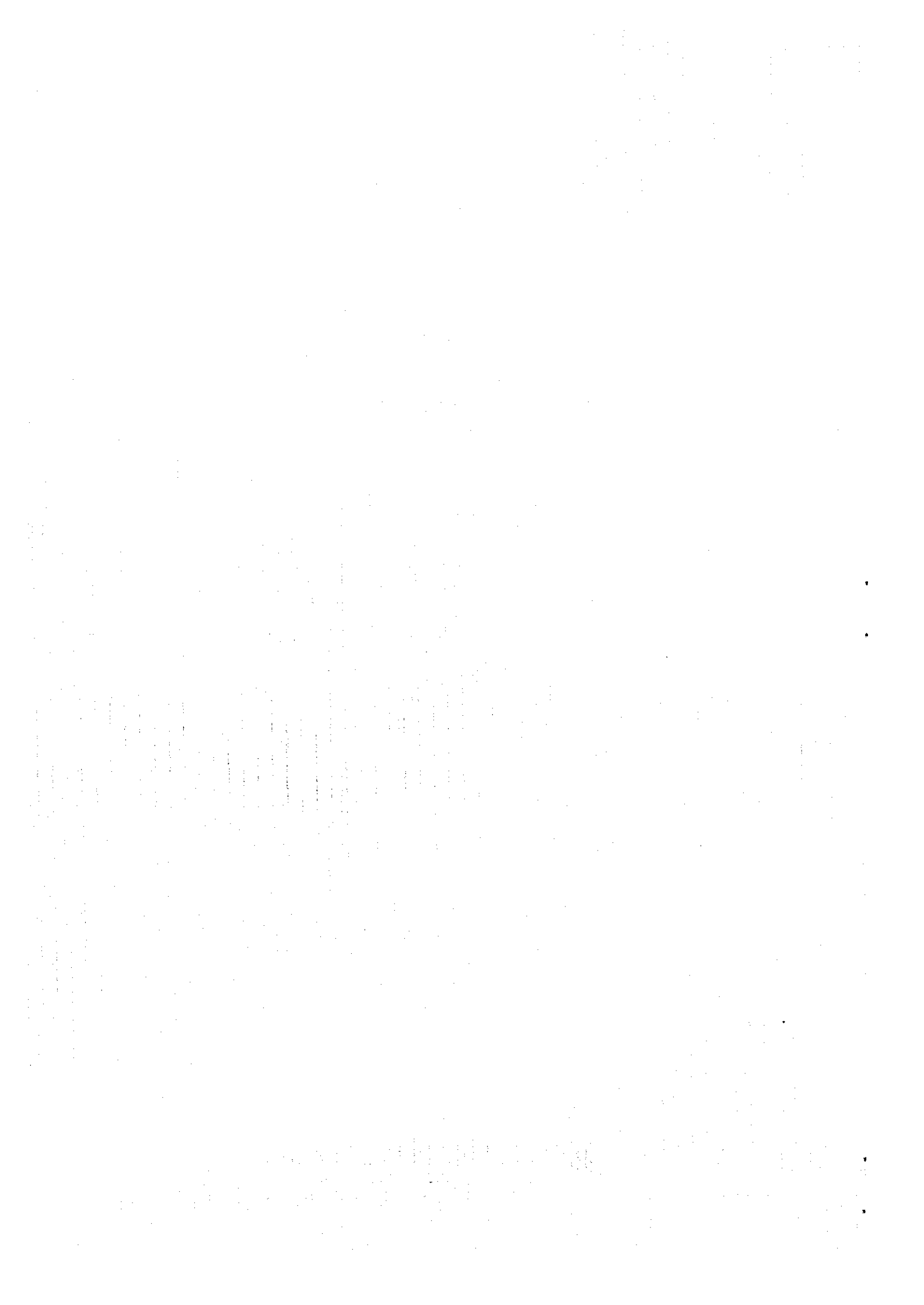
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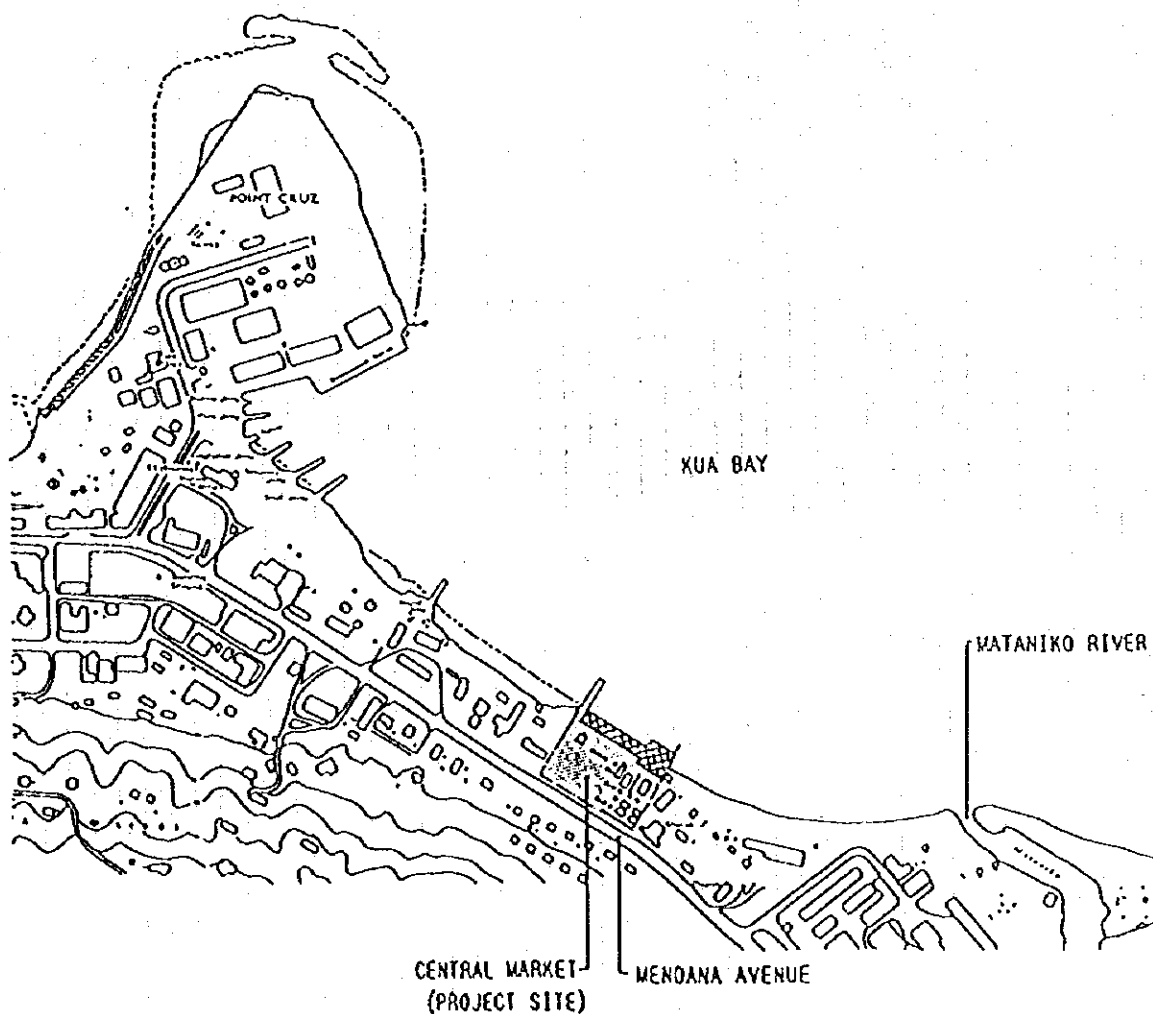
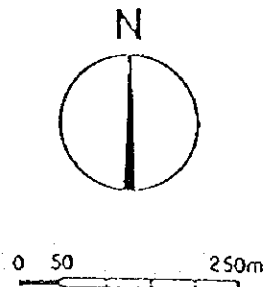
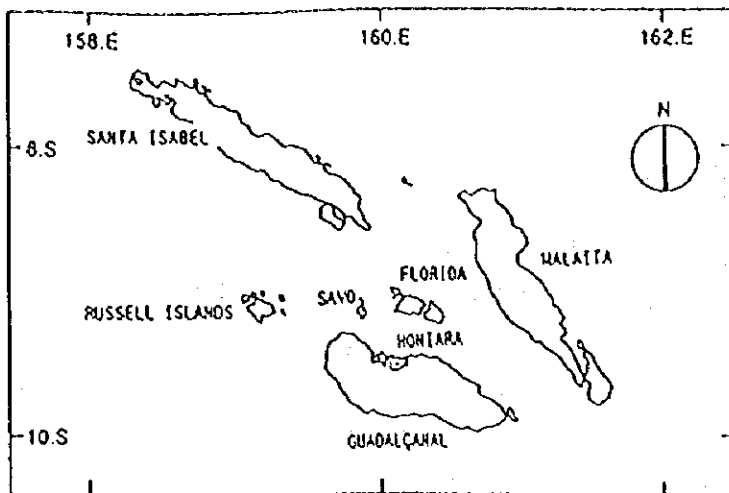




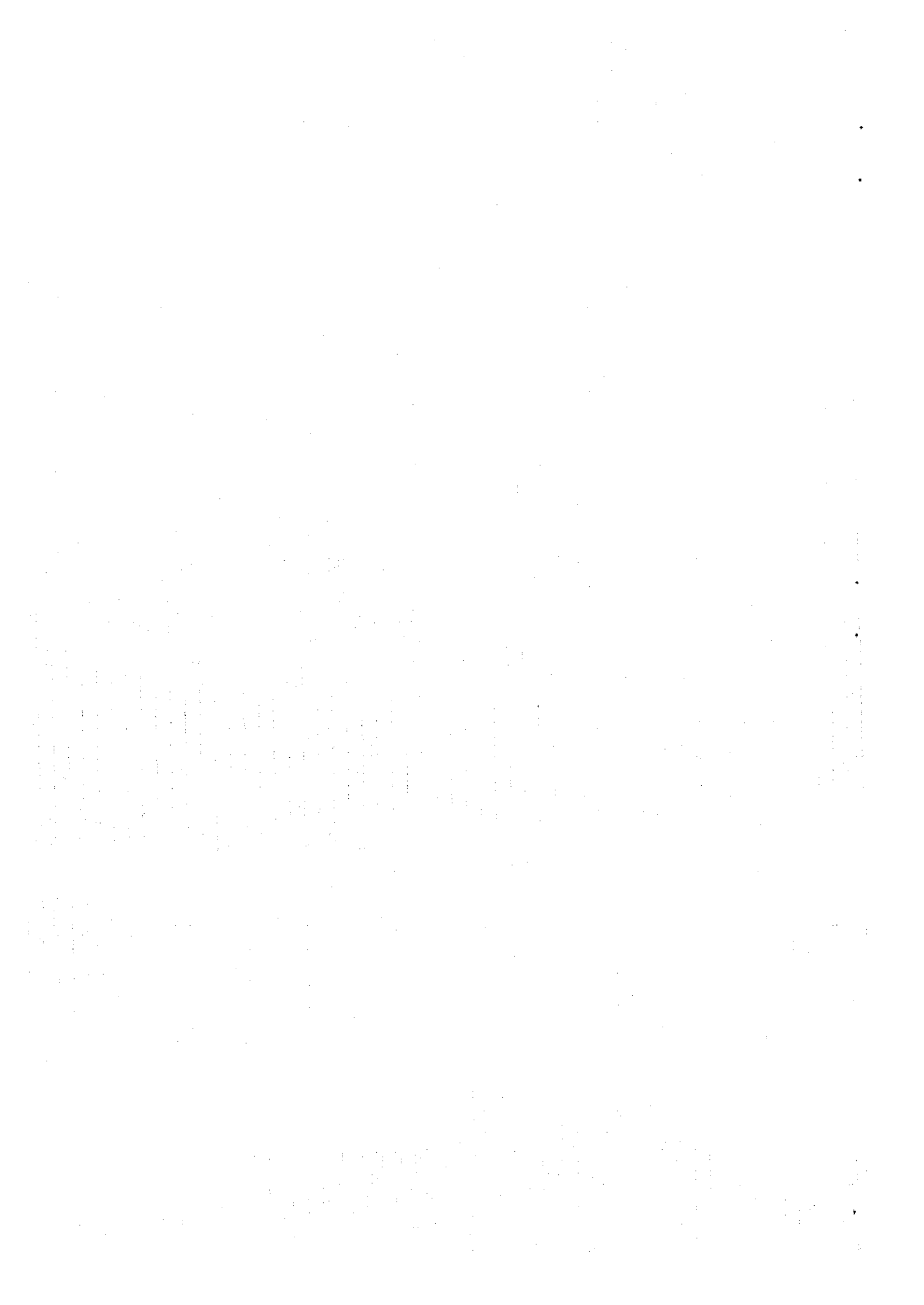


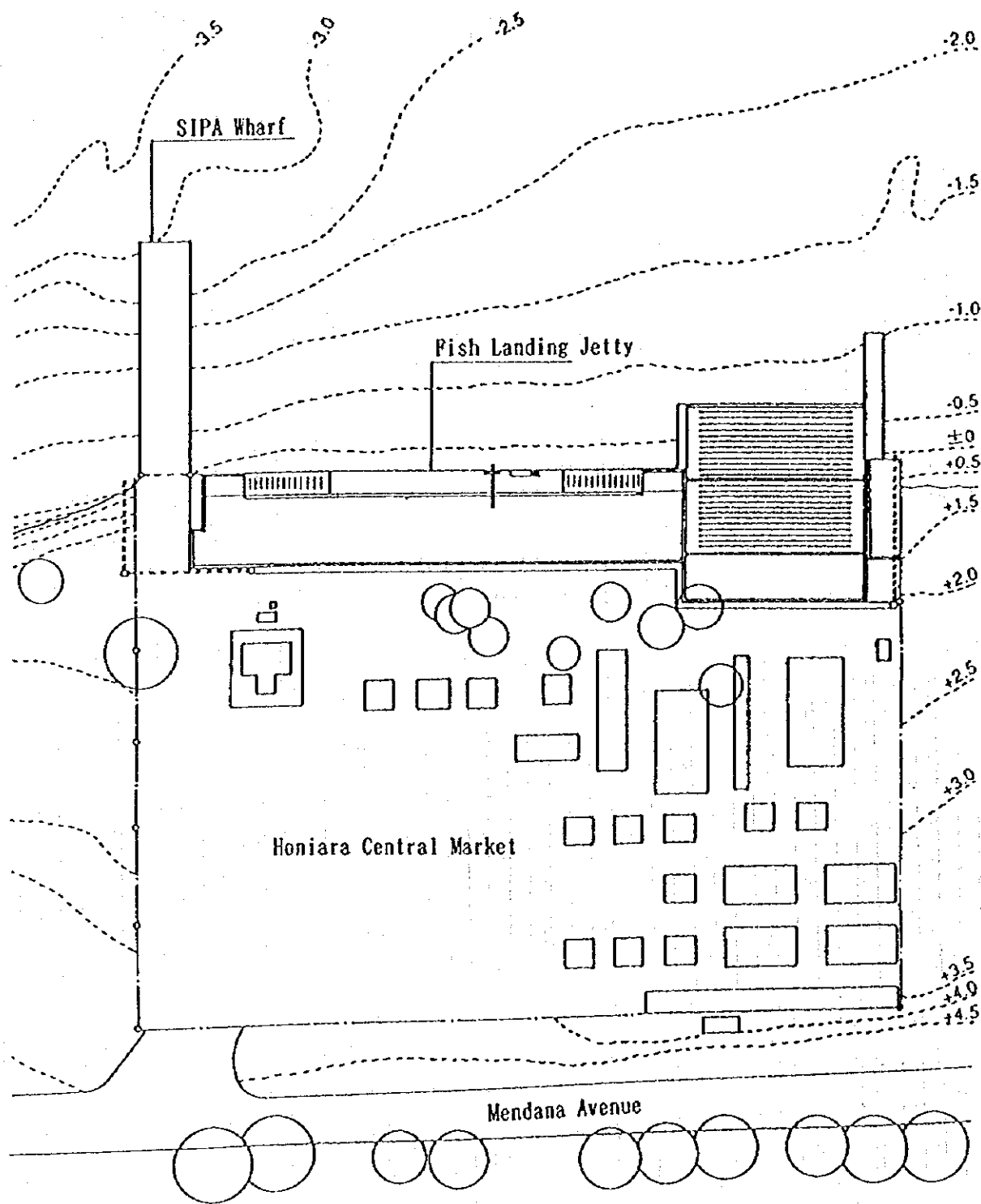
MAP OF SOLOMON ISLANDS



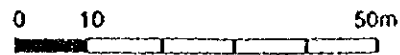


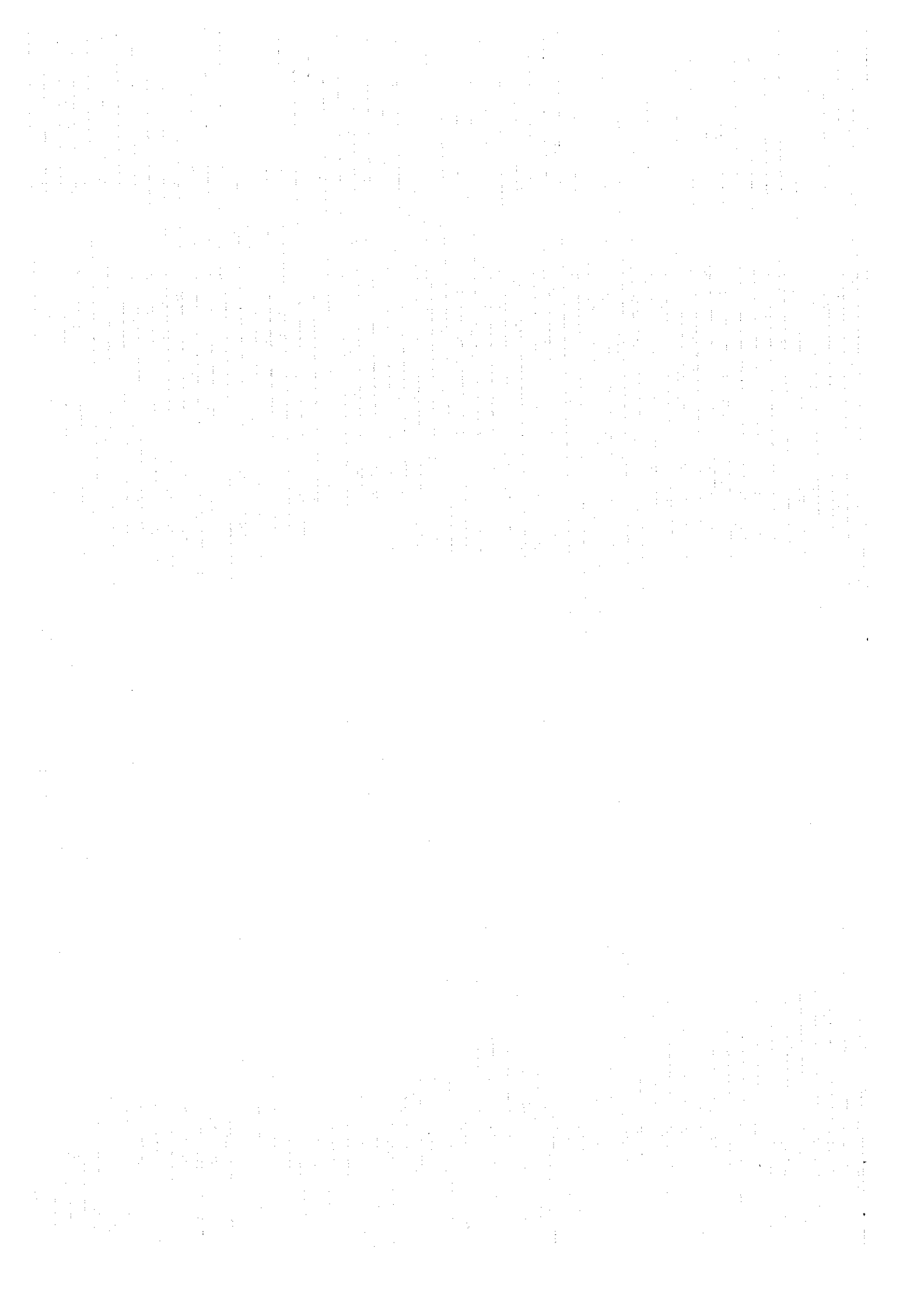
HONIARA CITY AROUND THE SITE

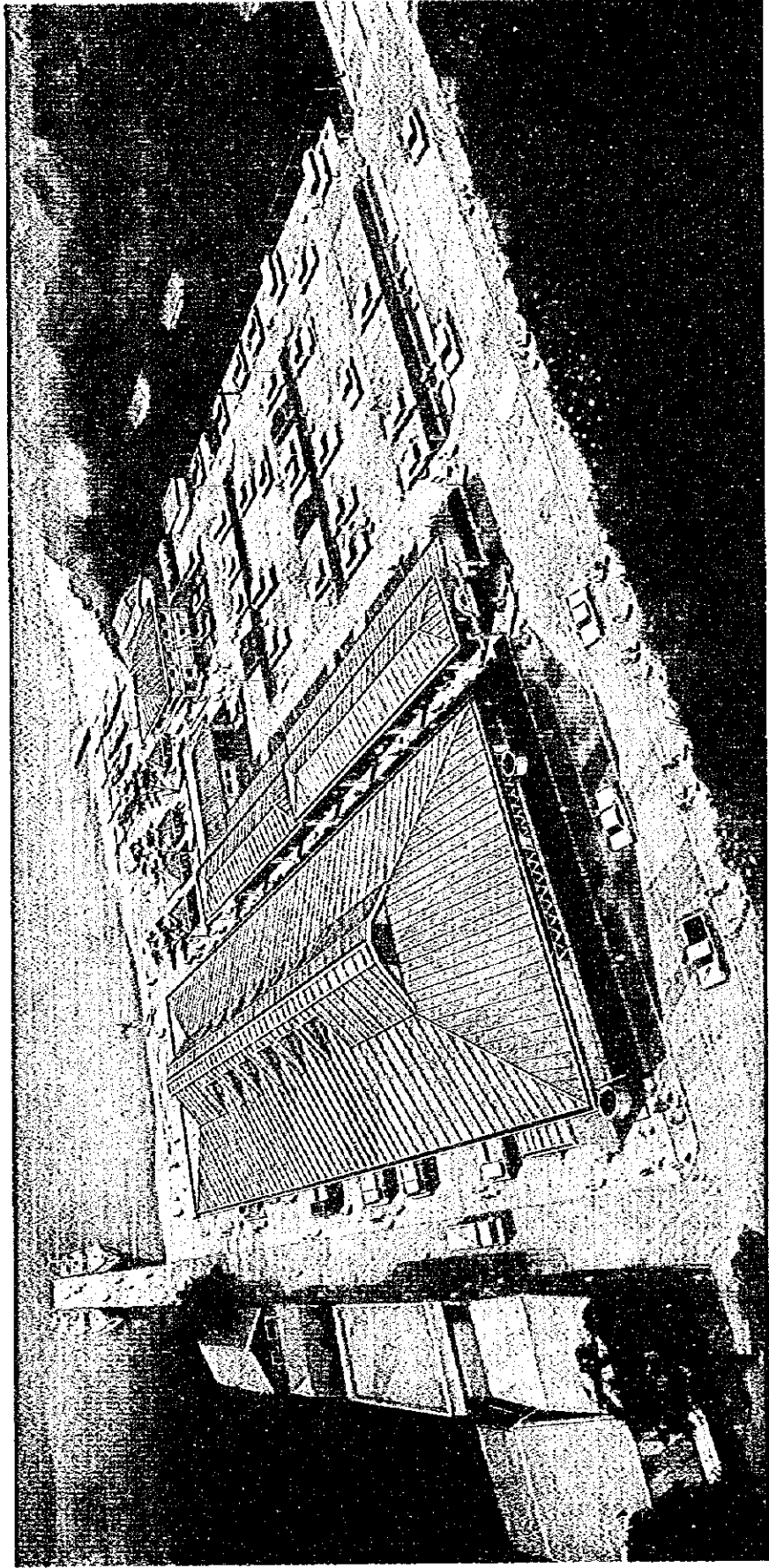




HONIARA CENTRAL MARKET (CONSTRUCTION SITE)







The Honiara Central Market Development Project in Solomon Islands

## ABBREVIATIONS

A I D A B	.....	Australian International Development Assistance Bureau
C E M A	.....	Commodities Export Market Authority
E C	.....	European Community
F A O	.....	Food and Agriculture Organization (United Nations)
F F A	.....	Forum Fisheries Agency
F R P	.....	Fibre Reinforced Plastic
G D P	.....	Gross Domestic Product
H F M A	.....	Honiara Fish Marketing Authority
H T C	.....	Honiara Town Council
I C L A R M	.....	International Centre for Living Aquatic Resources Management
J I C A	.....	Japan International Cooperation Agency
J O C V	.....	Japan Overseas Cooperation Volunteers
M O F	.....	Ministry of Finance
N F D	.....	National Fisheries Development Ltd.
O F C F	.....	Overseas Fishereis Cooperation Foundation
R F E P	.....	Rural Fisheries Enterprise Project (EC)
S I E A	.....	Solomon Islands Electricity Authority
S I P A	.....	Solomon Islands Port Authority
S T L	.....	Solomon Taiyo Limited



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Letter of Transmittal

Location Map / Perspective

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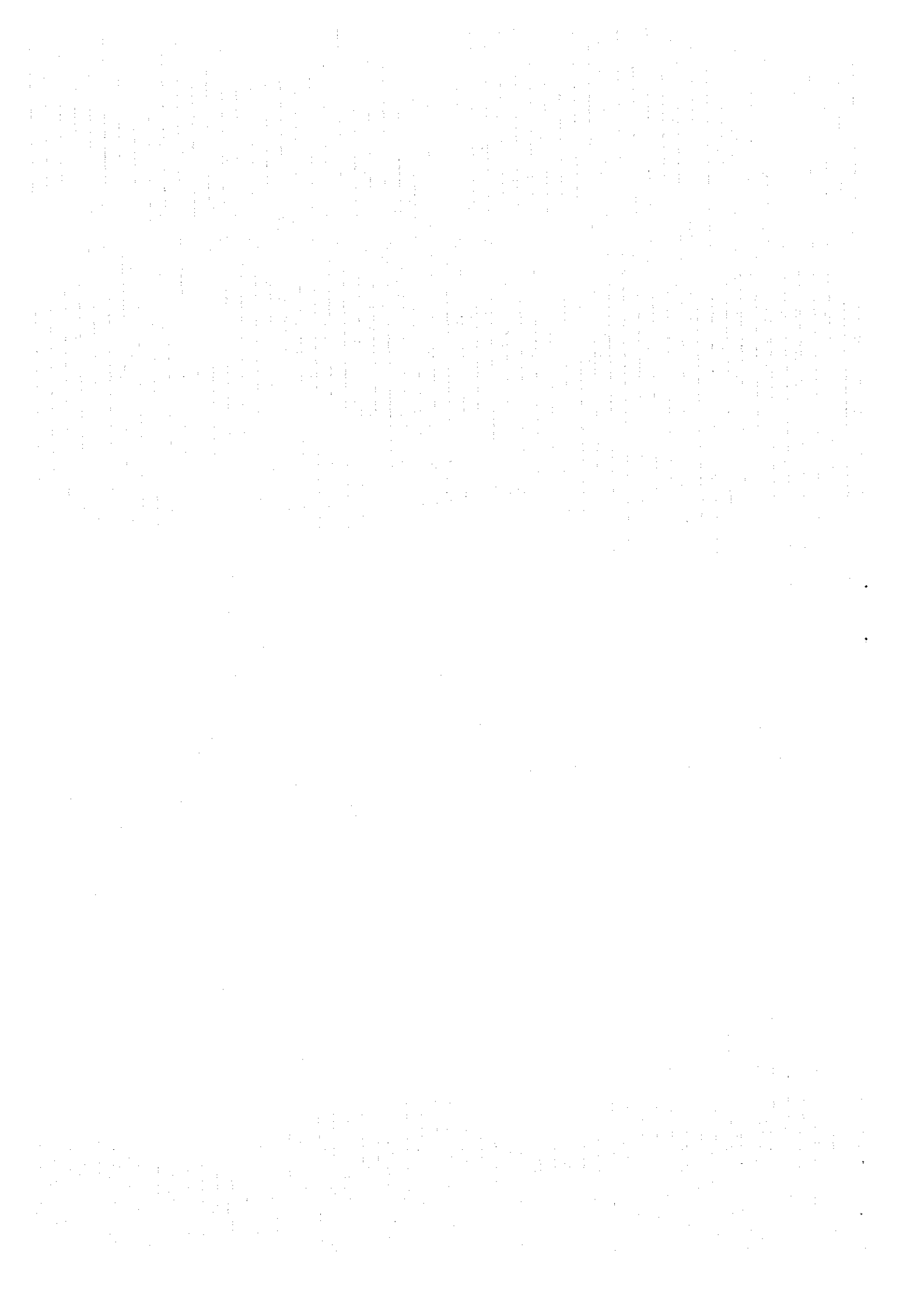
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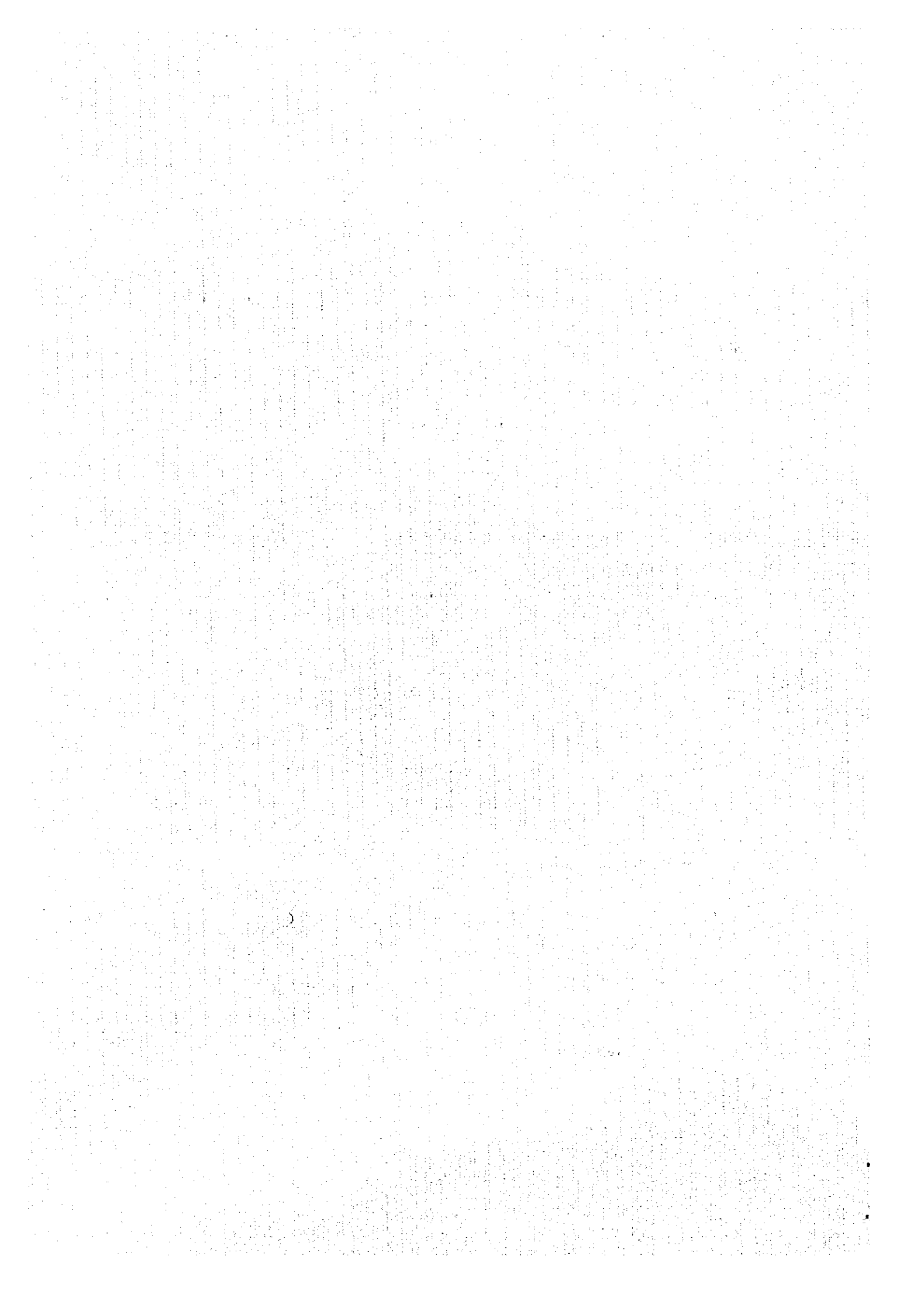
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## **CHAPTER 1**

### **BACKGROUND OF THE PROJECT**



## Chapter 1. Background of the Project

### 1-1 Background

The economy of Solomon Islands depends largely on export of primary products, which center on marine products, lumber, palm oil, copra, cacao, etc., and they account for 90 percent of the total export. The economy of Solomon Islands is, like other oceanian nations, characterized by dual economic structure of traditional subsistent economy in rural area, and monetary economy in the capital city of Honiara and other cities.

The statistical number of employees, which is as small as around 27 thousand out of potential employees of about 190 thousand in total population of 370 thousand, will explain the situation. Of which government officials account for 40 percent and 30 percent of them is employed in export sector of primary industries such as fisheries, lumber, and coconuts. Most of the people in outer islands engage in traditional artisanal fisheries and petty farming, which make it difficult to make statistical classification by sector exactly.

In order to develop the economy of Solomon Islands, integrated rural economic development is essential and development of small scale primary industries in rural area would contribute to stable supply of fresh food to urban consumers and provide opportunities of cash income for local producers.

With the spread of monetary economy, local artisanal fishermen and petty farmers are shifting their lives from self-sufficient to trade-oriented. But the transportation networks linking urban and rural areas are not fully developed, and output of products is not stable due to small-scale production, and thereby shipment of surplus products, sales, and distribution to urban area are limited.

The urban population has been growing rapidly with inflow of people from rural area. Therefore, stable supply of agricultural and fisheries products from rural area to urban area should be secured.

The Government of Solomon Islands has drafted development programmes to cope with those problems. Principal projects are establishment of production system by implementing a project for improvement of local small-scale production, improvement of existing three markets in Honiara according to urban development programme, and development of markets in eastern and western parts of the capital city to meet demands in expanding residential area with the increase of urban population.

Honiara Central Market, brisk as the largest public market in urban area, plays quite important role for both local small-scale producers and urban consumers. However, the facilities are not sufficient and the sanitary situation is not good with poor water supply and sewage.

On weekends, especially on peak times, the market is extremely crowded with shoppers and visitors. They have to do inconvenient and ineffective trading spending a few hours even for a piece of fish or vegetables. Under the circumstances the Government of Solomon Islands drafted a programme for development of Honiara Central Market, which consists of three steps of projects for construction of ①fish landing quay, ②market facilities and ③commercial jetty.

Of the above projects the first one was implemented under the scheme of Japan's grant aid in 1993. At the same time, Japan also conducted a development survey from March 1993 to March 1994 and formulated a masterplan for improvement of national fish marketing system. The masterplan includes a pre-feasibility survey focused on the Honiara economic zone as a model.



The project was formulated in response to the request by the Government of Solomon Islands for the second grant aid to improve market facilities, such as market hall building in Honiara Central Market, following the first grant aid for improvement of fish landing quay.

#### **1-2 Outline of the Requested Project**

The request is mainly aimed at improvement of the existing Honiara Central Market in the capital city of Solomon Islands to make it serve as a trading base for agricultural and fisheries products. It is also aimed at strengthening of its functions to improve amenity of the market, promote effective management, and encourage small-scale production in the rural area.

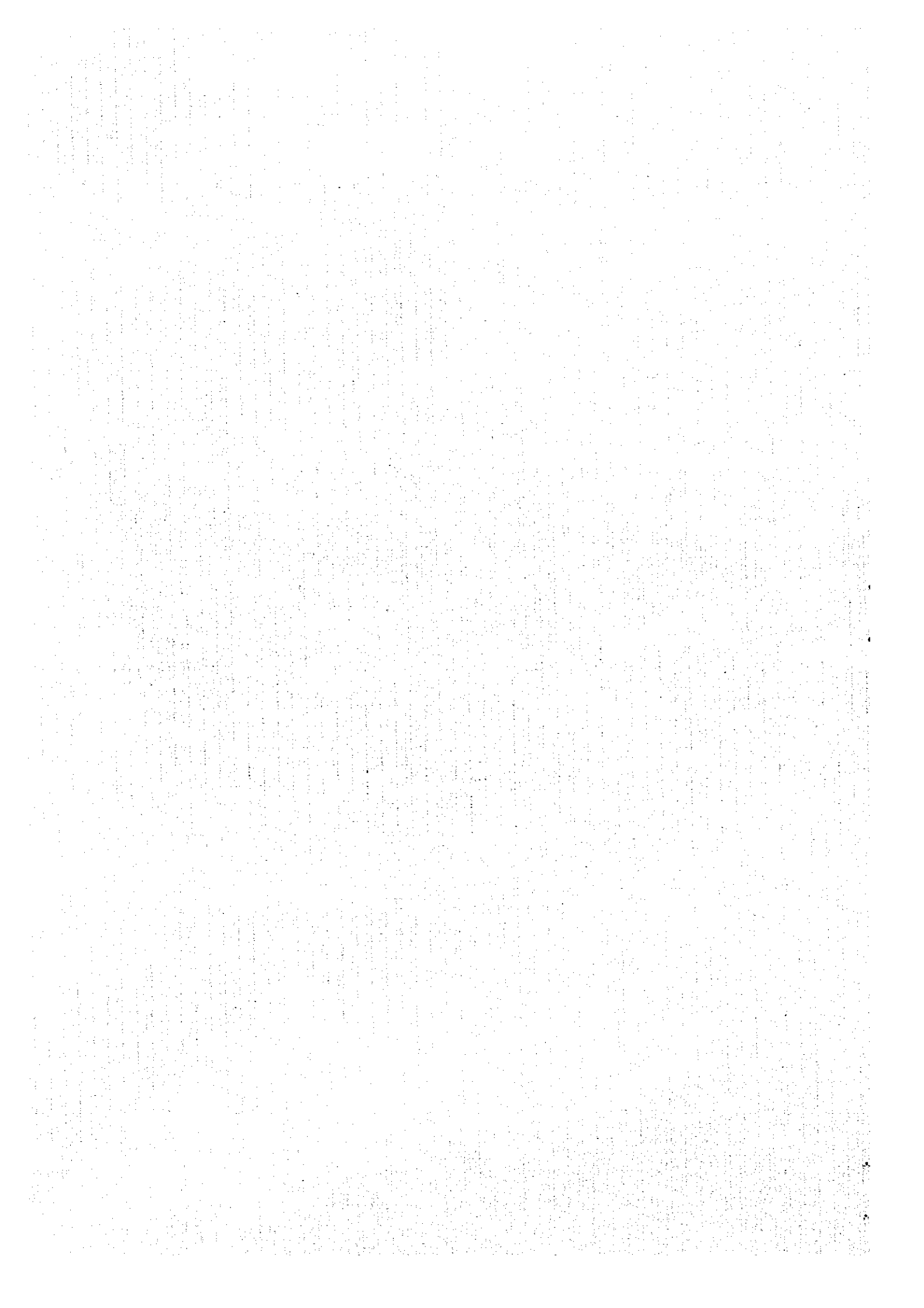
The main components of the facilities and equipment for the requested project are as follows:

Table 1-2-1 Main Components of the Requested Project

Items	Quantity/ Particulars	Content
1. Facilities		
1-1 Market hall	1 set approx.2,200m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Multipurpose open shed for marine products vendors</li> <li>• Multipurpose open shed for farm products vendors</li> <li>• Unloading and sorting area</li> <li>• Boxed commodities stock area</li> </ul>
1-2 Market management building	1 set approx.500m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Market administration/staff room</li> <li>• Meeting room</li> <li>• Storage (for market operation &amp; administration equipment)</li> <li>• Air-conditioned insulated room</li> <li>• Ice-making &amp; storage bin</li> <li>• Fishermen service building</li> </ul>
1-3 Market service building	1 set approx.500m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Canteen</li> <li>• Kiosk</li> <li>• Storage (for commodities)</li> </ul>
1-4 Market service facilities for public	1 set	<ul style="list-style-type: none"> <li>• Paved parking</li> <li>• Service path &amp; road</li> <li>• Pedestrian path</li> <li>• Public lavatory</li> <li>• Garbage disposal area</li> <li>• Utilities (fresh water service)</li> </ul>
1-5 Other facilities	1 set	<ul style="list-style-type: none"> <li>• Rain/waste water discharging</li> <li>• Septic tank &amp; treatment tank</li> <li>• Electricity supply</li> <li>• Water supply</li> <li>• External lighting</li> <li>• Plumbing</li> </ul>
2. Equipment		
2-1 Operational equipment	1 set	<ul style="list-style-type: none"> <li>• Ice-making equipment</li> <li>• Ice-storage equipment</li> <li>• Air-conditioned insulated room</li> <li>• Push cart</li> </ul>
2-2 Management & control equipment	1 set	<ul style="list-style-type: none"> <li>• Office equipment</li> <li>• Quality control equipments, etc.</li> <li>• Pickup truck</li> </ul>

## CHAPTER 2

### CONTENT OF THE PROJECT



## Chapter 2. Contents of the Project

### 2-1 Objectives of the Project

Honiara Central Market, the largest public market in the capital city of Solomon Islands and the site of this Project, shows active signs of marketing and plays an important role for both local small-scale producers widely scattered in the rural areas and urban consumers in the capital city. However, its functional facilities have not yet been developed so sufficiently, and its sanitary situation is not so well due to poor facility of water supply and sewage. Especially on weekends, a lot of shoppers and visitors are obliged to do ineffective and inconvenient shopping, spending a few hours even for a shopping of piece of fish or vegetables.

For the improvement of above situation, this Project aims at giving a place and opportunity of direct participation in the marketing for local small-scale producers, and rendering sanitary market environment to urban consumers in Honiara, through the total rehabilitation of the Honiara Central Market.

Furthermore, this Project will contribute to the development of fish distribution network, fishery related industries, the promotion of fish export, and the improvement of living standards of rural people, etc.

The following effects are expected through the implementation of the Project;

- (1) Improvement of amenity of the whole market and sanitary situation.
- (2) Consumers can obtain agricultural and fisheries products of more stable quality, which will increase the confidence in the rural producers and their products.

(3) By re-arranging the market facilities, smooth flow of traffic of people, vehicles and goods will be achieved, easing the congestion in the Market.

(4) Shipment of agricultural and fisheries products, and marketing will be activated so that producers' drive or volition may be improved and local small-scale production may be promoted as well.

## 2-2 Basic Concept of the Project

### 2-2-1 Contents of the Project and the Results of Discussions

The original contents requested by the Government of Solomon Islands and the results after the discussions in the site survey are summarized as shown on Table 2-2-1.

In holding discussions with the Solomon side for the confirmation of the items of the requested Project, followings were taken into consideration;

- (1) Unification of functionally duplicated items
- (2) Cooperation with the private sectors
- (3) Appropriate management cost
- (4) Securement of vested rights.

As a result, following items were excluded from the original request.

- (1) Fishermen service building
- (2) Ice-making equipment
- (3) Market management and control equipment
- (4) Quality control/laboratory equipment

Table 2-2-1 Contents of Original Request  
and the One after Discussion

(1/3)

Original request	After discussion	Remarks
<p>A. Implementing Agency</p> <ul style="list-style-type: none"> <li>• Fisheries Division, Ministry of Agriculture and Fisheries</li> </ul>	<p>A. Implementing Agency</p> <ul style="list-style-type: none"> <li>• Fisheries Division, Ministry of Agriculture and Fisheries</li> </ul>	
<p>B. Project Site</p> <ul style="list-style-type: none"> <li>• Honiara Central Market</li> </ul>	<p>B. Project Site</p> <ul style="list-style-type: none"> <li>• Honiara Central Market</li> </ul>	
<p>C. Project Management</p> <ul style="list-style-type: none"> <li>• Fisheries Division and Honiara Town Council (HTC)</li> </ul>	<p>C. Project Management</p> <ul style="list-style-type: none"> <li>• Management body: Honiara Town Council (HTC)</li> </ul>	<p>The Project is to be managed by HTC in accordance with the MOU (Memorandum of Understanding).</p>
<p>D. Project Component</p>	<p>D. Project Component</p>	
<p>1. Facility</p>	<p>1. Facility</p>	
<p>1-1 Market Hall</p> <ul style="list-style-type: none"> <li>• Multipurpose open shed for vendors</li> <li>• Selling table &amp; benches</li> <li>• Unloading &amp; Sorting Area</li> <li>• Boxed Commodities Stock Area</li> </ul>	<p>1-1 Market Hall</p> <ul style="list-style-type: none"> <li>• Multipurpose open shed for vendors</li> <li>• Selling table &amp; benches</li> <li>• Unloading &amp; Sorting Area</li> <li>• Crop Storage</li> </ul>	<p>*Objective-wise unification</p>
<p>1-2 Market Management Building</p> <ul style="list-style-type: none"> <li>• Market Administration/ Staff Rooms</li> <li>• Service Rooms &amp; Meeting Rooms</li> <li>• Storage (market operation/administration equipment)</li> <li>• Air-conditioned insulated room</li> <li>• Ice Making</li> </ul>	<p>1-2 Market Management Building</p> <ul style="list-style-type: none"> <li>• Market Administration/ Staff Rooms</li> <li>• Meeting Room</li> <li>• Storage</li> <li>• Air-conditioned insulated room</li> <li>• Ice Storage Bin</li> </ul>	<p>*Storage for office</p> <p>*Cooperation with private ice supplier</p>

Original request	After discussion	Remarks
<ul style="list-style-type: none"> <li>• Fishermen Service Building:</li> <li>-Esky Storage Area</li> <li>-Fishing Equipment Storage</li> <li>-Utilities</li> </ul>	<ul style="list-style-type: none"> <li>-Esky Storage Area</li> <li>-Office Toilet</li> </ul>	<ul style="list-style-type: none"> <li>*Concept of Retail Market</li> <li>*Objective-wise unification</li> </ul>
<p>1-3 Market Service Building</p> <ul style="list-style-type: none"> <li>• Canteen</li> <li>• Kiosks</li> <li>• Storage (commodities)</li> </ul>	<p>1-3 Market Service Building</p> <ul style="list-style-type: none"> <li>• Canteen</li> <li>• Kiosks</li> </ul>	<ul style="list-style-type: none"> <li>*Fillet display panel (partly)</li> <li>*Storage in each kiosk</li> </ul>
<p>1-4 Market Service Facilities for Public</p> <ul style="list-style-type: none"> <li>• Paved parking</li> <li>• Service Path &amp; Road</li> <li>• Pedestrian Path</li> <li>• Public Toilets</li> <li>• Rubbish Disposal Areas</li> </ul>	<p>1-4 Market Service Facilities for Public</p> <ul style="list-style-type: none"> <li>• Paved parking</li> <li>• Service Path &amp; Road</li> <li>• Pedestrian Path</li> <li>• Public Toilets</li> <li>• Rubbish Disposal Areas</li> </ul>	<ul style="list-style-type: none"> <li>*Sunshade arcade</li> <li>*Trailers to be provided.</li> </ul>
<p>1-5 Mechanical &amp; Electrical Facilities</p> <ul style="list-style-type: none"> <li>• Waste Water Discharging Facilities/ Rain &amp; Waste Water</li> <li>• Septic Tank and Treatment Tank</li> <li>• Electricity and Water Supply</li> <li>• External lighting</li> <li>• Utilities (Fresh Water Service)</li> </ul>	<p>1-5 Mechanical &amp; Electrical Facilities</p> <ul style="list-style-type: none"> <li>• Waste Water Discharging Facilities/ Rain &amp; Waste Water</li> <li>• Septic Tank and Treatment Tank</li> <li>• Electricity and Water Supply</li> <li>• External lighting</li> <li>• Utilities (Fresh Water Service)</li> </ul>	<ul style="list-style-type: none"> <li>*Toilet, Fish esky area</li> </ul>



Original request	After discussion	Remarks
2. Equipment	2. Equipment	
2-1 Operational Equipment <ul style="list-style-type: none"> <li>• Ice Making Equipment</li> <li>• Ice Storage Equipment</li> <li>• Air-conditioned Insulted Room</li> <li>• Push Cart</li> </ul>	2-1 Operational Equipment <ul style="list-style-type: none"> <li>• Ice Storage Equipment</li> <li>• Air-conditioned Insulted Room</li> <li>• Push Cart</li> </ul>	<ul style="list-style-type: none"> <li>*Supply of ice by private sector</li> <li>*Provision of ice storage bin</li> </ul>
2-2 Management & Control Equipment <ul style="list-style-type: none"> <li>• Market Management &amp; Operation Equipment</li> <li>• Quality Control/ Laboratory Equipment</li> <li>• Pickup Truck</li> </ul>	<ul style="list-style-type: none"> <li>• Pickup Truck with trailers</li> </ul>	<ul style="list-style-type: none"> <li>*Deleted.</li> <li>*Deteted (Health Dep't covers).</li> <li>*Rubbish disposal, extension activities, etc.</li> </ul>
2-3 Optional Equipment (for future fish market operations) <ul style="list-style-type: none"> <li>• Walk-in freezer</li> <li>• Chiller -5°C</li> <li>• Fish Display Panel</li> </ul>	<ul style="list-style-type: none"> <li>• Fish Display Panel</li> </ul>	<ul style="list-style-type: none"> <li>*Deleted.</li> <li>*Deteted.</li> <li>*For sales of fillet, fish/meat (part of kiosks)</li> </ul>

## 2-2-2 Basic Design Policy

### (1) Appropriateness and necessity of the Project

Honiara Central Market is utilized by almost all the residents in the area everyday for shopping of fresh foods such as fish and vegetables. Its contribution to the economy in the metropolitan area is highly valued as it serves as a base for marketing products and provides opportunity of cash earning for local small-scale producers. The Solomon Islands has dual economic structure of subsistent economy in rural area and monetary economy in urban area. The promotion of local products of agricultural and fisheries to meet the demand of foods for increasing metropolitan consumers and establishment of a system for stable supply, will be quite important to promote local small-scale primary industries in future.

In order to promote the small-scale productive industries, establishment of production system for core industries such as agriculture and fisheries, and development of distributive channels between producers and consumers for the shipment and marketing of the products, are indispensable.

The Project should be implemented as scheduled considering the importance of the Project for the activation of the local economy which consists of few industries, and encouragement of local industries. The Project is concluded quite appropriate for a Japan's Grant Aid Scheme from the following points of view:

- ① The beneficiaries will be both urban and rural residents reaching about 93 thousand, a quarter of the total population.
- ② As the Market is utilized by almost all the residents of Honiara city

for everyday shopping of fresh fish and vegetables, development in both sanitary and environmental fields is urgently required.

③ The revenue from the Project is estimated at SI\$441,918 and the expenses at SI\$321,475, which shows the feasibility of self-management.

④ The Project is applicable to the objectives of national development enabling correction of economic gap between urban and rural areas and encouragement of local industry's development.

(2) Basic design concept

1) Basic design policy

In view of expected effects of the Project, it should be best to provide a facility for local small scale agricultural and fisheries producers to make direct access, and for urban consumers to enjoy sanitary environment, by promoting function of the current Honiara Central Market which centers on retails.

2) Basic policy of cooperation

The Project is concluded appropriate for a Japan's Grant Aid scheme judging from the necessity, higher priority and capacity of recipient and highly expected beneficiary for the public. Therefore, the Project and the basic design shall be planned in accordance with Japan's Grant Aid scheme. The Project shall aim at realization of a desirable market which meets the needs of residents and shall be designed based on the results of the discussions at Site Survey, considering integrations of similar functions, introduction of private sector, efficiency of management and securement of vested rights.

## 2-3 Basic Design

### 2-3-1 Design Concept

Basic design of the Project is composed of four(4) items, namely, management plan, layout plan, facility plan and implementation plan, with the following concept.

#### (1) Management plan

In the management plan of this Project, experiences, achievements and existing organization of Honiara Town Council (Management body of the Project) will be utilized effectively and the introduction of private sectors will be more effective. As for service activities like collection of rental fee or leasing contract of facilities, the existing management system will be followed in principle. Part of the revenue will be allocated for the extension services for local small-scale fisheries and agricultural producers and urban consumers in order to render comfortable market environment and several kinds of services.

#### (2) Layout plan

As the Project site is situated at the center of Honiara City and the expansion of the site cannot be expected, the layout plan shall be carefully designed for the convenience of both marine and inland transportations. Specifically, flow paths of people, vehicles and goods shall be reviewed and made clearly purpose-wise in order to utilize the site areas more efficiently and an open space shall be arranged so that the flexibility for multipurpose use may be improved.

### (3) Facility plan

In accordance with the basic concept of the Project, the Honiara Central Market shall be planned to serve as a market mainly for retailers in a consumption area. In addition to the Market Hall and Market Management Building, which are the main facilities, service facilities such as Kiosks and parking lot will be built as the market will serve for the public and have close relations to local people.

Pedestrian Path will be paved with concrete which will make maintenance easier, and finished with materials of slide prevention to make the Path more comfortable. Service and access road and parking areas will also be paved with concrete for easier maintenance. Materials will be selected in accordance with the purposes.

### (4) Implementation plan

The drafting of the Implementation Plan requires full-scale assistance and cooperation of the Solomon Islands Government. The preparatory works such as site preparation including removal of existing facilities, securing of substitute land for the market during the construction, and works for rendering consecutive market services will be allotted among people concerned clarifying who is in charge of specific items.

In principle, all the implementation plans must be made on one fiscal year basis.

## 2-3-2 Design Conditions

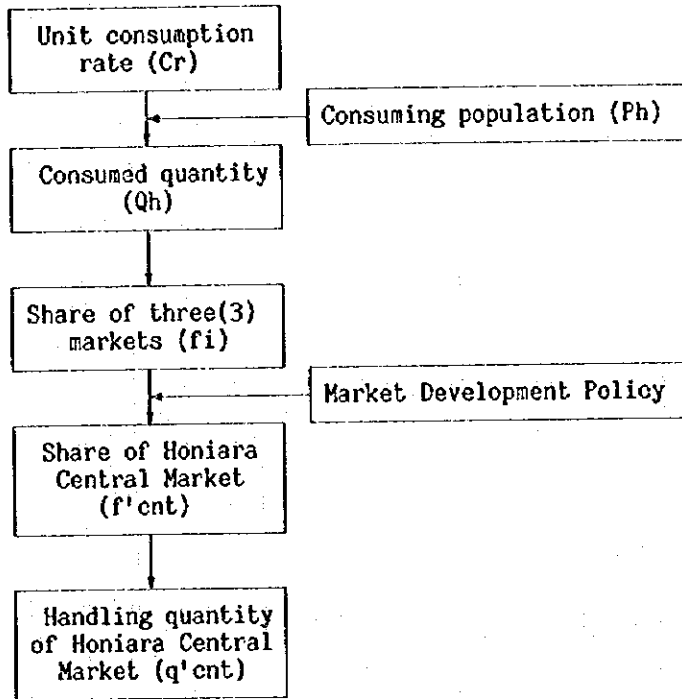
### (1) Examination of design condition

Design conditions of market facilities of this Project will be examined based on the present situation at the site (handling quantity of fish, vegetable and number of retailers, shoppers, etc.), population increase of the capital city, Honiara, and the forecast of facility utilization rate in the target year of 2000.

Design conditions shall also be examined based on Solomon Government's policy such as developing plans for Honiara (In addition to the existing three markets, two more markets are planned to be constructed) and plans for expansion of residential areas in the suburbs.

Basic flow chart of design conditions are as follows;

\* Demand flow:  $Q_h = Cr \times Ph$ ,  $q_{cnt} = Q_h \times f_{cnt}$



\* Supply flow:  $Q_h' = Mr \times Pp$ ,  $q'_{cnt} = Q_h' \times f'_{cnt}$

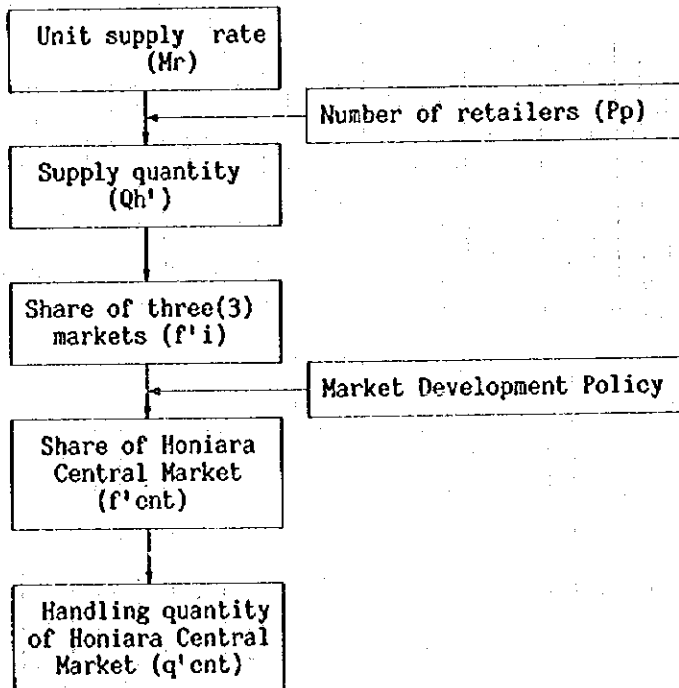


Fig. 2-3-1 Forecast Flow of Demand and Supply

Since the implementation of this Project is expected to improve utilization efficiency of the Honiara Central Market, sufficient discussions on the market development shall be held with the Solomon side in order to decide the scale of facilities.

The scale of the project shall not be too large in order to avoid excessive congestion in future and the formation of networks with the other markets shall be performed in line with the actual circumstances after the target year of 2000.

- ① Efficient use of survey data obtained at the development study survey in October, 1993.
- ② Confirmation of relations and consistency between the site survey data of Basic Design study and the above.
- ③ Examination of present situation of utilization and future trend of three(3) existing markets in Honiara for designing of the project facility.
- ④ Estimation of the figures of retailers at Honiara Central Market changed through the above ①, ②, ③ steps.

1) Handling Quantity of Fisheries Products and the Number of Retailers  
Handling quantity of fisheries products and the number of retailers were estimated based on the results of marketing survey.

The volume of distribution of fisheries products at Honiara City can be calculated based on average unit weight/day • person and the number of retailers, through above-stated basic flow charts of demand and supply,  
① supply quantity (QH) and consumption quantity (QH'), ② share of each market (fi, fi'), ③ volume of FRP-made eskies to be used in the marketing. Fisheries products can be classified roughly into fresh fish



and frozen bonito. As every retailer uses esky, the number of retailers is equivalent to that of eskies.

Honiara Central Market is operating six(6) days a week, namely, 52 weeks and 312 days a year.

① Volume of Fisheries products in Honiara

Volume of fresh fish, frozen fish, and canned fish can be calculated on the demand/consumption ratio of 2 : 4 : 4, respectively, based on the figures of population of 39,000 in 1993 (Development survey year), 46,690 in 1995 and 54,075 in 2000.

Table 2-3-1 Inflow into Honiara and the Changes of Population

Population and inflow		Estimation in 1993		Estimation in 1995		Forecast in 2000	
		Data	Unit Consumption	Data	Unit Consumption	Data	Unit Consumption
(*) Population		39,600		46,690		54,075	
In-flow (ton)	Total	1,897	47.91	2,223	47.62	2,575	47.62
	Fresh fish	369	9.32	435	9.32	504	9.32
	Frozen fish	765	19.32	901	19.30	1,044	19.30
	Canned fish	763	19.27	887	19.00	1,027	19.00

(\*) Population is estimated for 1993 (year of the Development Study survey) and for 1995, and forecast for 2000.

Of the above volume of fisheries products in Honiara, handling quantity at the Honiara Central Market, unit weight of esky and filling rate of esky are shown on Table 2-3-2.

Table 2-3-2 Handling Quantity at the Honiara Central Market

Kind	Inflow into Honiara (ton) Qh	Honiara Central Market				
		Handling quantity q cnt	Share f cnt	Bsky n	Fish Q'ty/ Bsky q	Filling rate $\gamma = q/130$
Fresh fish	369	299	0.81	10	95.8	0.74
Frozen fish	765	507	0.66	20	81.3	0.63
Canned fish	763	—	—	—	—	—
Total	1,897	806	0.43	30	86.1	0.66

Note: 1) Data are based on the Development Study in 1993.

2) Maximum weight of fish in an esky is 130 kg.

Other relation is expressed as follows;

$$f\text{cnt} = q\text{cnt}/Q_h, \quad q = (q\text{cnt} \times 1000) / (6 \times 52 \times n)$$

② Current Utilization of the Honiara Central Market

During two weeks of the site survey, the number of eskies was checked every day except on Sundays. In the Development Study in 1993, similar survey was conducted for five weeks. As shown on the following Tables, regular daily fluctuation regarding fisheries products was not identified in both surveys. Supply and demand seem well balanced as supply of frozen bonito is controlled by industrial fishing companies.

Table 2-3-3 Number of Fish Esky at the Honiara Central Market

(a) Number of fresh fish esky

Week	Development Study survey (Sep.27,'93~ Oct.28,'93)						Basic Design survey (Jun.28~Jul.21,'95)			Total
	1 st week	2 nd week	3 rd week	4 th week	5 th week	Sub total	6 th week	7 th week	Sub total	
Mon.	16	7	14	8	15	60	8	6	14	74
Tue.	22	6	10	16	21	75	11	13	24	99
Wed.	23	8	14	12	24	81	19	8	27	108
Thu.	24	5	16	14	32	91	15	6	21	112
Fri.	15	12	31	15	NA	73	18	3	21	94
Sat.	7	8	16	16	NA	47	14	6	20	67
Total	107	46	101	81	92	427	85	42	127	554
Ave.	18	8	17	14	23	15	14	7	11	14

(b) Number of frozen fish esky

Week	Development Study survey (Sep.27,'93~ Oct.28,'93)						Basic Design survey (Jun.28~Jul.21,'95)			Total
	1 st week	2 nd week	3 rd week	4 th week	5 th week	Sub total	6 th week	7 th week	Sub total	
Mon.	50	30	10	30	30	150	6	19	25	175
Tue.	45	29	15	31	33	153	9	19	28	181
Wed.	41	20	12	29	23	125	19	21	40	165
Thu.	39	15	15	31	25	125	21	23	44	169
Fri.	37	17	20	31	NA	105	22	25	47	152
Sat.	32	19	31	33	NA	115	18	19	37	152
Total	244	130	103	185	111	773	95	126	221	994
Ave.	41	22	17	31	28	28	16	21	18	25

(C) Total of average number of fresh fish(F) esky and frozen fish(FR) esky

	Development Study survey (Sep.27,'93~ Oct.28,'93)						Basic Design survey (Jun.28~Jul.21,'95)			Total
	1 st week	2 nd week	3 rd week	4 th week	5 th week	Sub total	6 th week	7 th week	Sub total	
(A)Fresh	18	8	17	14	23	15	14	7	11	14
(B)Frzn.	41	22	17	31	28	28	16	21	18	25
Total	59	30	34	45	51	43	30	28	29	39

③ Handling quantity and number of eskies

at the Honiara Central Market

Above results prove the forecast of handling quantity and number of eskies of fresh fish and frozen fish at the Central Market. Volume of fisheries products in Honiara and handling quantity of the Honiara Central Market have the following relations based on unit consumption and share;

$$Q_h = C_r \times P_h$$

$$Q_{ent} = Q_h \times f_{cnt}$$

Handling quantity of fresh fish and frozen fish at the Honiara Central Market is calculated as follows;

$$q^F = Q_{ent} \times f_{cF} = Q_h \times f_{cnt} \times f_{cF}$$

$$q^{FR} = Q_{ent} \times f_{cFR} = Q_h \times f_{cnt} \times f_{cFR}$$

$$q^F = n^F \times (W/1000) \times \gamma^F \times 6 \times 52$$

$$q^{FR} = n^{FR} \times (W/1000) \times \gamma^{FR} \times 6 \times 52$$

Therefore, number of eskies is obtained as follows;

$$n^F = (Q_h \times f_{cnt} \times f_{cF} \times 1000) / (W \times \gamma^F \times 6 \times 52)$$

$$n^{FR} = (Q_h \times f_{cnt} \times f_{cFR} \times 1000) / (W \times \gamma^{FR} \times 6 \times 52)$$

Notes: above abbreviation means the following:

- Qh : Fish supply for Honiara City per year (ton)  
 Cr : Average fish consumption/person in a year (kg/person · year)  
 Ph : Population of Honiara City  
 Qcnt: Handling quantity at the Central Market (ton)  
 f cnt: Share of the Central Market, f cnt=0.42  
 qF : Handling quantity of fresh fish at the Central Market (ton)  
 qFR : Handling quantity of frozen fish at the Central Market (ton)  
 f cF : Ratio of fresh fish at the Central Market, f cF=0.37  
 f cFR: Ratio of frozen fish at the Central Market, f cFR=0.67  
 W : Maximum weight of fish in an esky, W=130 kg  
 γ : Filling ratio of an esky for max.130 kg, γ =0.5~0.8  
 nF : Number of fresh fish esky  
 nFR : Number of frozen fish esky

Table 2-3-4 Forecast of Fish Handling Quantity and Esky-Number

Abbreviations		a) Develop- ment survey	b) Basic design survey	c) a) + b) 2	Forecast- ① (in 2000)	Forecast- ② (in 2000)
Qh	ton	1,897	2,237	2,067	2,590	2,840
Cr	kg/person	47.9	47.9	47.9	47.9	47.9
Ph	person	39,600	46,690	43,145	54,075	59,306
Qcnt	ton	806	1,007	905	1,295	1,420
f cnt		0.425	0.450	0.438	0.500	0.500
qF	ton	299	373	335	544	596
qFR	ton	507	634	570	751	824
f cF		0.37	0.37	0.37	0.42	0.42
f cFR		0.63	0.63	0.63	0.58	0.58
W	kg	130	130	130	130	130
γ F		0.74	0.74	0.74	0.62	0.62
γ FR		0.63	0.63	0.63	0.75	0.75
① Calcul- ated No. of eskies	Ttl	29.8	37.2	33.4	46.3	50.8
	nF	9.9	12.4	11.1	21.6	23.7
	nFR	19.9	24.8	22.3	24.7	27.1
② Data at the survey	Ttl	43	29	39	47 *	51 *
	nF	15	11	14	22 *	24 *
	nFR	28	18	25	25 *	27 *
Ref: Ratio=②/ ①		1.44	0.78	1.17	1.01	1.00
nF (Fresh fish)		1.51	0.89	1.26	1.02	1.01
nFR (Frozen fish)		1.41	0.73	1.12	1.01	1.00

Note: \* mark shows the forecast-figures.

2) Forecast of handling quantity & Number of Crop Retailers

Present distribution system and supply of agricultural products by small-scale producers will continue to be followed, as systems of cooperative production, cooperative delivery and sales have not been established so far. Therefore, design conditions for facilities were examined, focused on the point that the number of grower-retailer is proportionate to the supply quantity that equals to "quantity of demand excluding the quantity of self production/consumption."

① Market delivery quantity and self-consumption

"Honiara Household income and expenditure survey 1990/1991," published in 1992 shows the following estimation on purchased quantity at the Market and self production/consumption quantity;

Table 2-3-5 Marketed Quantity and Self Production Quantity

Name of items	Estimated consumption quantity at the Market (ton/month)	Purchased quantity (kg)		Self consumption quantity (kg)		Total (kg)	
		Per family	Per person	Per family	Per person	Per family	Per person
1.Coconuts	143.4	30.09	4.51	3.10	0.47	33.20	5.00
2.Green vegetables	54.7	11.49	1.72	1.11	0.17	12.60	1.90
3.Root crops	65.4	13.73	2.06	3.32	0.50	17.00	2.60
4.Starches	39.3	8.25	1.24	13.74	2.06	22.00	3.30
5.Sugar canes	6.2	1.29	0.19	0.62	0.09	1.90	0.30
6.Betel nuts	13.8	2.91	0.44	0.00	0.00	2.91	0.44
Total ( % )	322.9	67.77	10.17 (76)	21.88	3.28 (24)	89.60	13.40 (100)

Notes: Population ; 31,764 in 1990  
Households ; 4,765 in 1990

(Source: Honiara Household Survey 1990/1991)

Judging from above calculation, demand quantity will be 323 ton/month and 3,874 ton/year. Three-fourths of above quantity are purchased at each Market of Honiara, and one-fourth is for the consumption of self production. Demand quantity is estimated at 13.4 kg/person · month.

② Number of retailers forecast by population in Honiara

Most of the agricultural products distributed at the Honiara Central Market are consumed by the Honiara citizens, and few of them are left for processing. The quantity for commercial use such as restaurants, hotels, and etc. is very limited. In the present marketing system of agricultural products, Honiara is the final consumption zone of the capital city economic circle, and the products have never been transported to any other market.

Honiara's population is 30,413 according to the census in 1986, and the next census will be conducted in 1996. The population will be 46,690 in 1995 by the estimation data published by Statistics Division, Ministry of Finance every year. Average increase rate between 1986 and 1995 will be 4.9%. Table 2-3-6 shows an estimated number of retailers based on the average population increase rate per year through collected data in the 1993 Development Study and this Basic Design Study.

Table 2-3-6 Number of Retailers per Day

No. of Retailers per Day (Average)	Estimated figure at Develop't Study survey (in October, 1993)	Data at B/D Study survey (in July, 1995)
1. Weekdays	6,646 / 24 = 227 227x4.9%x21months =301	5,012 / 17 = 295
2. Saturdays (peak time)	1,733 / 4 = 433 433x4.9%x21months =471	1,438 / 3 = 479

As a result, number of crop retailers at the Honiara Central Market per day in 2000 will be as follows:

Weekdays 295 people x 4.9% x 54 months = 366 people  
 Saturdays 479 people x 4.9% x 54 months = 594 people

③ Number of Crop Retailers through Tariff collection data of Facilities  
 Fig. 2-3-2 shows a transition of number of crop retailers calculated by Tariff collection record of facilities at three(3) markets in Honiara from October 1991 to June 1995. As a whole, lineal increase can be observed by the following equation;

$$Y = 73.12 + 0.66 X$$

X : Independent Variable (number of months)

Y : Dependent Variable (number of retailers)

This tells the expected number of crop retailers in early 2000, the target year, at the Central Market.

- Number of months from October, 1991 to January, 2000: X=99 months
- Total number of crop retailers in January, 2000:  $Y=73.12+0.66 X$   
 $\therefore Y=73.12 + 0.66 \times 99 = 138.46$  hundred people
- Retailer ratio for three(3) markets at Honiara City:

{	Central Market	70%
	Kukum Market	15%
	Rove Market	15%

- Retailer ratio for Weekdays/Saturdays at the Honiara Central Market:

{	Weekdays	75%
	Saturdays	25%

Therefore, on Weekdays  $(138.46 \times 100) \times 70\% \times 75\% \div 5 = 339$  people  
 Saturday  $(138.46 \times 100) \times 70\% \times 25\% \div 1 = 565$  people

From the result of above② and ③, the number of retailers at the Central Market in early 2000, the target year, will be estimated as follows:

( on Weekdays	339 ~ 366 retailers
( on Saturdays	565 ~ 594 retailers



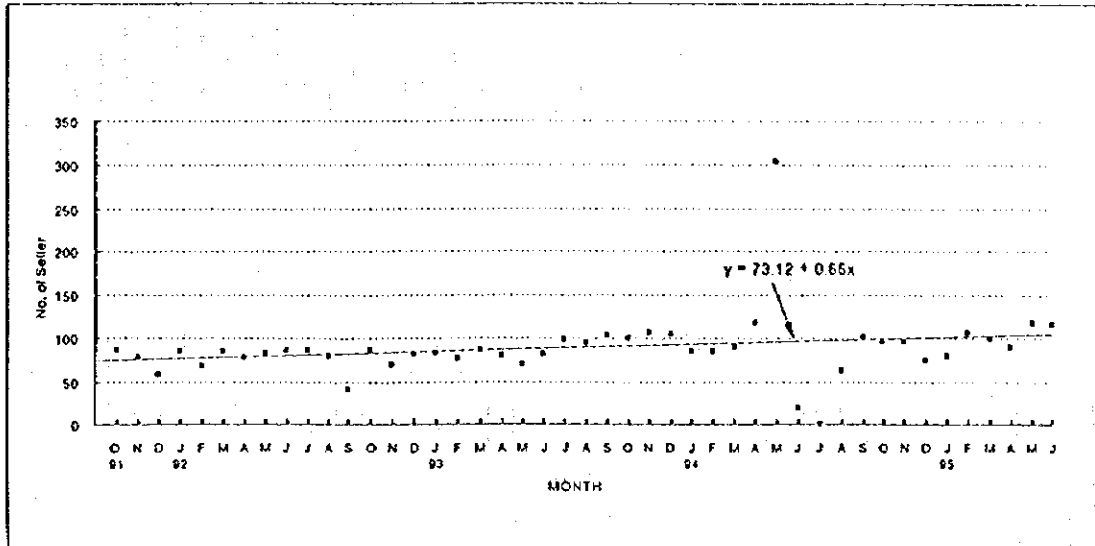


Fig.2-3-2 Transition of Number of Retailers through  
Tariff collection Data of Facilities

④ Handling Quantity & Number of Retailers in Honiara Central Market

Regarding handling quantity of agricultural products and the number of retailers in the Honiara Central Market, the following relation is applicable from consumption/person · month and the Market's share;

$$Q_h = (C_r \times 12 \times P_h) / 1000$$

$$Q_{mkt} = Q_h \times f_{mkt}$$

$$Q_{cnt} = Q_{mkt} \times f_{cnt}$$

then, handling quantity per week at the Honiara Central Market is as follows:  $q_{week} = Q_{cnt} \div 52$

Ratio of weekdays and Saturdays will be as follows ;

$$\gamma_n = n_{we} / n_{wd}$$

$$\gamma_w = w_{we} / w_{wd}$$

$$q_{week} = (q_{wd} + q_{we}) / 1000$$

$$= ((n_{wd} \times w_{wd}) \times 5 + (n_{we} \times w_{we}) \times 1) / 1000$$

$$= (5 + \gamma_n \times \gamma_w) \times n_{wd} \times w_{wd} / 1000$$

Therefore, number of retailers on weekdays can be calculated with the following formula;

$$nwd = (qweek \times 1000) / ((5 + \gamma n \times \gamma w) \times wwd)$$

Notes: Above abbreviations mean the followings;

- Qh : Estimated consumption per year in Honiara (ton/year)
- Cr : Average consumption per person • month at Honiara City  
(kg/person • month)
- Ph : Population of Honiara City
- Qmkt : Handling quantity at the markets of Honiara City (ton/year)
- f mkt : Share of market-distributed (f mkt=0.75)
- f slf : Share of self production (f slf=0.25)
- f cnt : Share of the Central Market (f cnt=0.67)
- Qcnt : Handling quantity per year at the Central Market (ton/year)
- qweek : Handling quantity per week at the Central Market (ton/week)
- $\gamma n$  : Ratio of retailers on Weekdays and Saturdays
- $\gamma w$  : Ratio of average sales quantity per retailer  
on weekdays and on Saturdays
- wwe : Average sales Q'ty per retailer on Saturdays (kg/person)
- wwd : Average sales Q'ty per retailer on Weekdays (kg/person)
- qwd : Sales Q'ty per day on Weekdays at Central Market (ton/week)
- qwe : Sales Q'ty per day on Saturdays at Central Market (ton/week)
- nwe : Number of retailer on Saturdays (persons)
- nwd : Number of retailer of Weekdays (persons)

Table 2-3-7 Forecast of Handling Quantity & Number of Crop Retailers at the Honiara Central Market

Abbreviation	Honiara Household Survey (in 1990)	D/S survey (in 1993)	D/S forecast (in 2000)	B/D survey (in 1995)	B/D forecast (in 2000)
Cr kg/ person • month	13.4	13.4	13.4	13.4	13.4
Ph person	31,764	39,600	54,075	46,690	59,306
Qh ton/year	5,107	6,368	8,695	7,508	9,536
f mkt	0.75	0.75	0.75	0.75	0.75
f slf	0.25	0.25	0.25	0.25	0.25
Qmkt ton/year	3,830	4,776	6,521	5,631	7,152
Qslf ton/year	1,277	1,592	2,174	1,877	2,384
f cnt	0.67	0.67	0.67	0.67	0.67
Qcnt ton/year	2,566	3,200	4,369	3,773	4,792
q week ton/week	49.3	61.5	84.0	72.6	92.2
γ n	1.64	1.64	1.64	1.64	1.64
γ w	1.94	1.94	1.94	1.94	1.94
w wd ton/day	25	35	35	32	32
n wd person	249	214	293	274	348
n we person	408	352	481	449	571

3) Market function and space

Function and space necessary for market activity mainly for retail of agricultural and fisheries products can be summarized as follows;

Table 2-3-8 Necessary Market Functions & Spaces

Functions	Spaces	Facility, equipment, etc.
Sales of fisheries products	<ul style="list-style-type: none"> <li>• Space for carry in and carry out of goods</li> <li>• Sales space</li> <li>• Space of path for customers</li> <li>• Space for washing eskies</li> <li>• Space for fish storage</li> <li>• Storage space of goods</li> </ul>	<ul style="list-style-type: none"> <li>• Access road for carry in and carry out</li> <li>• Goods unloading spot</li> <li>• Push cart • Retail space</li> <li>• Ice storage bin</li> <li>• Passage • Washing space</li> <li>• Esky storage space</li> <li>• Sewage facility</li> <li>• Air-con'ed insulated room</li> </ul>
Sales of agriculture products	<ul style="list-style-type: none"> <li>• Space for carry in and carry out of goods</li> <li>• Sales space</li> <li>• Space of path for customers</li> <li>• Storage space of goods</li> <li>• Washing space of goods</li> <li>• Collecting space of garbage</li> </ul>	<ul style="list-style-type: none"> <li>• Access road for carry in and carry out</li> <li>• Goods unloading spot</li> <li>• Push cart • Sales stand</li> <li>• Chairs • Passage</li> <li>• Goods storage space</li> <li>• Washing space</li> <li>• Collection spot of garbage</li> <li>• Rubbish trailer</li> </ul>
Public services	<ul style="list-style-type: none"> <li>• Access space for visitors</li> <li>• Space for rest</li> <li>• Space for parking</li> <li>• Sanitary space</li> <li>• Kiosk space of foods &amp; drinks</li> </ul>	<ul style="list-style-type: none"> <li>• Entrance and exit for visitors • Paths</li> <li>• Arcade for sunshine</li> <li>• Multi-purpose space</li> <li>• Trees • Public Toilet</li> <li>• Paved parking area</li> <li>• Kiosk • Canteen</li> </ul>
Administration & management of market	<ul style="list-style-type: none"> <li>• Office space</li> <li>• Guests space</li> <li>• Space of maintenance of facilities</li> <li>• Security space</li> <li>• Space for extension service activities</li> <li>• Space for discussion and meeting</li> <li>• Sanitary space</li> </ul>	<ul style="list-style-type: none"> <li>• Office • Storage</li> <li>• Parking for guests</li> <li>• Store for spares, etc.</li> <li>• Generator room (emergency)</li> <li>• Room for security guards</li> <li>• Police box • Toilet</li> <li>• Room for extension services</li> <li>• Meeting room • Pantry</li> </ul>
Carry in and carry out of goods from both sea and land	<ul style="list-style-type: none"> <li>• Space for service and access road</li> </ul>	<ul style="list-style-type: none"> <li>• Access road that can serve for carry in and carry out</li> </ul>

4) Topographic condition

The Honiara Central Market is situated on a gentle slope shown as Fig. 2-3-3. Total location plan for configuration of parking area, visitors' path, kiosk, and Market Hall, shall meet the geographic situation of the land. The parking lot requires banking to adjust the height of front road of the Market.

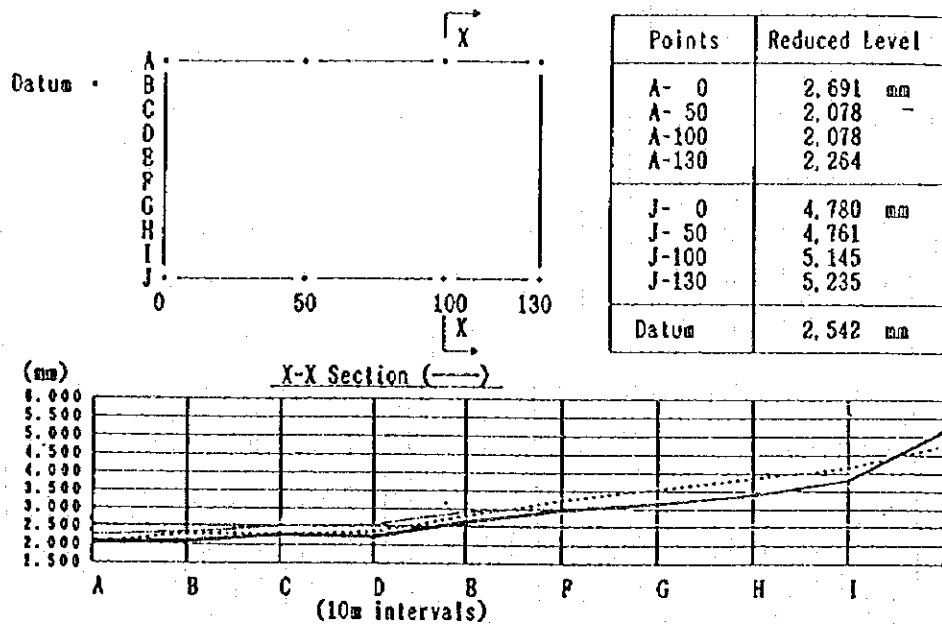


Fig. 2-3-3 Topographic Condition

5) Structural style of building foundation

According to boring survey, the site consists mainly of coral sand and its supporting layer is 12 ~ 18m deep. Then, piling system will be taken for the foundations of the Market Hall and Management buildings.

6) Layout (zoning) of market facilities

Site utilization and layout of market facilities will be designed based on the following concepts in view of the conditions of the existing Honiara Central Market;

① Efficient utilization of the site

Following steps will be taken to minimize the scale of a vehicle path;

- (a) Quay apron will be used as a vehicle path when necessary,
- (b) Access roads to SIPA-Jetty in the Market area will also serve as road for common use, carrying goods in and out to the Market Hall.

② Dissolution of congestion

The congestion of the Honiara Central Market on weekends can be ascribed to absolute shortage of marketing area and concentration of customers before noon and. And the following factors seem to aggravate the congestion according to the results of site survey;

(a) Difficulty of shoppers' approach to the whole shopping area

There are three (3) entrances in the Market, but when it is open, two of the three entrances, which are open into the parking area, are occupied by the retailers. The remaining one entrance is located in front of the bus stop, narrow and away from the parking area.

(b) Overlapping of flow paths of shoppers and vehicles

Access road from the center of parking area to shopping area is also a gateway for transportation vehicles. As opening of shops on the road begins from the nearer spots of shoppers' access and it often prevents vehicles to enter the parking area of the market. As a result, the more shops overflow onto the parking area, the more congestion around visitors' and shoppers' entrances are crowded.

(c) Few carriage of goods inside the market

(no path for carrying, nor cart: need a lot of efforts to move)

Goods are hardly moved from one spot to another in the Market. The place for unloading is also a spot for display and sales. Agricultural products are usually bulky and heavy, and retailers are mostly female. Accordingly, even if there are spaces inside the market area, retailers will invade the parking area to expand their shops.

(d) Disorderly development of shops on the road

(difficulty to keep paths)

Open markets, with shops on the road without any fixed selling table, do not usually have any restriction on location of sales. The roads are usually filled with late-coming retailers with their goods, and every room is fully occupied by their goods or products. It is a kind of vicious circle. In planning the facility layout, above habit of retailers' shall be considered and specific congestion shall be dissolved with the following countermeasures;

① Flow paths of retailers and shoppers must be separated. Entrances from the parking area and from Mendana Avenue must be separated strictly from the unloading area.

② Retailers dislike to carry goods after unloading even for a short distance, and besides, tend to gather in places where more customers crowd. In planning the floor layout, above two tendencies must be taken into consideration for easing congestion. Entrance for goods at the Market Hall must be located at the opposite side of shoppers' entrance, and this may bring the shops' location in order.

③ Total market layout shall be planned to make shoppers scattered properly not only inside but also outside of the Market building. For that purpose, each of the three approaches ( from the parking area, the bus stop and the Mendana Avenue) shall be designed for its exclusive use and the parking area should not be located next to the Market Hall.

(2) Examination of the outline of the Project

The outline of the Project is examined based on the present situation and future forecast (in 2000) of handling quantity of fisheries and agricultural products at the Honiara Central Market, and the number of retailers (the number of eskies for fisheries products, and number of retailers for agricultural products).

The scale of the facilities shall be designed based on the forecast of number of retailers on weekdays to make the most of the capacity throughout the year. As a countermeasure to cope with high time (on Saturdays), the multipurpose open space, such as Pedestrian Path, space around Market Hall, unloading area, etc., shall be used for a temporary retail space.

1) Market hall

The scale of Market Hall will be decided in accordance with the forecast of number of retailers at the target year of 2000 as will be mentioned below. The selling style of fish in this project follows the same esky-based method as present. With regards to numbers of fish retailers, any difference between weekdays and Saturdays is found neither in this Basic Design Study survey nor in the former Development Study survey. Therefore, the upper limit of the forecast from the present situation, shall be used for the basic design to meet the development scheme for the small-scale fisheries and fostering of distribution traders.



① Number of crop retailers

	Forecast	For the project
Weekday	339~366	369 (fixed selling tables)
Saturday	565~594	585 (fixed plus temporary common space-use)
	(+226~+228)	+216 (temporary common space-use )

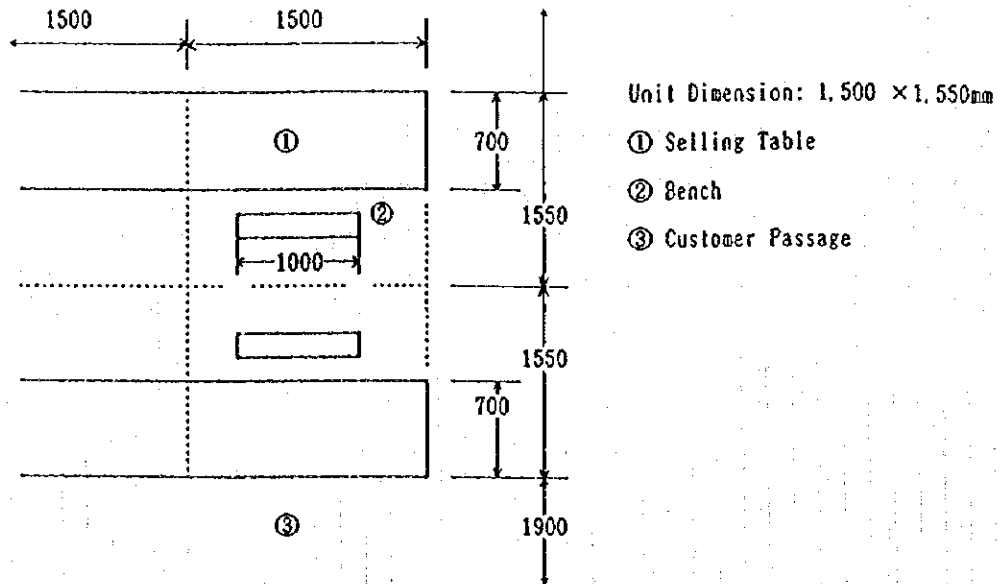


Fig. 2-3-4 Crop Retail Unit

② Number of esky for fish

	Forecast	For the project
Fresh fish	22~24	24
Frozen fish	25~27	27
<b>Total</b>	<b>47 ~51</b>	<b>51</b>

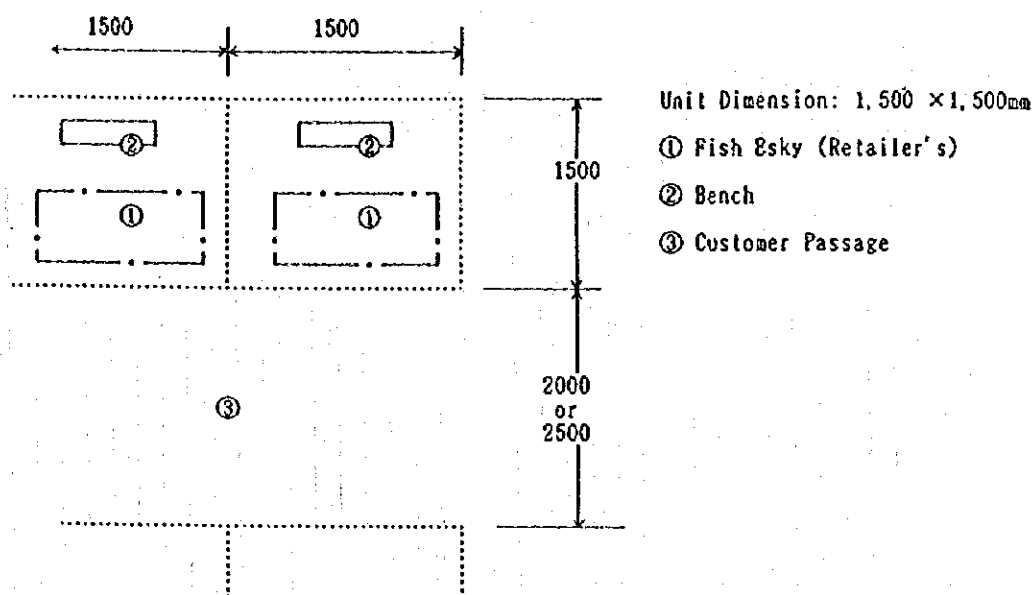


Fig. 2-3-5 Fish Retail Unit

③ Storage of Crop

3 storages (each 2 shelves, 12 m<sup>2</sup>)

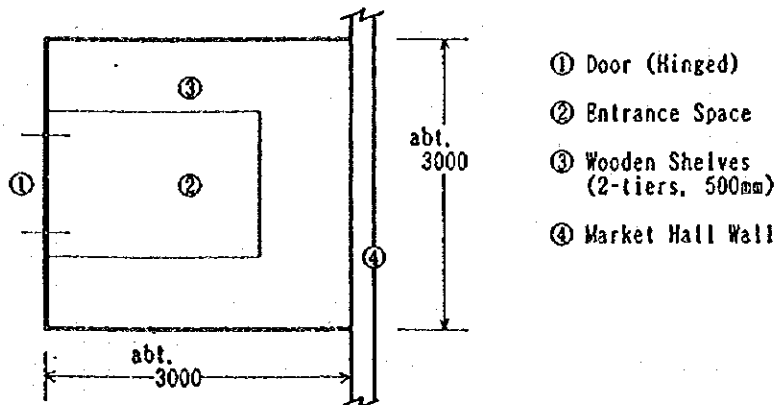


Fig. 2-3-6 Crop Storage Space

Judging from above steps, the Market Hall will be 2,240 m<sup>2</sup> in a total area.

Name	Number	Unit area	Area
Crop			1,920 m <sup>2</sup>
{ Retailer's area	369 people	2.33m <sup>2</sup>	860 m <sup>2</sup>
{ Path	—	—	1,060 m <sup>2</sup>
Fish esky			320 m <sup>2</sup>
{ Retailer's area	51 pes	2.25m <sup>2</sup>	115 m <sup>2</sup>
{ Path	—	—	205 m <sup>2</sup>
<b>Total</b>			<b>2,240 m<sup>2</sup></b>

2) Market management building

Market management building will have offices and a meeting room on the 2nd floor, and an ice storage bin, an air-conditioned insulated room and a storage at the northern part of its ground floor.

① Ice storage bin

Ice storage bin is planned for 4 tons of ice for prospected 24 esky in 2000. The figure is calculated for 2 days' storage with fish/ice ratio of each esky being 1:1.

$$24 \times 130 \times 0.62 \times 2 \text{ days} = 3,869 \text{ kg}$$

As there are two types of ice making, flake ice and block ice, in Honiara, ice storage bin will be divided into two portions.

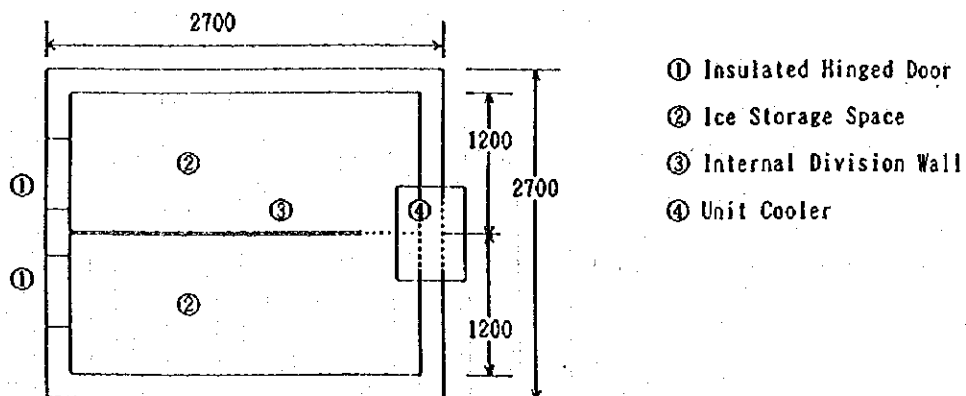


Fig. 2-3-7 Ice Storage Bin

② Air-conditioned insulated room

Air-conditioned insulated room will keep fresh fish for small-scale fishermen. Local fishermen come to the Market with fresh fish without any information on the present Market situation due to poor traffic and communication services. It is very difficult for them to recognize

current situation exactly, since production organization is incomplete and not systematic at present.

Unstable supply of fresh fish is replaced by frozen bonito. Major industrial fishing companies of STL and NFD supply their stock in order to fullfill the demand in Honiara.

Judging from the above situation, the capacity of air conditioned insulated room is planned for storing 24 eskies, which are estimated as necessary quantity for every operation day at the Honiara Central Market. But the freshness and quality is not guaranteed, so the capacity is designed not based on the quantity of fish but the number of storing fishermen's esky.

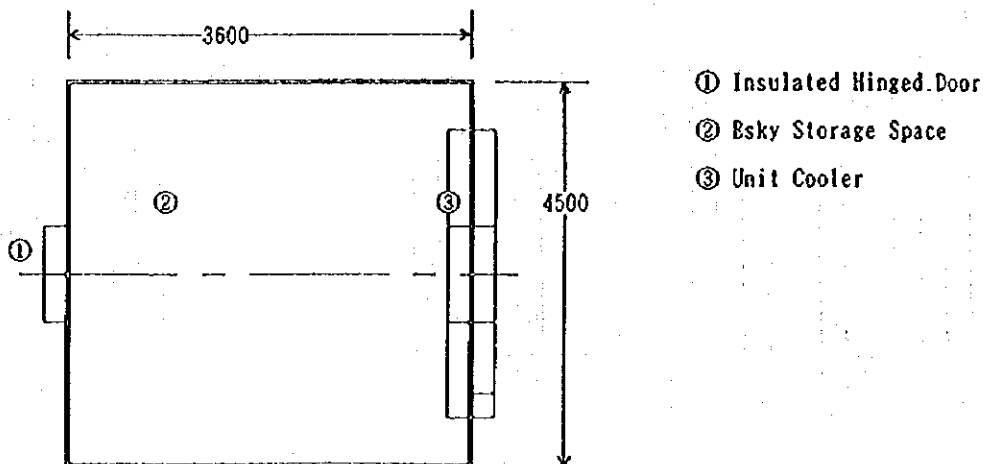


Fig. 2-3-8 Air-conditioned Insulated Room

③ Management office

Management office, etc. are designed based on the number of users and equipment furniture.

(a) Market master room

Number of users: 1 personnel  
Furnitures : 1 desk, 2 lockers, 2 document cabinets  
Others : Simple reception corner about 6 m<sup>2</sup>

---

Necessary area : Total 15 m<sup>2</sup>

(b) Staff room

Number of users: 2 personnel  
Furnitures : 2 desks, 2 lockers, 2 document cabinets  
Others : Meeting space about 6 m<sup>2</sup>

---

Necessary area : Total 20 m<sup>2</sup>

(c) Security guards room

Number of users: 5 personnel with shift  
Furnitures : 2 desks, 5 lockers, 1 document cabinet  
Others : Sofa set for resting

---

Necessary area : Total 15 m<sup>2</sup>

(d) Office

Number of users: 2 personnel  
Furnitures : 2 desks, 2 lockers, 1 document cabinet  
Others : Meeting corner about 6 m<sup>2</sup>

---

Necessary area : Total 15 m<sup>2</sup>

(e) Meeting room

Number of users: Max. 25 personnel for meeting  
Furnitures : About 40 m<sup>2</sup> (=1.6m<sup>2</sup>/person x 25 personnel)

(f) Others

Furthermore, staff toilet, utility, storage, etc. will be prepared as necessary space for the market management office.

The area of Market Management Building will be totally about 400 m<sup>2</sup>.

(1st floor 200m<sup>2</sup>, 2nd floor 200m<sup>2</sup>)

Details of above are as follows:

1st floor (Storages)	Area (mf)
• Ice storage bin	25
• Air-conditioned insulated room	25
• Empty esky storage	25
• Market commodities stock area(cart, etc.)	25
• Storage for administration division	22.5
• Electric panel room	15
• Stairs, corridors, entrance-hall	45
• Toilet	7.5
• Entrance porch	10
<hr/>	
Total	200

2nd floor (Administration and management div.)	Area ( mf)
• Market master room	15
• Market staff room (2 personnel)	20
• Security guards room (5 personnel with shift)	15
• Office (Extension service office)	15
• Meeting room	40
• Storage	8
• Utility	6
• Stairway, corridor	46
• Balcony	10
• Atrium of ground floor storage portion	25
<hr/>	
Total	200

3) Market service building (Kiosk, Canteen)

Kiosk: The size of kiosk is the same as existing 3m x 3m and the number of kiosks are 16 (13 shops, 2 fish + 1 meat fillet-shops)

Canteen (fast food): 1 canteen with 3m x 6m

Only basic items are equipped, such as ceiling fans, sink, counter, outlets for electric appliances, etc. But, show cases for fillet of fish and meat are provided for three(3) shops.

4) Market service facilities for public use

① Paved parking area

Existing parking area has substantial capacity of 60 cars. At peak times, 250~350 cars/hour will come to the Market, and an average of 20 % of them are trucks, 30 % of them are passenger cars, 50 % of them are taxis.

Flow path of vehicles which unload goods is separated from visitors' parking area. Therefore, visitors' parking area will cover 200~280 cars/hour, namely, 80% of above figure. New parking area is planned to have the parking capacity of 96 cars, based on the estimated car increase in the target year and the hourly parking cycle as three(3).

$$350 \text{ cars/hr} \times 0.8 = 280 \text{ cars/hr}$$

$$280 \text{ cars/hr} \div 3 = 94 \text{ cars (3 cycles/hr)}$$

Market office car 1

Visitor's car to office 1

---

Total 96 cars

	Numbers	Unit area	Necessary area
Parking space	96 cars	18m <sup>2</sup>	1,728m <sup>2</sup>
Path for entrance	—	—	1,337m <sup>2</sup>
Total			3,065m <sup>2</sup>



② Service path and market road (path for unloading)

There is a Jetty which belongs to Solomon Islands Port Authority (SIPA) at the west coast of the market area. A service road is planned at the west side of this site to keep this access road as an entry path to the unloading and sorting area of the Market Hall. As there are private shops alongside the west part of the site, the road has to keep 10m of width.

Parking area for trucking is planned at the west side of the Market Hall which faces the road. Necessary spaces will be as follows:

Number of cars per hour : 100 cars  
 Average parking hour of each : 10 minutes  
 Necessary parking number of cars:  $N = 100 \times (10/60) \rightarrow 17$  cars

	Numbers	Unit area	Area
Parking space	17 cars	25m <sup>2</sup>	425m <sup>2</sup>
Other spaces	--	--	--
<b>Total</b>			<b>425m<sup>2</sup></b>

③ Pedestrian Path

The Pedestrian Path is not only an access to the Market, but also a route for emergency. The Path will also serve multipurposely as retail area for small scale producers at peak time. Therefore, Pedestrian Path is equipped with some sunshade roof to cut off strong sunshine for a suitable range.

The area of Pedestrian Path: about 2,000m<sup>2</sup>

	At peak time	Average on weekday
Number of shoppers	1,327 people	664 people
Unit area	1.5 m <sup>2</sup> /person	3.0 m <sup>2</sup> /person

④ Public toilet

Space of public toilet is designed from the viewpoint of the number <sup>(\*)</sup> of retailers at peak time and the number <sup>(\*\*)</sup> of shoppers on weekday in accordance with the standard of 1,000 people in the Architecture Institute of Japan. This is about two times of existing toilet capacity.

Section	Area	Remarks
Men's toilet	26.0m <sup>2</sup>	Urinal 6, Stool 4, Washbasin 3
Women's toilet	32.5m <sup>2</sup>	Stool 8, Washbasin 4
Rest room	10.4m <sup>2</sup>	Washbasin 1, Ceiling fan
Toilet master room	5.2m <sup>2</sup>	Ceiling fan
Others	6.9m <sup>2</sup>	
Total	81.0m <sup>2</sup>	

<sup>(\*)</sup> Number of retailers at peak time  
 $n = (585 + 51) \times 1.5 = 954$  people

<sup>(\*\*)</sup> Number of shoppers on weekday  
 $n = 2,212 \times 0.6 \times 0.5 + (361 + 51) = 1,076$   
 Visitors' number at peak time 2,212 people  
 Shoppers/visitors = 0.6  
 Weekday /Saturday = 0.5

⑤ Rubbish disposal area

The Site Survey tells that the volume of rubbish per day will be about 9 m<sup>3</sup>, namely, 35 drum cans and 2 piles of rubbish.

Unit weight of rubbish will be estimated 200 kg/m<sup>3</sup>, through it varies according to water content.

(a) Rubbish disposal area 80m<sup>2</sup>

Three(3) trailers are arranged for collection.

(b) Size of trailers:

2.0m(L), 1.5m(B), 0.5m+0.5m(H) → 1.5~3.0m<sup>3</sup>(capacity)

⑥ Utilities ( fresh water service )

Necessary quantity of water in the Market is estimated at 48.9kl based on the following a) + b) = 48,930 ℓ .

Position of water faucet shall be arranged by the following factors.

(a) Water for welfare purpose

	No. of People	Hour	Unit quantity	Total water
Staff	13	( 12 )	80 ℓ /person	1,040 ℓ
Retailers	420	( 12 )	40 ℓ /person	16,800 ℓ
Shoppers	18,000	( 10 )	1 ℓ /person	18,000 ℓ
Kiosk	36	( 12 )	80 ℓ /person	2,880 ℓ
<b>Total</b>				<b>38,720 ℓ</b>

(b) Water for market operation

	Q'ty	Frequency	Unit Volume	Volume
Fish market	51	Once/day	100 ℓ	5,100 ℓ
Vegetable market	361	Once/day	10 ℓ	3,610 ℓ
For washing				
Hall	2,200 m <sup>2</sup>	Once/day	0.5 ℓ / m <sup>2</sup>	1,100 ℓ
Path	2,000 m <sup>2</sup>	Once/day	0.2 ℓ / m <sup>2</sup>	400 ℓ
Others	3,300 m <sup>2</sup>	--	--	--
<b>Total</b>				<b>10,210 ℓ</b>

5) Equipment and Materials

Equipment shall be selected based on the results of examination of the scale of the facilities. Capacity of Ice Storage Bin and Air-conditioned Insulated Room is to be designed based on the number of fresh fish eskies, and size and number of Push Cart to be designed based on the number of fish eskies and crop retailers.

① Equipments for Ice Storage Bin and Air-conditioned Insulated Room

In view of scale design of facility plan, specification for Ice Storage Bin and Air-conditioned Insulated Room shall be fixed on the following manners;

The thickness of insulation will be 75~100 mm for energy-saving for tropical climate.

(a) Ice storage bin

- Ice storage capacity: total 4 ton (=2 ton x 2 space)
- Temperature : -5°C

(b) Air-conditioned Insulated Room

- Storage capacity : about 30 m<sup>3</sup>
- Temperature : 0°C~-5°C

② Push Cart

Quantity and specification of Push Cart shall be decided based on the number of retail sections of fish and crop, respectively.

(a) Quantity ..... 16 carts

For fish esky..... 5 carts

- { 1 each for each retail row ..... total 3 carts
- { 2 carts for ice storage bin and insulation room .... total 2 carts

For crop ..... 11 carts

(1 each for each crop row ..... total 11 carts)

(b) Specification

Capacity of fish esky is 270 ℓ and its total weight is about 250 kg including its own weight. Vegetables are composed 40 ~50kg/bag of sweet potato and taros, 45~50 kg/bag of beetle nuts, and 50~60 kg/bag of slippery cabbage, so that one farmer often brings about 200 ~300 kg. The average weight of agriculture products which each retailer brings in is estimated at 30 ~40kg. There are also retailers of fruits, peanuts and other not-heavy items. As Push Carts are used in

the market without doors which is open to four directions and its location in the shore, they must support the load of about 500 kg because movable portions like wheels will be damaged faster than normal operative condition.

③ Pickup truck and trailers

Pickup truck is used for close cooperation and communication between ministries concerned, maintenance of market environment like rubbish disposal, and improvement of service activity of the market. As they are used also for activation of small scale producers in rural areas and for improvement of nutrition for urban people, it must be four-wheel driven with high gradability. Towing hook will be provided at the rear of chassis for towing the trailers. Specifications of Pickup truck and trailers are as follows ;

(a) Pickup truck

Type : 4-wheel driven  
Applicable load : 1.0 ~ 1.5 ton  
Number : 1 car

(b) Trailers

Type : Table-type 4-wheels  
Applicable volume: 1.5 ~ 3.0m<sup>3</sup>  
Number : 3 cars

### 2-3-3 Basic Design

Basic plan of this Project can be summarized as follows;

Table 2-3-9 Summary of Basic Design

(1/2)

Name	Description	Q'ty	Remarks
<b>1. Facility</b>			
1-1 Market Hall	Steel-framed construct'n one-storied 2,240 m <sup>2</sup>	1 build- ing	Reinforced concrete piles (L=12m) 2.33m <sup>2</sup> /section 2.25m <sup>2</sup> /section 4.00m <sup>2</sup> /section
<ul style="list-style-type: none"> <li>• Multipurpose open shed for vendors</li> <li>• Unloading and sorting area</li> <li>• Crop storage</li> </ul>	Crop 369 sections Fish 51 sections		
	3 sections 12m <sup>2</sup>		
1-2 Market Management Building	Reinforced concrete two-storied 400m <sup>2</sup>	1 build- ing	Reinforced concrete piles (L=18m)
<ul style="list-style-type: none"> <li>• Market administration/ staff room</li> <li>• Storage</li> <li>• Meeting room</li> <li>• Office toilet</li> <li>• Storage for maintenance material</li> <li>• Air-conditioned insulated room</li> <li>• Ice storage bin</li> <li>• Storage for empty eskies, etc.</li> </ul>			
1-3 Market Service Building		1 lot	
<ul style="list-style-type: none"> <li>• Canteen (fast food)</li> <li>• Kiosks</li> </ul>	1 shop 16 shops (3-fillet shops included)		18m <sup>2</sup> /shop 9m <sup>2</sup> /shop
1-4 Market Service Facility for Public		1 lot	
<ul style="list-style-type: none"> <li>• Paved parking</li> <li>• Service path &amp; road</li> <li>• Pedestrian path</li> <li>• Public toilet</li> </ul>	Concrete pavement 3,065 m <sup>2</sup> Concrete pavement 1,300 m <sup>2</sup> Concrete pavement 2,000 m <sup>2</sup> Reinforced concrete, one-storied 81 m <sup>2</sup>		96 cars  Finished with colored coating Flat footing (Without piles)

(2/2)

Name	Description	Q'ty	Remarks
<ul style="list-style-type: none"> <li>• Rubbish collection spot</li> <li>• Water faucet</li> </ul>			
1-5 Mechanical and Electrical Facilities <ul style="list-style-type: none"> <li>• Waste water treatment tank</li> <li>• Septic tank and treatment tank</li> <li>• Electricity supply</li> <li>• Water supply</li> <li>• External lighting</li> <li>• Plumbing</li> </ul>	Capacity about 10 tons Capacity for about 200 peoples Emergency generator 25KVA	1 lot	For fish sales spaces, etc. For public toilet, etc.
2. Equipment			
2-1 Operational Equipment <ul style="list-style-type: none"> <li>• Ice storage equipment</li> <li>• Ref.equipment for air conditioned insulated room</li> <li>• Push carts</li> <li>• Pickup truck</li> <li>• Trailers</li> <li>• Display panel</li> </ul>	4 ton, 2.2 kw 25m <sup>3</sup> , 5.5 ~7.5 kw 500 kg, 4-wheeled 4 WD, single-cabin Table type, 4-wheel Flat type with ref.unit	1 set 1 set 16 sets 1 set 3 sets 3 sets	With trail-hook For fillet shops

(1) Site Layout Plan

The site is rectangular in shape with 130m long in east-west and 90m wide in north-south. Its north side faces the landing wharf which was newly constructed for small fishing canoe-vessels, and on its south side there is Mendana Avenue. At its north-west corner, there is a concrete jetty (\*) of 40m long for middle class cargo ships. The site is convenient for both sea and land accesses, and an access road between jetty and Mendana Avenue should be kept, because there is no access route other than the market site.

Note: (\*) This jetty belongs to Solomon Islands Port Authority (SIPA).

Basic concept of site usage shall be focused on the following two points;

- ① Effective utilization of the restricted site area, and
- ② Dissolution of congestion at the marketing space.

An access road to the jetty from the Mendana Avenue is commonly used as an approach entrance and exit of the cargo trucks. Then the market hall building will be arranged along this common access road. On the center of the site a multipurpose open and free space will be placed. In front of the space the service building of kiosks, canteen and the market management building, etc. will be placed. The public toilet building will be arranged at the seaside near the fishing boat slipway and next to the market management building.

A parking lot for visitors cars other than trucks will be placed at the east side, designed to avoid crossing of flow paths of people and vehicles as much as possible.



## (2) Architectural Plan

### 1) Plot plan and section plan

#### ① Market hall building

The total marketing area will be 2,200 m<sup>2</sup> including about 420 selling spaces (about 1.5 m x 1.5m) and customers' passages.

The building size will be 70m long in north-south, and 32m wide in east-west. Height difference between the north and south ends is about 1.9 m in ground level. The site is on a slope falling from the Mendana Avenue to the seaside fish landing apron. Then, the market floor will be divided into three(3) levels in accordance with the ground level. Sloped passages will be arranged in the market hall as well as stairways between the different level floors, etc. for the smooth moving of the customers with shopping bags and push carts loaded with crop-bag or fish esky.

Fish selling area is to be placed at the seaside, considering easier access and handling of fish esky from the fishing boats alongside the landing apron. Crop retailers unloading and sorting space is to be placed at the west side of the market hall building, so that fish and crop can be handled separately.

The customers or shoppers entrance is to be widely arranged at the east side of the market hall building from the pedestrian path on the center of the site. Thus approach and access routes for customers or shoppers and that for goods shall be separated to get smooth flow of people.

The rise of temperature in the market hall will be minimized by natural ventilation. For that purpose, the building shall be open without any

surrounding walls. The height of eaves will be 4 m and over, and openable windows are to be provided in the center of roof top for effective natural ventilation and natural lighting to keep brightness in the center of market hall.

② Market Management Building

Market management building will be two-storied. At the ground floor, service facilities for fish marketing such as ice storage bin, air-conditioned insulated room, and storage space of spare/maintenance materials are to be arranged. At the second floor, market administration / staff rooms and meeting room, etc. will be arranged. Ceiling height of the staff office, etc. will be 2.6m.

③ Kiosks, Canteen, etc.

Kiosks are to be arranged along the pedestrians' path which extends from Mendana Avenue. Canteen (fast food shop) is to be arranged along the multipurpose open space at seaside leading people smoothly into the market. An information counter is to be provided at the center of the multipurpose open space to promote the functions of information center on the marketing.

④ Public Toilet

Public Toilet is to be placed at the seaside corner next to the multipurpose open space for people's convenience and natural ventilation. In front of the women's toilet, there will be a rest room of 10 m<sup>2</sup>. A toilet master's room is to be arranged at the entrance of men's toilet in order to keep it clean and comfortable. The roof top of public toilet building will be held high to introduce sea and land breeze which will be a good natural ventilation.

⑤ Others (sunshade arcade, etc.)

A sunshade arcade will be arranged alongside and/or in parallel to the kiosks in the pedestrian path from the Mendana Avenue to improve visitors' convenience. Parasol-type sunshades with 6 m square are arranged at five spots in the seaside multipurpose open space. The structure of these sunshades shall be friendly to the natural ventilation. Emergency generator shed is to be constructed in the east corner of the site considering the running noise at use.

2) Structure plan

① Outline of structure

<u>Building</u>	<u>Super-structure</u>	<u>Sub-structure</u>
Market Hall Building (1-storied)	• Steel structure	• Concrete slab for floor • Re-inforced concrete foundation • RC-piling
Market Management Building (2-storied)	• Wooden structure with roof truss • Reinforced concrete for column, beam & slab	• Concrete slab for floor • Reinforced concrete foundation • RC-piling
Kiosk, Canteen	• Wooden structure with roof truss • Reinforced concrete	• Concrete slab for floor • Reinforced concrete footing
Toilet Building	• Wooden structure with roof truss • Reinforced concrete	• Concrete slab for floor • Reinforced concrete footing
Others (Sunshade and arcade)	• Steel structure including column	• Reinforced individual footing

② Standard for structure design

In Solomon Islands, Australian and New Zealand Standards are used for the structure design of buildings, etc. in general. This is because a lot of construction materials have been imported from above two countries as historic and geographic practices.

As for the buildings of this Project, main structural members of steel

frames will be supplied from Japan. As the design conditions of wind force and earthquake force can be set in consideration of local data, Japanese Standard is fully applicable in view of safety, durability and economical maintenance cost of the buildings. Therefore, structural design of the buildings in this Project will be made in accordance with the Japanese Standard.

③ Design load

(a) Fixed load

Weights of structural materials, finishing materials and equipment will be calculated respectively. Unit weight of each major construction material will be as follows;

- Concrete : 2.30 ton/m<sup>3</sup>
- Re-inforced concrete: 2.40 ton/m<sup>3</sup>
- Mortar : 2.00 ton/m<sup>3</sup>
- Steel frame : 7.85 ton/m<sup>3</sup>
- Concrete block : 300 kg/m<sup>3</sup> (19 cm x 19 cm x 39 cm)

(Including filling concrete, joint mortar and steel bars, etc.)

(b) Live load

(Unit:Kg/m<sup>2</sup>)

Portion	For slab and small beam	For column, large beam and foundation	For earthquake force
Roof	30	10	0
Office, etc.	300	180	80

Designed live load to the roof shall be of "No walking", "No suspension" except for the occasion of construction and inspection.

(c) Wind load

When a cyclone attacks Honiara City, expected maximum wind velocity at its center is about 30 m/sec at 980 hPa, and 36m/sec at 970 hPa.

In this Project, wind load of 50 m/sec (for 100 years expectation) is adopted in accordance with Japanese Standards.

$$V_s = 50 \text{ m/sec}$$

$$\rho = 0.125 \text{ kg} \cdot \text{sec}^2 / \text{m}^4$$

$$q = 1/2 \times 0.125 \times 0^2 = 156.3 \text{ kg/m}^2$$

Design velocity pressure will be 160 kg/ m<sup>2</sup> with uniform distribution in height and direction.

(d) Seismic load

As Solomon Islands belongs to the volcanic belt around the Pacific Ocean, every building shall be designed for full quake resisting.

Base shearing of Co=0.2 shall be considered as in Japan.

④ Main materials and allowable stress

Material	Standard	Long term allowable stress (kg/cm <sup>2</sup> )			Short term allowable stress (kg/cm <sup>2</sup> )		
		Comp- ression	Ten- sion	Shear- ing	Comp- ression	Ten- sion	Shear- ing
Concrete	Fc=180 kg/cm <sup>2</sup>	60	-	6	120	-	9
Rein- forcing	SD30 (JIS)	2,000	2,000	2,000	3,000	3,000	3,000
Structural steel	SS41 (JIS)	1,600	1,600	900	2,400	2,400	1,350

Salt damage on steel bars is anticipated due to usage of local product for aggregates of concrete. The aggregates shall be washed by fresh water and shall be satisfied with the allowable salt content

(equivalent to JASS5.11 class). Concrete structure members shall be carefully designed as well as mixing of concrete. As the natural conditions against the steel structures are very severe, surfaces of steel frames shall be fully treated and galvanized to prevent rusting and quick deterioration of the structural members which are exposed to the weather.

### 3) Facility Plan

#### ① Water supply facility

City water shall be supplied to the market. 50 mm branch piping is to be installed from the existing 150 mm  $\phi$  city water main line along the Mendana Avenue. Rainwater tanks are to be provided. Rain water shall be collected from the roofs of Market Hall and market management buildings, and used for cleaning of the Market.

#### ② Sewage facility

Public sewer system is not available. Then sewage facility shall be planned as follows.

(a) It shall be designed so that rainfall can permeate as much as possible in the site. U-type ditches and water pits shall be installed and connected to the existing pits (2 pits near the fish landing apron) discharging into the sea.

(b) Toilet sewage shall be collected into the septic tank at first and then sent to a soak pits for penetration into the ground and/or collected by a vacuum car.

(c) Waste water at fish zone shall be guided and collected into the treatment tank, and to be discharged into the sea.

③ Electric facility

(a) Transformer

There is a power-line of 415V/240V, 50 Hz at the Mendana Avenue. Electricity shall be supplied from the power line through the main distribution panel installed at the ground floor of the market management building, then distributed to each section of the market facilities.

(b) Emergency generator

One set of 25 KVA generator shall be installed mainly for the purpose of continuous operation of ice storage bin and air-conditioned insulated room as a countermeasure against expectable blackout.

(c) Lights and outlet-plugs

Lighting shall be planned in accordance with the policy that natural lighting be used as much as possible. Electric lamps are of fluorescent type and mercury vapour lamp type in view of durability and efficiency. Outlet-plugs shall be arranged as suitable for electric appliances and equipment used in the market.

(d) Telephones

Telephones are to be provided at the administration offices.

Market Master's room	}	Total 4 places
Staff room		
Offices		

(e) Loudspeaker set

Loudspeaker set shall be provided for the public announcement of market opening and closing time, market event programmes, etc. Amplifier unit will be installed at a staff room in the market management building.

#### 4) External arrangement plan

Exterior design of the market such as pavement is very important as well as major market facilities of market hall building in view of the functions.

##### ① Pavement plan

Parking area and service road shall be paved with concrete because asphalt is not available in Honiara. Pedestrian path shall be paved with concrete and finished with colored non-slip coating. Rubbish collection spot is to be finished with mortar-cement and provided with an appropriate slope for easy floor washing and cleaning-up.

##### ② Sewage plan in the Market

The site has a slope of 1/40 downed to the seaside from the Mendana Avenue. There are two sewage pits at the both ends of fish landing apron to discharge into the sea. The sewage network shall have two routes, east and west in the market site, and each terminal shall be connected with existing pits. Sewage ditches and pits are to be suitably arranged as necessary to prevent flooding due to the squalls, rainfalls, and so on.

#### 5) Construction material plan

Procurement of the construction materials shall be planned in full consideration of both imports from abroad and local-products, and in accordance with the following conditions.

- ① Construction site is facing seaside and salt damage is anticipated.
- ② High temperature by tropical sunshine and high humidity over 70% all the year round.
- ③ Sanitary materials shall be selected which are easy to clean and not



easily get dirty because the market handles perishable foods such as fish and vegetables.

Major finishing materials shall be as the followings;

① Exterior finishing

- (a) Roof: Weather proof metallic material integrated with insulation
- (b) Wall: Paint finish on mortar with concrete block

② Interior finishing

(a) Floor:

Market Hall ; Polyurethane paint finish on concrete  
(Selling table top to be the same finish)  
Office rooms ; Vinyl tile covering  
Public toilet; Epoxy paint finish on concrete

(b) Wall :

Office rooms ; Plaster board with paint finishing

(c) Ceiling :

Office rooms ; Plaster board with paint finishing  
(Roof truss portion of the market hall, public toilet and sunshade arcade is to be finished with painting)

(d) Door, sash, etc.:

Outer doors shall be of painted bonded-steel of anti-corrosion, and inner doors are to be of painted wooden ones. Sash shall be of aluminium alloy, and lattice net shall be provided to the windows on the ground floor. Market Hall is to be provided with a set of openable ventilation & sunlight-windows on the roof-center. The windows are to have a set of remote-operators at the floor level.

#### (4) Materials plan

##### ① Ice Storage Bin and the Refrigerating Unit

Quantity : 1 set  
Volume : 4 ton (2 ton x 2 )  
Temperature : -5°C  
Size : 2,700(L) x 2,700(B) x 2,200(H) mm outside  
Insulated panel: Prefabricated coloured steel panel with insulation material, total thickness 75 ~100 mm

Refrigerating unit: Closed cylinder-type compressor 2.2 kw  
Condenser and cooler  
(combined type or separated type)

Control panel : Operation and alarm signal lamps, etc.

Electric supply: Power; 415V, 50 Hz, 3  $\phi$ , 4w  
Light; 240V, 50 Hz, 1  $\phi$ , 2w

##### ② Air-conditioned Insulated Room

Quantity : 1 set  
Volume : about 25m<sup>3</sup>  
Temperature : 0°C~-5°C  
Size : 4,500(L) x 3,600(B) x 2,200(H) mm outside  
Heatproof panel: Coloured steel plate with insulation material of 75~100 mm thickness

Refrigerating unit: Closed cylinder-type compressor 5.5 ~7.5 kw  
Condenser and cooler  
(combined type or separated type)

Control panel : Operation and alarm signal lamps, etc.

Electric supply: Power; 415V, 50 Hz, 3  $\phi$ , 4w  
Light; 240V, 50 Hz, 1  $\phi$ , 2w

##### ③ Push Cart

(For handling of fish, ice and vegetables within the market hall)

Quantity : 16 pcs (5 pcs for fish, 11 pcs for vegetables)

Type : Handle-fixed type  
Size : about 1,200 mm x 600 mm  
Live load : about 500 kg  
Wheels : Water-proof and anti-corrosion caster of 200 mm  $\phi$   
Materials : Aluminium alloy or stainless steel

④ Pickup truck

Quantity : 1 set  
Type : 4-wheel drive, single cabin for 3 persons  
Engine : Diesel, displacement 2,500 cc  
Live load : about 1.5 ton  
Attachment : Hook for trailer towing

⑤ Trailer

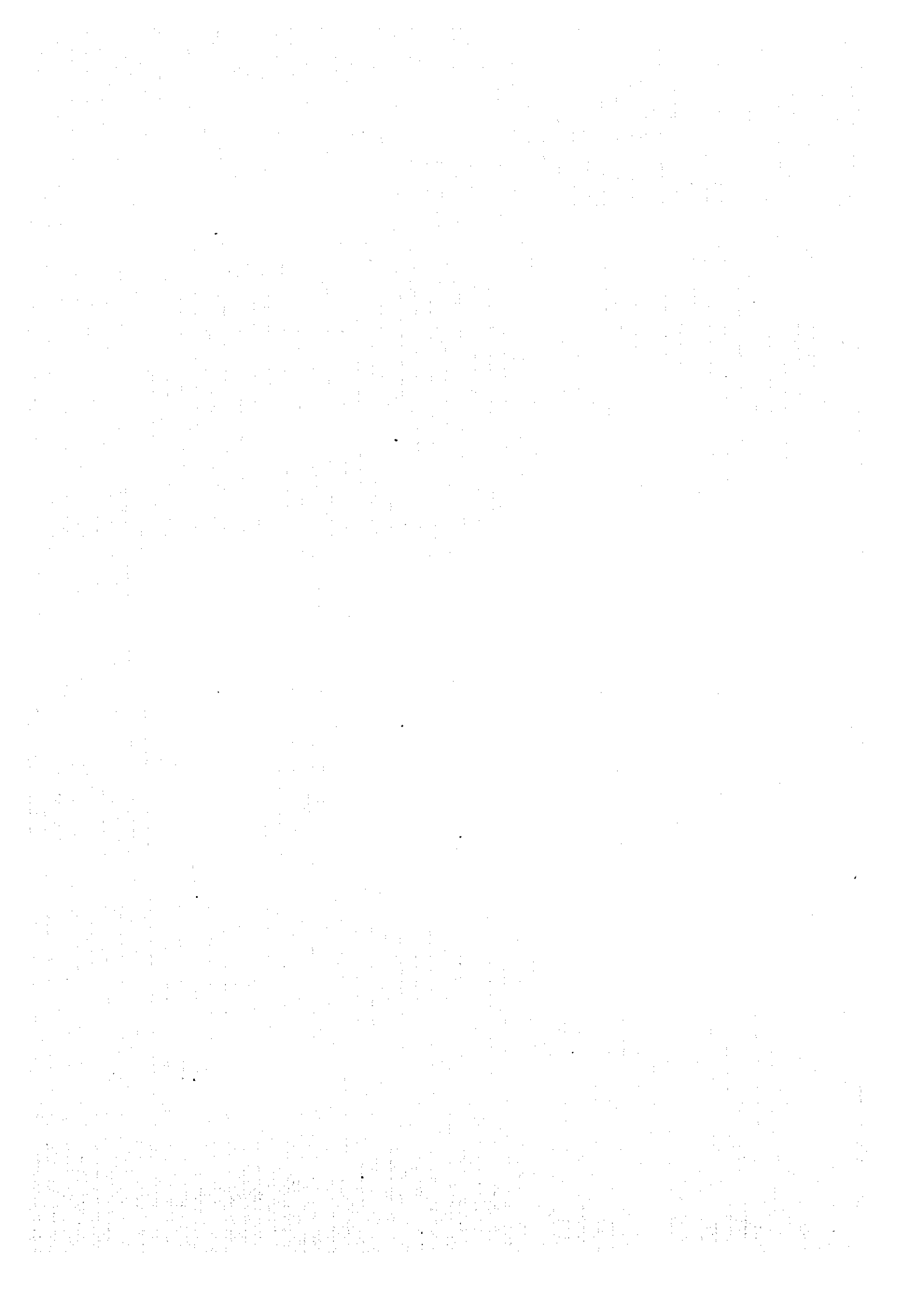
Quantity : 3 sets  
Type : Table type, 4-wheel  
Box size : 2,000(L) x 1,500(B) x (500+500)(H) mm  
H; { Lower 500 mm (fixed)  
Upper 500 mm (hinged)  
Volume : 1.5~3.0m<sup>3</sup>  
Attachment : Connection fittings for being towed.

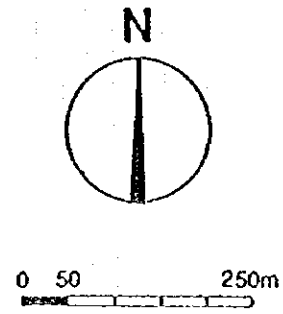
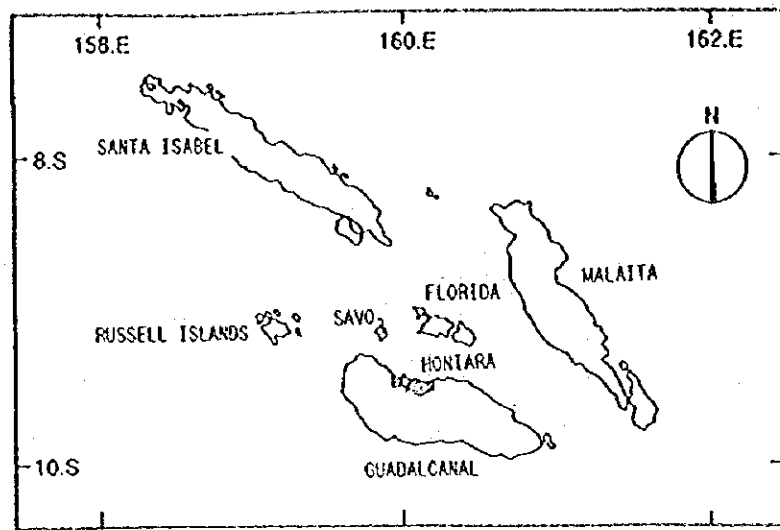
⑥ Display panel

Quantity : 3 sets  
Type : Flat type with refrigeration unit  
Size : 1,800(L) x 900(B) x (800~850)(H) mm  
Internal volume: about 300  $\ell$   
Electric motor : 350~600W  
Power source : 240V, 50 Hz  
Attachment : 240V/100V transformer

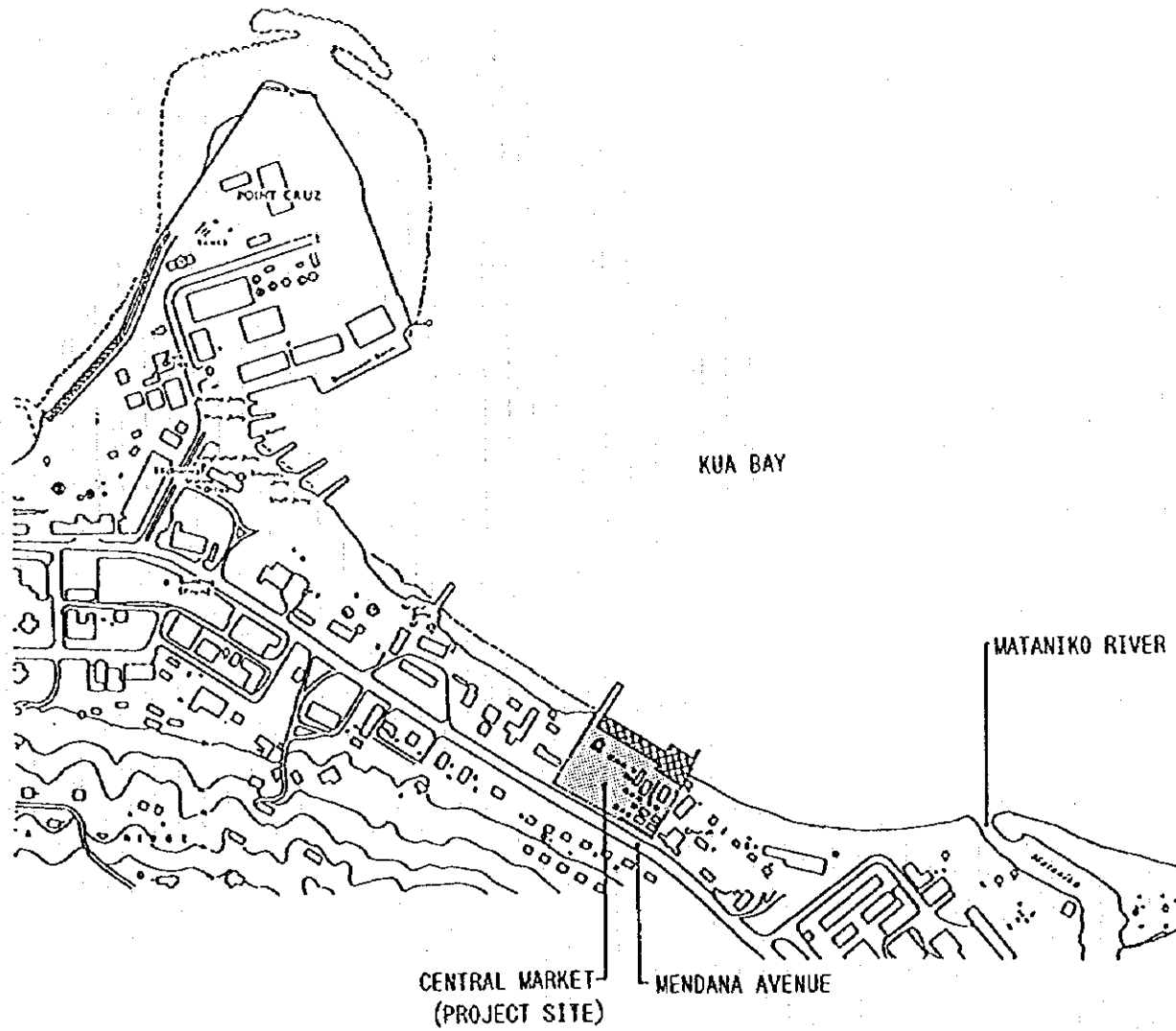
#### 2-3-4 Basic Design Plans

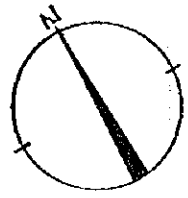
- 1) Location Map, Floor Area
- 2) Plot Plan
- 3) Roof Plan
- 4) Market Hall Bldg. (Floor Plan)
- 5) Market Hall Bldg. (Elevation, Section)
- 6) Management & Service Bldg. (Floor Plan, Elevation, Section)
- 7) Kiosk Bldg. (Floor Plan, Section)
- 8) Kiosk Bldg. (Elevation)
- 9) Public Toilet (Floor Plan, Section)  
Generator Shed (Floor Plan, Elevation, Section)  
Sunshade (Section)



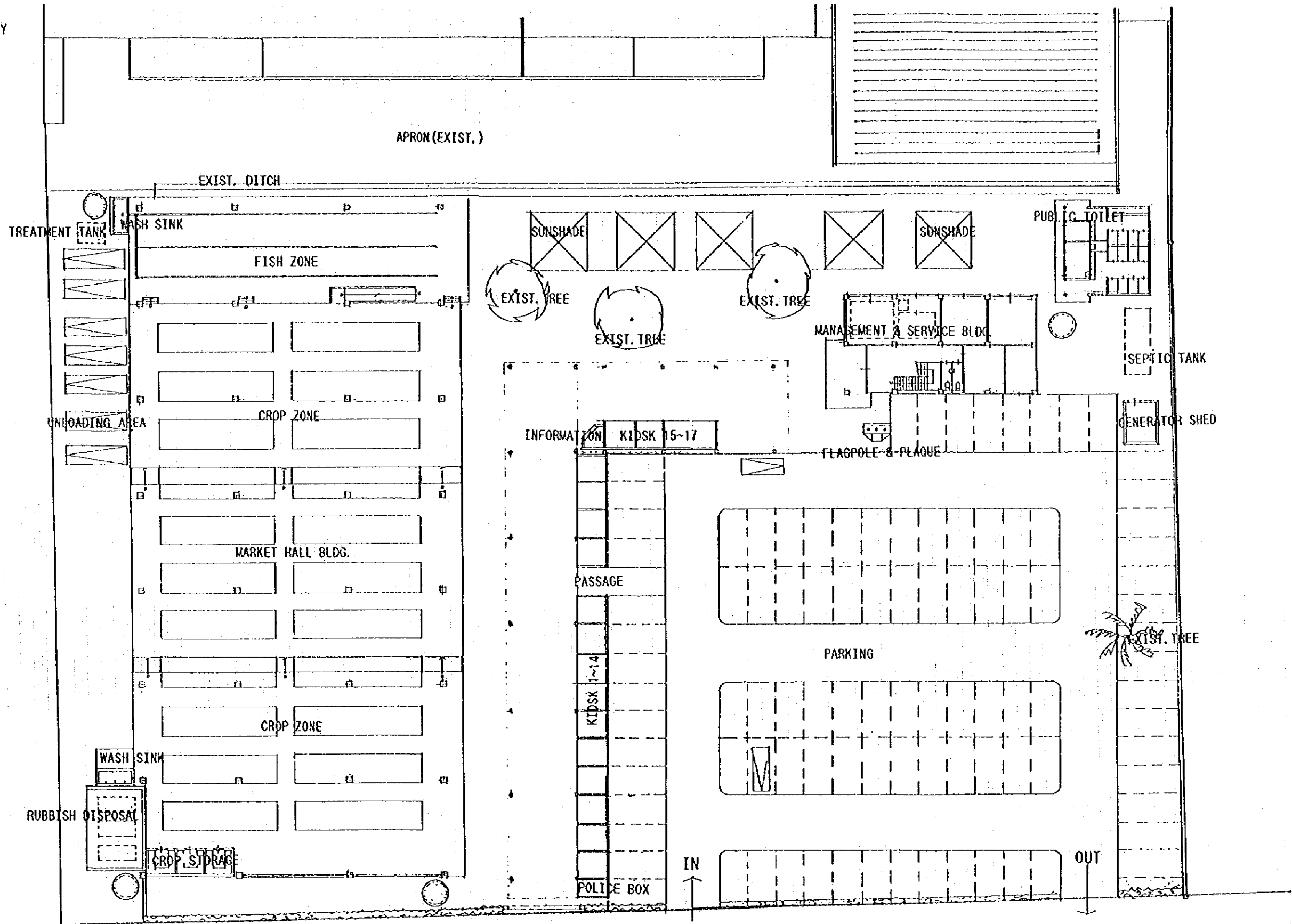


BUILDING	FLOOR AREA (M <sup>2</sup> )
MARKET HALL	2, 240
MANAGEMENT & SERVICE	400
KIOSK(INCLUDE ARCADE)	779
PUBLIC TOILET	81

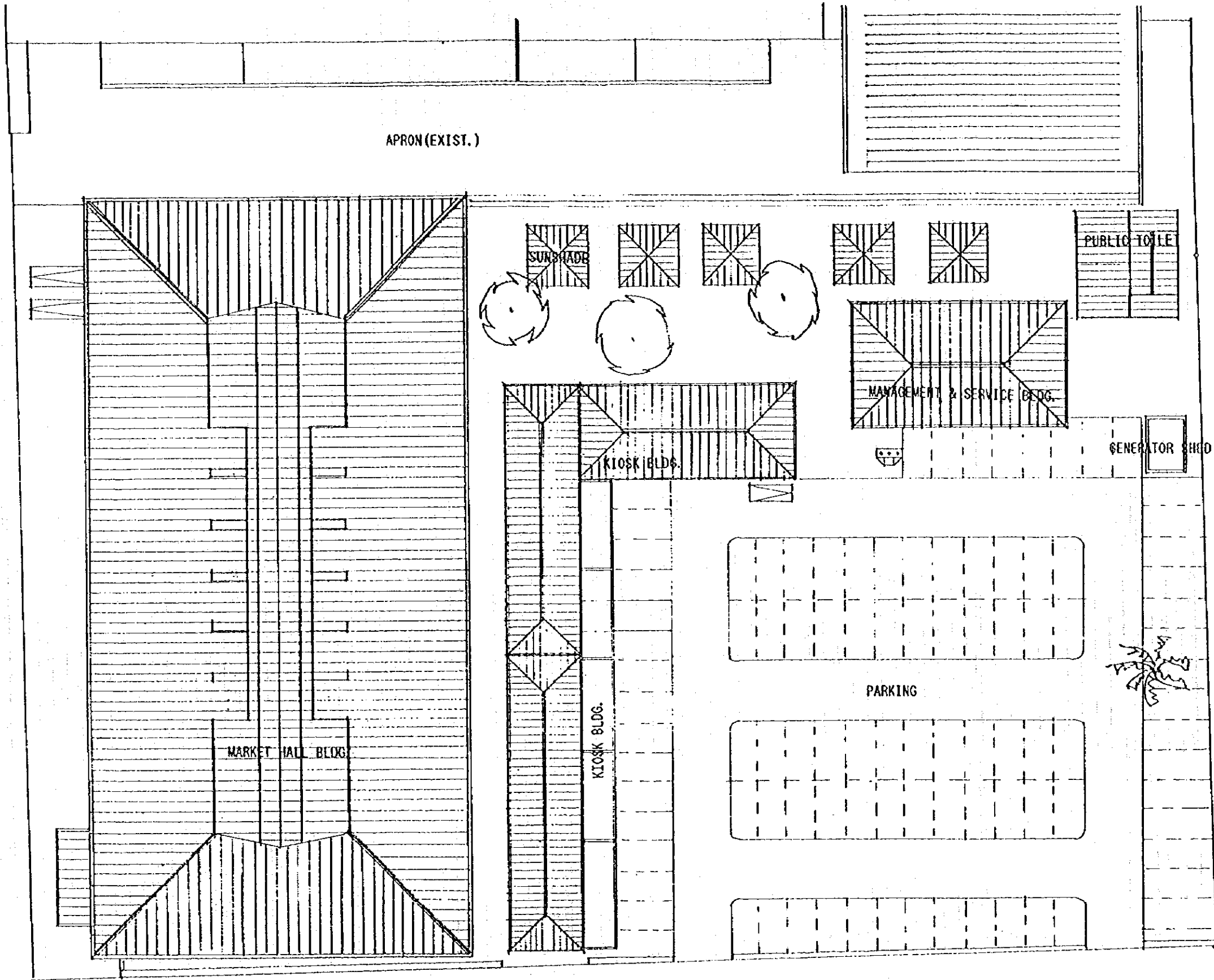
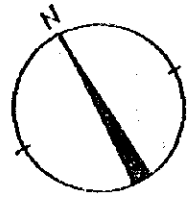




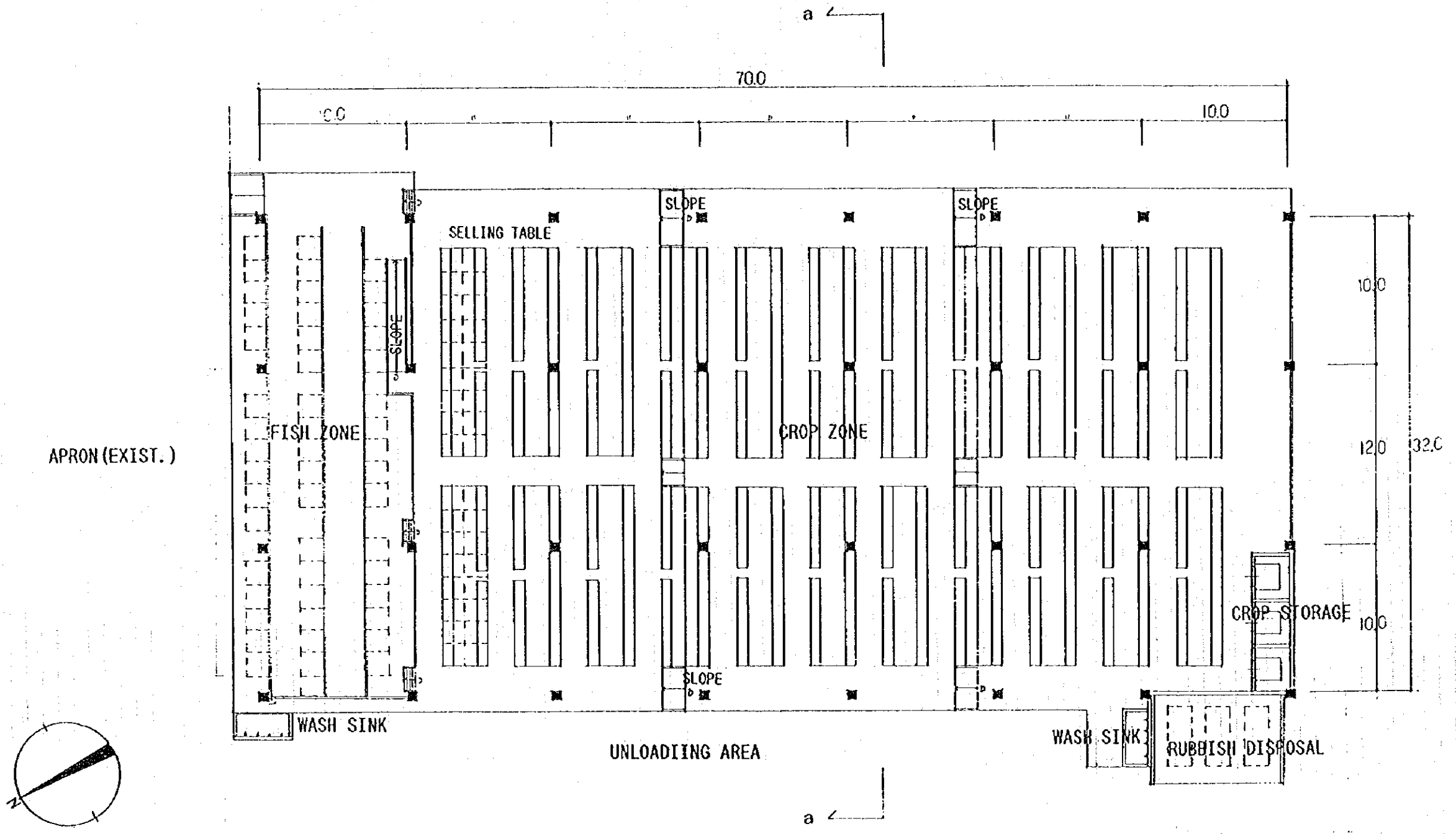
JETTY



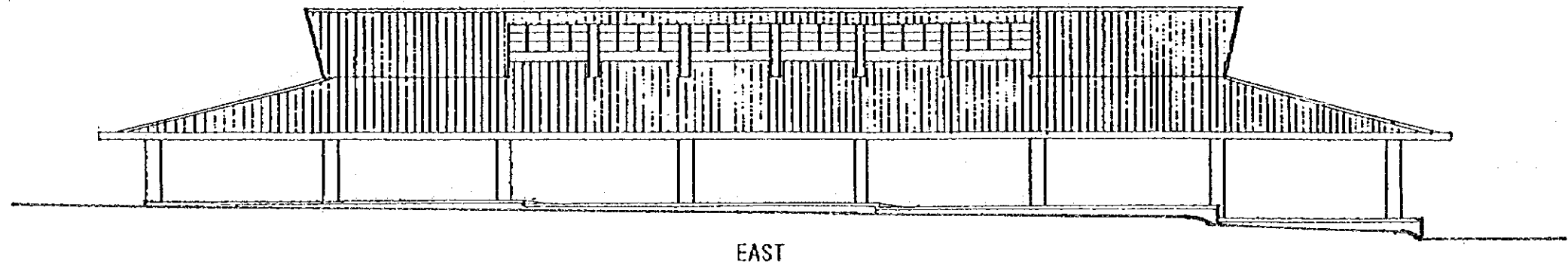
MENDANA AVE.





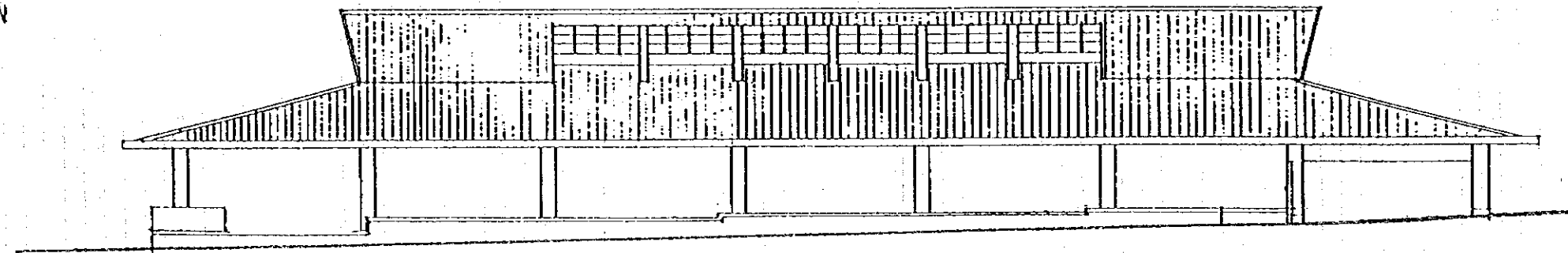


FLOOR PLAN

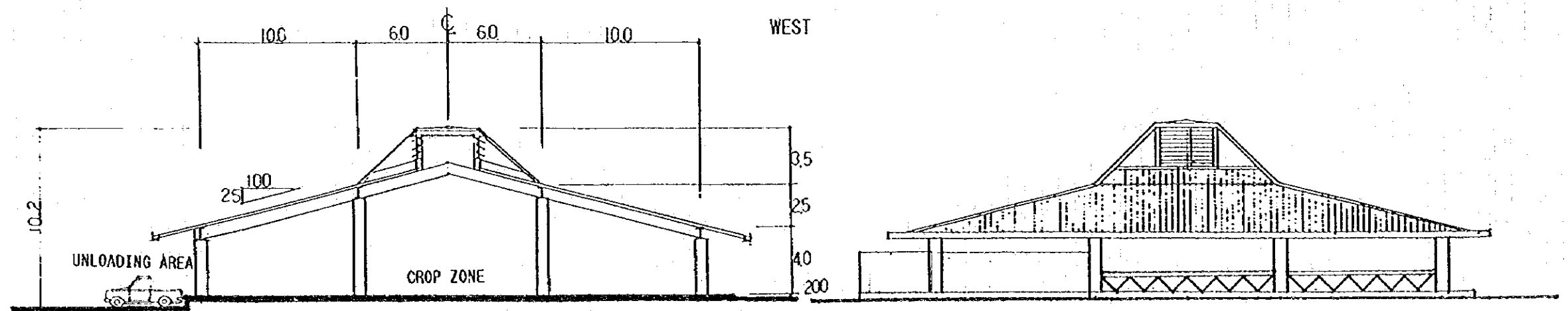


EAST

ELEVATION

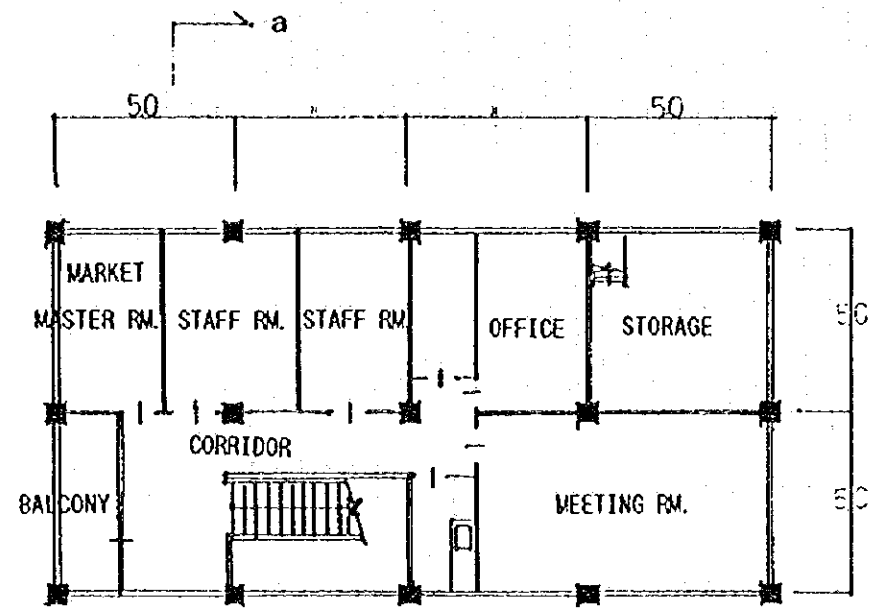


WEST

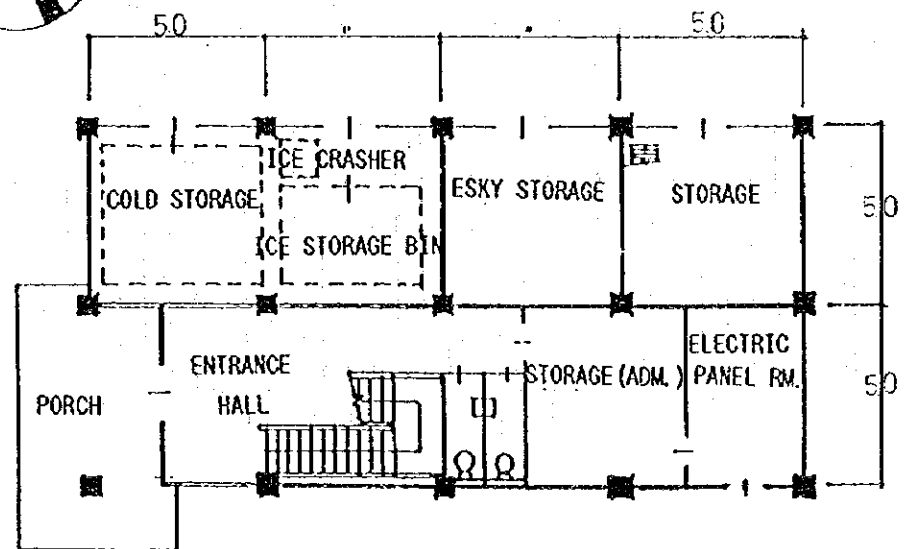
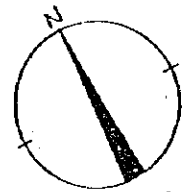


SECTION a ~ a

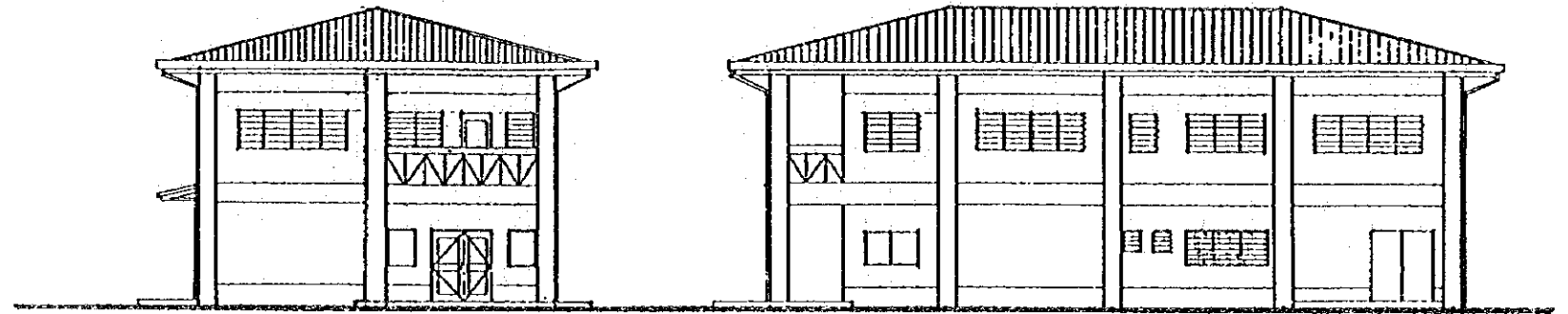
SOUTH



2nd. FLOOR PLAN

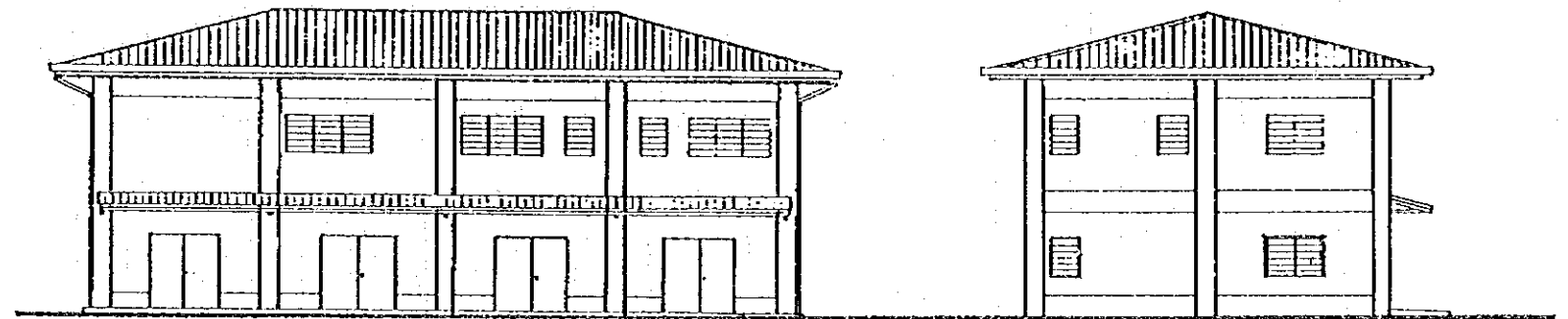


1st. FLOOR PLAN



WEST

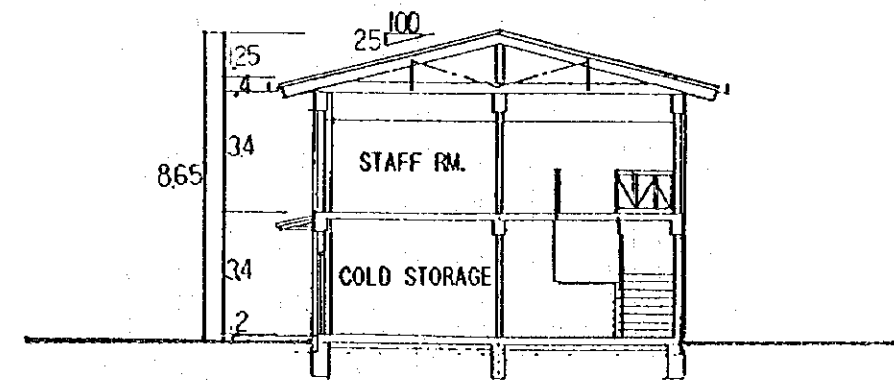
SOUTH



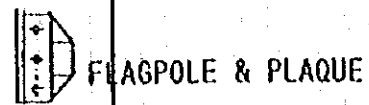
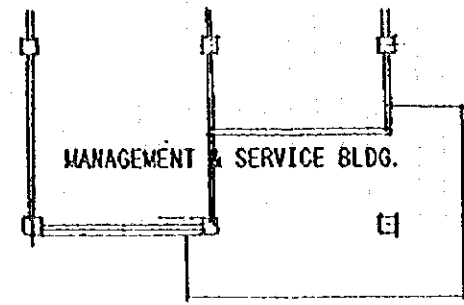
NORTH

EAST

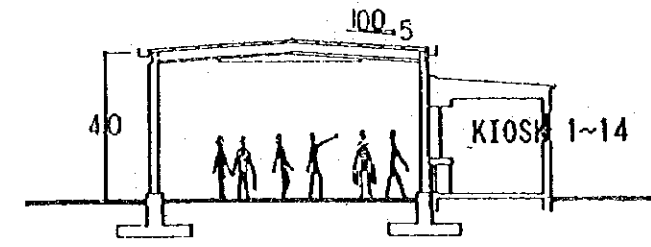
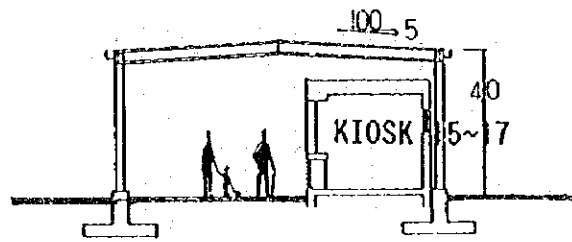
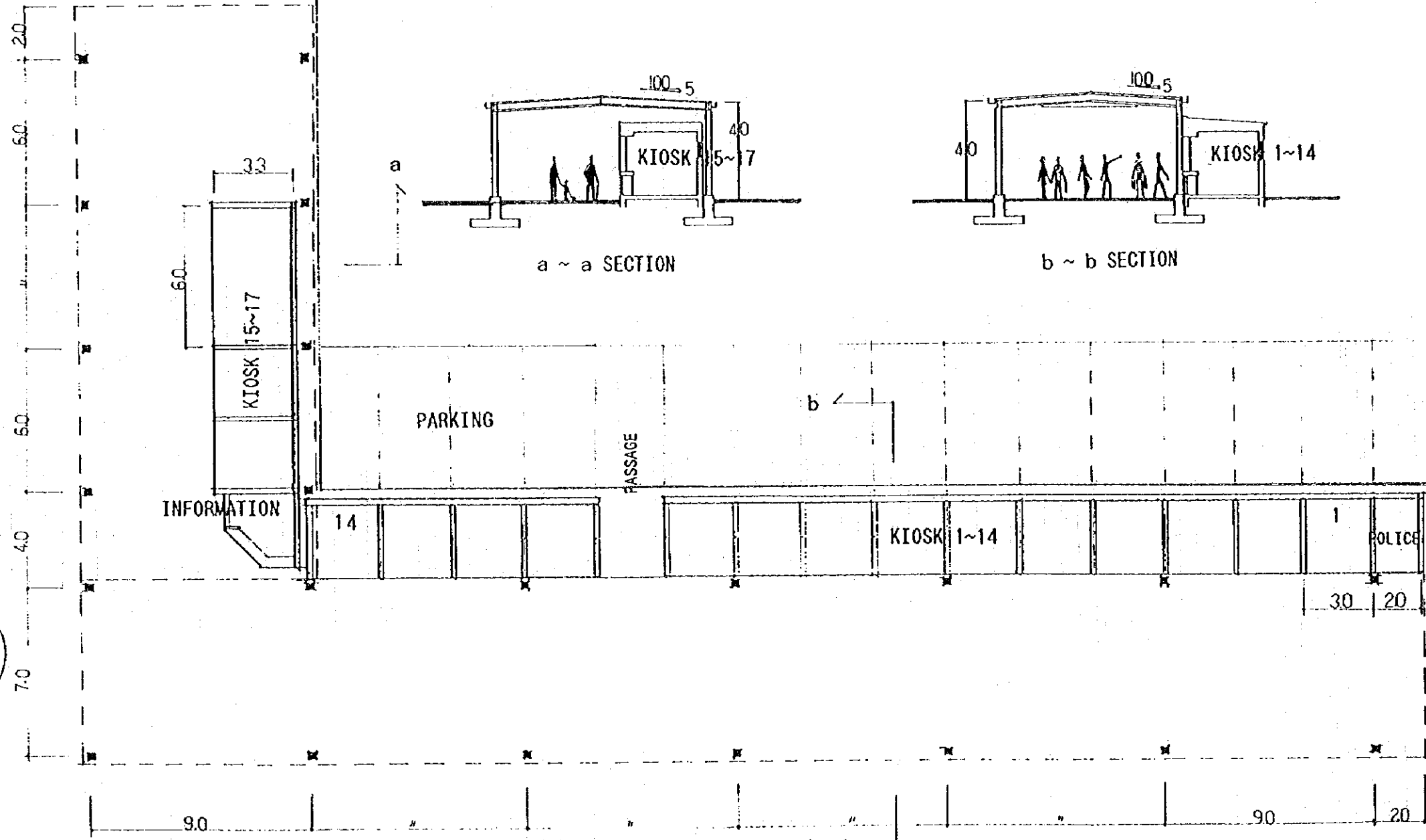
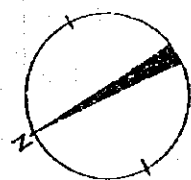
ELEVATION



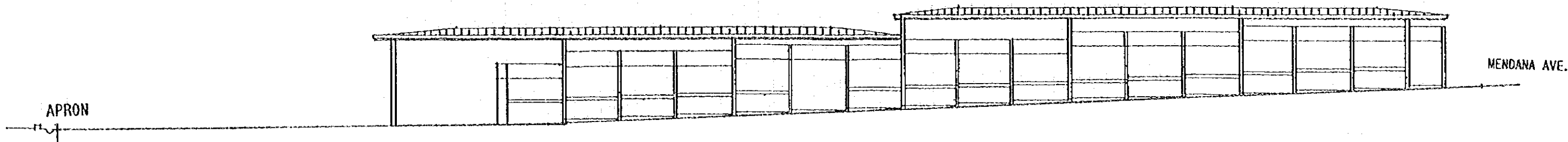
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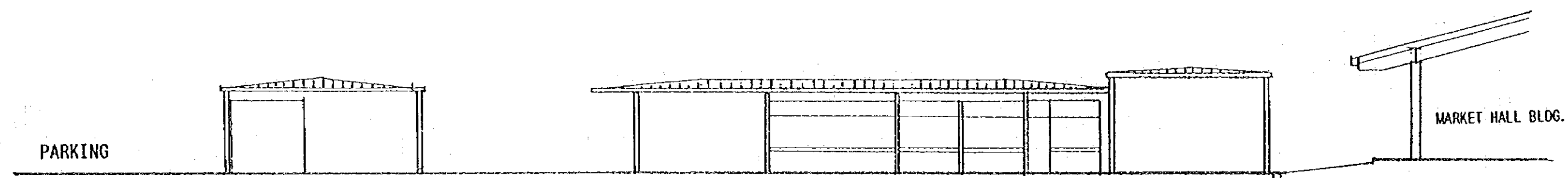
FLOOR PLAN



MARKET HALL BLDG.

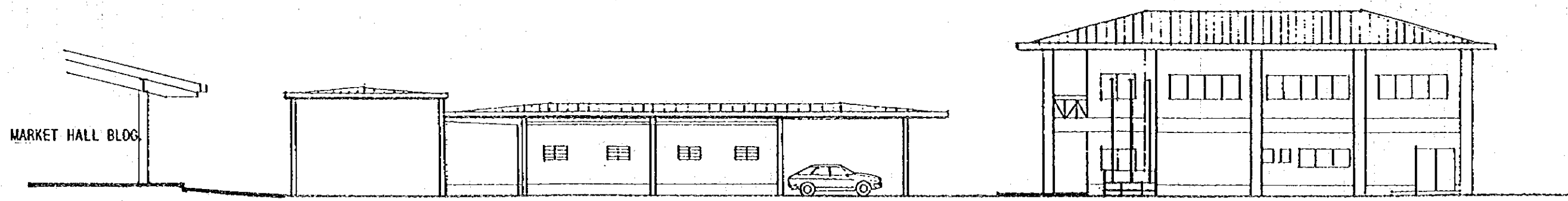


WEST



EAST

NORTH



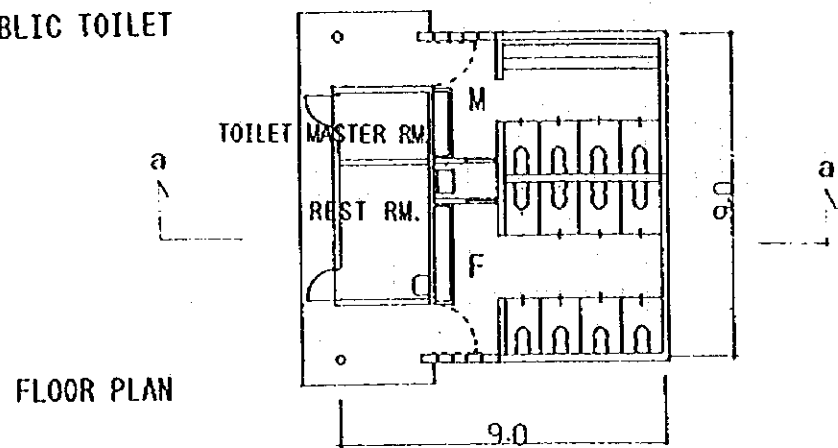
SOUTH

FLAGPOLE & PLAQUE

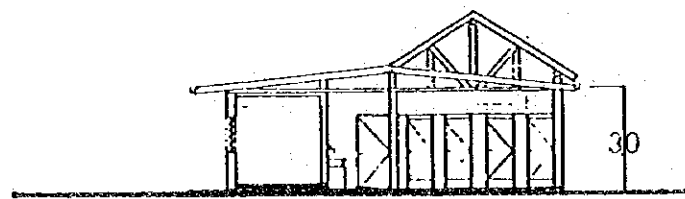
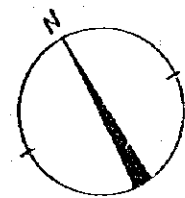
MANAGEMENT & SERVICE BLDG.

ELEVATION

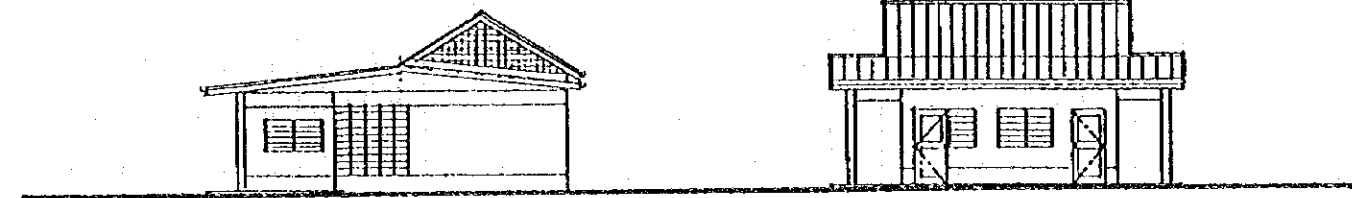
PUBLIC TOILET



FLOOR PLAN



SECTION a ~ a



SOUTH

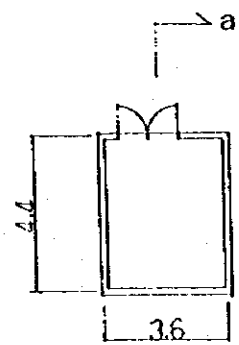
WEST



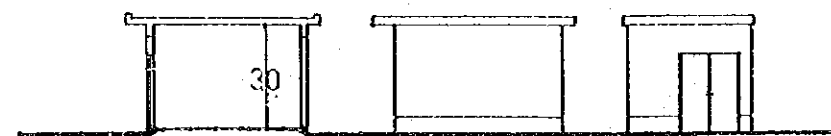
EAST

NORTH

ELEVATION



FLOOR PLAN



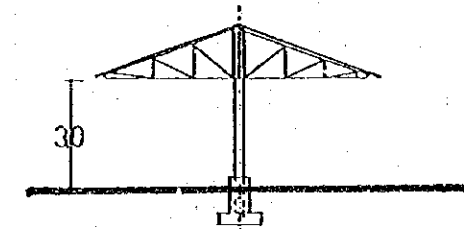
SECTION a ~ a

WEST

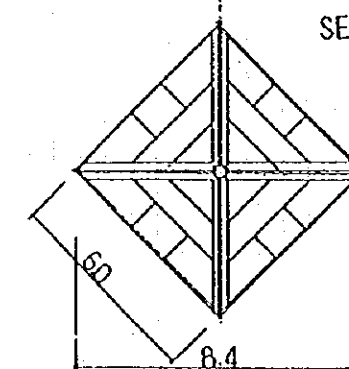
NORTH

ELEVATION

GENERATOR SHED



SECTION



SUNSHADE

## **CHAPTER 3**

### **IMPLEMENTATION PLAN**

## Chapter 3. Implementation Plan

### 3-1 Implementation Plan

#### 3-1-1 Implementation Concept

The Project shall be implemented with the following concept in accordance with the mind of Japan's Grant Aid Scheme.

(1) For smooth implementation of the construction works, further efforts shall be made to bring about better understanding among Solomon Islands Government (Fisheries Division, Ministry of Agriculture and Fisheries), consultant and contractor shall be brought about by exchanging their opinions.

(2) Procurement of materials and labour force shall be relatively easy as the construction site lies in the center of the capital, Honiara City. An effective operational plan including procurement of construction machineries and skilled workers shall be designed and things of good quality shall be secured avoiding useless material.

(3) The rights of ownership of the site reverts to the Government of Solomon Islands, and the servitude, or the rights of utilization is granted to the Honiara Town Council by the Land Control Committee for the fixed period of 50 years. In implementing construction works, such methods shall be adopted as need least on-the-site work considering the influence on surrounding areas and several problems arising from the closure of the Market during renovation and the opening of the substitute market. A full explanation shall be given for the plan of temporary market and the methods of construction to the Government and an approval



will be obtained in advance.

(4) For securing accuracy and quality of construction works, the following should be taken into account:

1) Countermeasures to salt damage: As the construction site is located at the place sustainable to salt damages, salt-resistant materials shall be procured in selecting construction materials and necessary measures against salt shall be taken to protect materials and equipment which are in use.

2) The completion of the works is expected to be in rainy season (around December to April). Therefore, procurement of materials for foundation works and main building members, which will correspond to critical path, should be placed importance in order not to delay the completion and the hand-over.

### 3-1-2 Implementation Conditions

In implementing the Project, the following items shall be taken into account, as the large-scale construction works in Honiara are conducted exclusively by foreign assistance and the works shall be done under severe circumstances with high temperature and high humidity, and the Honiara Central Market is the busiest and largest public market in the country.

(1) In Honiara, widening and extension work of highways and renovation of bridges are under way (by Japan's Grant Aid) but the construction market in the Solomon Islands is very small and the fostering of experts and enterprises of medium standing is not sufficient. Therefore, skilled workers and experts are not fully trained and introduction of expatriates

are required. In case a project of similar scale be planned at the same period, problem of shortage of skilled workers will be worsened. The situation of the construction market at the time of construction shall also be considered and necessary measures shall be taken.

(2) The annual precipitation in Honiara is approximately 2,100mm and during January and March it rises to 300mm per month. Squall is often throughout the year. The labour condition of the outer construction work is quite severe since the mean temperature is approx. 26.5 ° C with humidity as high as 70%.

Attention shall be paid in control of materials and equipment and management of the works especially in rainy seasons.

(3) Although the site is busy existing public market total closure is inevitable during the renovation of the market. Therefore, preparation for the continued services at a substitute market, and efforts to make it known to every retailer and local resident, who are the main utilizer of the market, by official notification are required.

(4) The process of the construction shall be planned to be applicable to the local situation through consultation with the local government officials considering the following points: Re-adjustment of the construction site; measures to be taken in case of excavation of dud bombs during the removal of existing facilities; local standard related to employment; practices and security measures at the site; secure of safety, and etc.

### 3-1-3 Scope of Works

Scope of works of the Project contemplated herein by and between the recipient country and Japan shall be as follows, and the cost estimation borne by the recipient country is shown in the Appendices;

Table 3-1-1 Scope of Works

Contents of construction works, etc.	Japan	Solo- mon
1. Land acquisition, site preparation, and continuation of market service during construction works through securing substitute land.		○
2. Introduction of utility to the site (Electricity, water supply, telephone)		○
3. Metal detection, Bomb disposal		○
4. Construction works (Market Hall, Market Management Building, Parking areas, etc.)	○	
5. Import procedure, customs clearance (1) Transportation until Solomon Islands (2) Tax exemption and customs clearance	○	○ ○
6. Payment of commission to Japanese banks of foreign exchange regarding Banking Arrangement(B/A)		○
7. Legal advantage or favour for embarkation, disembarkation and stay at Solomon Islands of Japanese people for the Project.		○
8. Suitable and effective management of facilities by Japan's Grant Aid.		○
9. Bearing all the cost incurred in construction of facility, transportation of furniture & materials, and installation erection works that cannot be covered by the Grant Aid.		○
10. All the procedure of application for approval or authorization regarding construction works.		○
11. Exemption of all the taxes levied on materials and services to be obtained in Solomon Islands by contractors.		○

### 3-1-4 Consultant Supervision

Basic policy and important points of consultant supervision are as follows:

(1) With the progress of site works, the Consultant shall keep close contact with Fisheries Division, Ministry of Agriculture & Fisheries in order to carry out the construction works smoothly according to the Japan's grant aid scheme.

Especially, the Consultant has to fully discuss the schedule and method of disposal of blind shells, removal of existing facility and land preparation for the site in advance, as those items have significant relation with Japanese contractor's scope of works.

(2) Before the start of works, the Consultant shall examine construction plan and drawings carefully, and judge the appropriateness of the plan, time schedule, quality of planned materials and construction method.

(3) At the time of delivery after completion, the Consultant shall check whether or not the completed contents meet the designed specification, and give suitable instruction if revision is necessary.

(4) An architect shall supervise total construction works, and a civil engineer will assist him at an early stage.

### 3-1-5 Procurement Plan

Locally obtainable materials are limited to aggregates, sands, gravels, soils for banking, etc. There are local contractors that can supply aggregates and ready mixed concrete. Cements, bars, structural steels, and plywoods are mainly imported from New Zealand and Australia, and

there are some local stocks.

Construction materials, for example, cement, bar, wooden mold, metal mold, etc. will be procured locally in principle. But some locally unobtainable items, or several obtainable items that can not be used from the viewpoint of quality and quantity of present stock, shall be procured in Japan and transported to Solomon Islands by sea.

As for construction machineries, large mobile cranes over 35 tons are not available in Solomon, then those cranes must be transported from abroad.

Table 3-1-2 Procurement List

Items	Transportation method
1. Construction machineries and materials	
① Construction machineries a) Pile hammer b) Crawler crane	Marine transportation from Japan
② Construction materials a) Steel frame b) Roof materials c) Foundation pile	Marine transportation from Japan

### 3-1-6 Implementation Schedule

When this Project is implemented in accordance with the Japan's Grant Aid Scheme, i) Exchange of Note (E/N) will be concluded between both Governments, ii) Consultant must complete tender documents, iii) Consultant must proceed with bidding and contractual process for construction works, and then start the works.

The implementation schedule shall be planned in accordance with the followings;

(1) Detail design works

Based on Basic Design Study Report, the Consultant will perform detailed design and prepare bidding documents for the selection of a contractor of construction works. Necessary period for that work will be expected three(3) months.

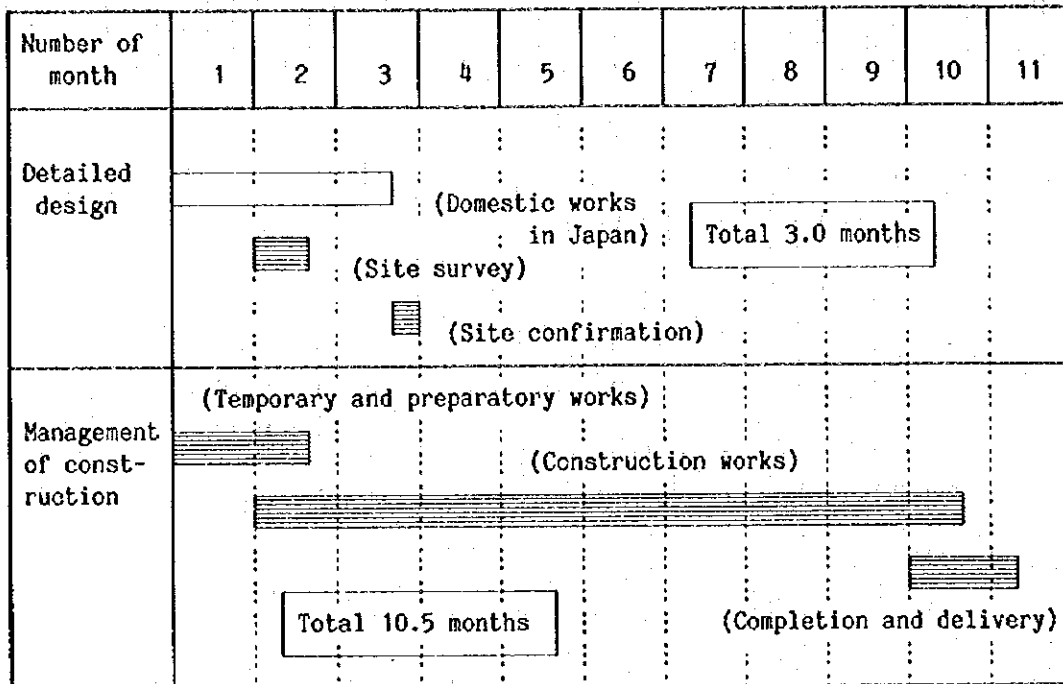
(2) Bidding works

After completion of detailed design works, the Consultant will invite publicly Japanese candidate companies or participants in the bidding for the construction works of the Project, and then examine their qualifications of participation and decide the participants. Based on the examination result, the client of the Project will invite participants for bidding works in the presence of the parties concerned. It will take about 1.3 months from above publicity to the conclusion of the contract.

(3) Construction works

After conclusion of construction contract, contract verification will be obtained from the Japanese Government for the commencement of the Project. Necessary period for total works will be around ten(10) months. If the site preparation works borne by the Solomon side are progressed smoothly without any serious problems, the schedule will roughly be as follows;

**Table 3-1-3 Project Implementation Schedule**



**3-1-7 Obligation of the Recipient Country**

Site preparation works borne by Solomon Islands are as follows:

Removal of existing facilities, site preparation, and connection works of electricity and water supply shall be completed before actual starting of construction works.

**Table 3-1-4 Preparation Works borne by Solomon Islands**

- 1) Metal detection of blind shells and bomb disposal
- 2) Removal of existing facility, site preparation
- 3) Connection works of electricity
- 4) Connection works of water supply
- 5) Connection works of telephone
- 6) Securing of land and preparation for alternative public market before starting the Project
- 7) Others (bank commission, etc.)

### 3-2 Operation and Maintenance Plan

#### (1) Operation and maintenance plan

The market facilities shall be operated and maintained by the Honiara Town Council (HTC) which will be the management body of the Project following the same system as before, for example, allocating the market revenue of facility tariffs, in accordance with the principle that the beneficiary pays, so that sound management may be performed.

When public facilities are constructed with comfortable market environment, it is very important not only for the management body but also for the users to think about how to maintain and improve the market for their own convenience and benefit.

Refrigerating storage facilities shall be operated effectively with participation of private sectors, based on contract for management with the private ice suppliers, which can alleviate the burden of the management body including additional employment of skilled workers.

The annual operation and maintenance cost of the Project is estimated at about SI\$114,893 (approx. J.Yen 3,210,000), outline is shown as Table 3-2-1.



Table 3-2-1 Annual Operation and Maintenance Cost  
(Unit: SI\$)

Item	Cost	Remarks
1. Ice storage bin Operation and maintenance	6,000 ( 6,000)	Rent for private (Electricity cost is borne by tenants.)
2. Air-conditioned insulated room Electricity Operation and maintenance	36,532 (32,032) ( 4,500)	
3. Kiosk, etc. Operation and maintenance	10,800 (10,800)	(Electricity cost is borne by tenants.)
4. Market public facilities Operation and maintenance (Parking area) Operation and maintenance (Service & access road) Operation and maintenance (Pedestrian path)	3,650 ( 1,000) ( 650) ( 2,000)	
5. Market Utilities Electricity Water Operation and maintenance	54,616 (17,647) (29,769) ( 7,200)	
6. Vehicles Fuels	3,295 ( 3,295)	
Total	114,893	

Notes: Above costs do not include any renewal cost of equipment.

Durability of equipments is expected as follows;

- Push cart : 4 years on average
- Vehicles : 5~7 years
- Refrigerating equipment : 5~7 years with full maintenance
- Display panel (Refrig.type): 3 years because of frequent usage

(2) Financial Estimation of the Project

Estimation of the revenue and expenditure of the management of the Project is shown as Table 3-2-2. Average utilization ratio of the revenue producing facilities is estimated at 25 %~30% through the examination of the past data. As this project will improve the efficiency of the facility utilization with total renewal of the market facilities, the average annual utilization ratio of about 50% will be reasonable. Based on the above figure, the annual balance is estimated as follows;

Project revenue	: SI\$ 441,918-	(US\$ 132,500-)
Project expenditure:	SI\$ 321,475-	(US\$ 96,400-)
Balance	SI\$ 120,443-	(US\$ 36,100-)

Table 3-2-2 Revenue and Expenditure of the Project (Unit: SI\$)

Item	Calculation data			Amount			Ratio to total expenditure
	Unit Price (SI\$)	Q'ty		Per day (SI\$)	Per week (SI\$) 6 days	Per year (SI\$) 52 weeks	
		Basic	Plan				
1. Revenue				1,416	8,498	441,918	1.37
(1) Facility tariff				1,186	7,114	369,918	1.15
① Crop retailer	2.00	369	185	369	2,214	115,128	0.36
② Fresh fish esky	50.00	24	12	600	3,600	187,200	0.58
③ Frozn fish esky	* 250.00	27	27	( 22)	( 130)	6,750	0.02
④ Storage box, etc	5.00	12	12	60	360	18,720	0.06
⑤ Crop depo.	5.00	27	27	135	810	42,120	0.13
⑥ Fish depo.	0.00	24	24	0	0	0	0.00
(2) Rental fee				231	1,385	72,000	0.22
① Kiosk, etc.	**250.00	18	18	( 173)	(1,038)	54,000	0.17
② Ice storage bin	**750.00	2	2	58	346	18,000	0.06
2. Expenditure				1,030	6,182	321,475	1.00
(1) Salary				145	868	45,120	0.14
① Market master	**800.00	1	1	( 31)	( 185)	9,600	0.03
② Market staffs	**400.00	2	2	( 31)	( 185)	9,600	0.03
③ Security Guards	**400.00	5	5	( 77)	( 462)	24,000	0.07
④ Fringe cost	** 20.00	8	8	( 6)	( 37)	1,920	0.01
(2) Direct cost				507	3,042	158,203	0.49
① Electricity	0.555	290	290	161	966	50,216	0.16
② Water	1.95	49	49	96	573	29,812	0.09
③ Fuel oil	1.32	8	8	11	63	3,295	0.01
④ Telephone	20.00	2	2	( 2)	( 9)	480	0.00
⑤ Cleaning charge	** 4,200	1	1	( 162)	( 969)	50,400	0.16
⑥ Accounting charge	** 2,000	1	1	( 77)	( 462)	24,000	0.07
(3) Maintn'ce cost				76	457	23,748	0.07
① Facility	** 954	1	1	( 37)	( 220)	11,448	0.04
② Ref. equipment	** 875	1	1	( 34)	( 202)	10,500	0.03
③ vehicles	** 150	1	1	( 6)	( 35)	1,800	0.01
(4) Extension services				46	277	14,400	0.04
① Extension services	** 1,200	1	1	( 46)	( 277)	14,400	0.04
(5) Depreciation				256	1,539	80,004	0.25
① Ref. equipment	** 5,000	1	1	( 192)	(1,154)	60,000	0.19
② Vehicles	** 1,000	1	1	( 38)	( 231)	12,000	0.04
③ Push cart	** 667	1	1	( 26)	( 154)	8,004	0.02
3. Expense				386	2,316	120,443	0.37
(1) Revenue				1,416	8,498	441,918	1.37
(2) Expense				1,030	6,182	321,475	1.00

Note: \* unit amount annual basis.  
 \*\* unit amount monthly basis.

## **CHAPTER 4**

### **PROJECT EVALUATION AND RECOMMENDATION**

## Chapter 4. Project Evaluation and Recommendation

### 4-1 Project Effect

#### 4-1-1 Project Effect

Beneficial effects of the Project, when executed, will directly cover the followings; i )Honiara citizens of about 45,000 who purchase perishable foods such as fresh fish, frozen bonito and vegetables at the Honiara Central Market, ii )about 600 local small-scale producers in the rural area who sell fish and vegetables to consumers in Honiara, and iii )about 50 retailers who sell frozen bonito bought from the industrial fishing companies by wholesales.

The effects will benefit 93,000 people, one fourth of the total population of Solomon Islands, including Honiara citizens, producers and retailers and their family members.

Furthermore, the following direct effects can be expected through the total rehabilitation and improvement of the Honiara Central Market by the implementation of the Project.

(1) Almost all the people in the capital city use the Honiara Central Market as the largest general retail market to obtain fresh foods. Therefore, total rehabilitation of the market facilities will promote the function of the market as a retail market of agricultural and fisheries products in a consuming area, which will enable stable supply of agricultural and fisheries products for consumers along with better reliance on the products sold at the market and their producers.

(2) Traffic line of people, vehicles and goods will be reviewed, and the

market facilities will be totally re-arranged. As a result, this project will introduce a new traffic line which separates commodities from visitors and shoppers so that the market place may be utilized effectively, easing the congestion at the Honiara Central Market and its market hall.

(3) Poor water supply and sewage systems cause poor sanitary environment for the market where fresh foods are handled. This project will improve these market utilities including water supply and sewage systems. Improvement of public service facilities such as toilet, washing zone, and etc., will provide amenity and sanitary condition of the Honiara Central Market.

(4) Information of demand and supply of products and management are not available to the users concerned, because of lack of space for market management. This project will provide office, stores and meeting room for the management of the market. Rationalization of management and improved operation of the Honiara Central Market will activate marketing and sales activity of agricultural and fisheries products, will contribute to encouragement of producers' and promotion of local small-scale production industry.

#### **4-1-2 Examination of Applicability of the Project**

The Honiara Central Market has been utilized almost everyday by the urban consumers in Honiara for fresh foods such as fish and vegetables, and it has provided opportunities for cash income as a base of marketing for local products to the local small-scale producers. Its contribution to the economy in the capital city of Honiara, is quite remarkable. Solomon

Islands is a dual economic society, with subsistent economy in rural areas and monetary economy in urban cities.

It is very important to develop local small-scale primary production industries and satisfy the demand of foods in urban areas, especially in the capital city of Honiara, and to establish stable supply system from the production to the marketing. Judging from the above points, the Project, being of great significance, shall be implemented smoothly so that an organized production system of small-scale industries in the sectors of fisheries and agriculture can be established, and marketing and distribution networks can also be developed.

It is concluded that the Project is worth while and appropriate to be implemented as a Japan's Grant Aid project, considering the following expected effects,

- (1) Beneficial effects can cover both rural and urban people, reaching one fourth of the total population of 93 thousand in Solomon Islands.
- (2) As the Honiara Central Market is utilized by almost all Honiara citizens to get fresh fish and vegetables, it is urgently required to improve sanitary and environmental conditions of the market.
- (3) From the financial point of view, the Project can be managed independently. The annual revenue is expected SI\$441,918 while expenditure SI\$321,475.
- (4) The Project will contribute to the achievement of development goal such as promotion of local industry, correction of economic disparity between urban and rural areas, establishment of fish marketing and distribution networks.

## **4-2 Recommendation**

As the Project is expected to make a great contribution, as stated above, to the improvement of people's living standard it is of great importance to implement the Project as a Japan's Grant Aid scheme.

In implementing the Project, the followings are recommended.

### **4-2-1 Conditions for Project Implementation**

(1) Prompt removal of existing facilities and preparation of land for construction works are necessary upon approval of the Project implementation, considering that the Project site is the busiest Honiara Central Market.

(2) For the safety and smooth implementation of the Project, it is essential to conduct a metal detection survey for blind shell (dud bomb) before the start of works and disposal of them, if detected.

(3) The Market must be totally closed during construction works. It is indispensable to announce the Project and continued operation of the market to the retailers, visitors and shoppers in advance of the construction to avoid confusion.

### **4-2-2 Management of the Project**

#### **(1) Introduction of Independent Accounting System**

The Project is expected to produce more revenue than now on the one hand, but more expenditure is required for the maintenance and operation of the market facilities on the other. As the Honiara Town Council has a single

account at present, those maintenance and operation costs of the Project shall be borne by the account. Periodic maintenance is important for effective utilization of the facilities and continued efforts to provide comfortable market environment and services are required to meet the needs of urban residents, local producers, retailers, and etc.

Therefore, it is recommendable to introduce an independent accounting system in this Project, in order to manage and maintain the Honiara Central Market which responds the requirement of the people, while improving collection of rent.

#### (2) Incentives to the rural small-scale producers

Rental charges of the facility shall be based on present regulation. In order to facilitate effective utilization of the facility and equipment, and promote active participation by the rural artisanal fishermen and petty farmers it is recommended that proportion of daily collection system and annual contract system and cost reduction be reviewed as effective measures for incentives.

### **4-2-3 Promotion of Small-scale Fisheries Development**

#### **& Establishment of Distribution System**

Management of the Project by the proposed fish marketing authority is not practical for now. Therefore, in considering the promotion of small-scale fisheries in the Project, it is an important issue whether many fishermen can access to the market. However, it is difficult for fishermen to have easy access to systematized markets except for some where the small-scale fisheries development projects are successfully carried out with foreign assistance.



In operating the Project, it is important to give priority to the project for improvement and promotion to activate small-scale productive industries including artisanal fisheries in local area and to promote an organized cooperation with other fisheries projects funded by foreign aids with incentive measures for the small-scale fishermen taking into account.

Through implementation of the Project establishment of a production system of fisheries and development of marketing channels to enable stable supply of products are concluded quite important.

Accordingly, continued efforts to design a project for development of rural artisanal fishery and to realize it should be advisable.

## APPENDICES

## APPENDICES

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## 1. Member List of the Survey Team

### 1-1 Basic Design Study

Mr. T. Sasaki	Team Leader	:Deputy Director of Basic Design Study Div. Grant Aid Study & Design Dept. JICA
Ms. N. Otsuki	Coordinator	:Administration Div. Procurement Dept. JICA
Mr. S. Nakamura	Technical Advisor	:Technical Official Office of the Overseas Fisheries Cooperation, Oceanic Fishery Dept., Fisheries Agency
Mr. M. Kondo	Chief Consultant	:Deputy General Manager, Coordination Dept.II. D & A Engineering Co.,Ltd.
Mr. O. Hiraoka	Fish Marketing Planner	:Coordination Dept.II. D & A Engineering Co.,Ltd.
Mr. Y. Ban	Crop Marketing Planner	:Consultant Dept. Overseas Merchandise & Inspection Co.,Ltd.
Mr. T. Toku	Cold Storage & Ice Machine Planner	:Facility Engineer D & A Engineering Co.,Ltd.
Mr. T. Kawada	Facility Planner	:Technical Advisor D & A Engineering Co.,Ltd.

## 1-2 Draft Basic Design

Mr. J. Okamoto	Leader	:Deputy Director, Far Seas Fisheries Division, Oceanic Fisheries Dept., Fisheries Agency
Mr. T. Kobayashi	Coordinator	:Follow-up Div. Grant Aid Project Management Dept. Japan International Cooperation Agency (JICA)
Mr. M. Kondo	Chief Consultant	:Deputy General Manager, Coordination Dept.II. D & A Engineering Co.,Ltd.
Mr. T. Kawada	Facility Planner	:Technical Advisor D & A Engineering Co.,Ltd.

## 2. Survey Schedule

### 2-1 Basic Design Study

	Date	Week	Itinerary	Accommodation
1	6/25	Sun	Consultants left Tokyo 20:40 JL775→	
2	26	Mon	Consultants arrive Honiara → 21:35 IE701 Governmental Officials left Tokyo 18:00 JL773→	Honiara
3	27	Tue	Contracted Site Survey Works Governmental Officials arrive Honiara → 21:30 QF271	Honiara
4	28	Wed	Courtesy call on the Ministry of Agriculture and Fisheries, Embassy of Japan, & Honiara Town Council. Study of Market, ice plant. Start boring.	Honiara
5	29	Thu	Discussion with Min. of A. F. & HTC	Honiara
6	30	Fri	Field survey of Honiara Central Market, Kukumu Market, and Robe Market.	Honiara
7	7/ 1	Sat	Field survey at Lambi Fisheries Center	Honiara
8	2	Sun	Site survey at Robe and Kukumu Market	Honiara
9	3	Mon	Discussion with Fisheries Division and HTC, etc.	Honiara
10	4	Tue	Discussion with Ministry of Finance	Honiara
11	5	Wed	Signing of the Minutes of Discussion Reporting to the Embassy of Japan	Honiara
12	6	Thu	Discussion at the JOCV office	Honiara
13	7	Fri	Team Leader and 2 Officials left Honiara Consultants continued the site survey until 20th of June	Honiara
14	8	Sat		Honiara
15	9	Sun		Honiara
16	10	Mon		Honiara
17	11	Tue		Honiara
18	12	Wed		Honiara
19	13	Thu		Honiara
20	14	Fri		Honiara
21	15	Sat		Honiara
22	16	Sun		Honiara
23	17	Mon		Honiara
24	18	Tue		Honiara
25	19	Wed		Honiara
26	20	Thu	Reporting to the Embassy of Japan	Honiara
27	21	Fri	Consultants left Honiara 02:10 IE700 arrived Brisbane 04:20 left Brisbane 09:50 arrive Tokyo 19:35 JL776	

2-2 Draft Basic Design

	Date	Week	Itinerary	Accommodation
1	9/17	Sun	Left Tokyo 20:00 JL775 →	
2	18	Mon	→07:35 Brisbane 16:30(QF271)→ Honiara 20:30	Honiara
3	19	Tue	Courtesy call on Embassy of Japan Discussion with Fisheries Division and HTC, etc. Site survey	Honiara
4	20	Wed	Courtesy call on Embassy of Japan Discussion with Fisheries Division and HTC, etc. Site survey	Honiara
5	21	Thu	Discussion with Fisheries Division and HTC, etc. Site survey	Honiara
6	22	Fri	Signing of the Minutes of Discussion Reporting to the Embassy of Japan Collection of Materials	Honiara
7	23	Sat	Collection of Materials	Honiara
8	24	Sun	12:15 Honiara (IE700) → 14:25 Brisbane	Brisbane
9	25	Mon	09:50 Brisbane (JL776) → 19:35 Tokyo	

### 3. List of Party Concerned in the Recipient Country

#### 3-1 Basic Design Study

##### Ministry of Agriculture and Fisheries

Ms. Phyllis M. Taloikwai	:Permanent Secretary
Mr. Albert Wata	:Under Secretary, Fisheries Division
Mr. Kitchener Collinson	:Senior Fisheries Officer
Mr. Jeffrey Varuia	:Director of Agriculture Extension, Agriculture Division

##### Ministry of Land Physical Planning Division

Mr. Robert M. Zutu	:Senior Physical Planner
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##### Honiara Town Council

Hon. David Maesua	:President
Mr. Joseph Hasiau	:Town Clerk (Acting)
Mr. John Babalu	:Deputy Town Clerk
Mr. John Huniehu	:Senior Planning Officer
Mr. Solomon Mua	:Development Planner, Planning Division
Mr. Andrew Airahui	:Building Inspector, Planning Division

##### Solomon Islands Port Authority

Mr. Kabui	:General Manager
Mr. Mark Waite	:Chief Engineer
Mr. Barrile	:Port Engineer

##### Ministry of Finance

Mr. Reuben B. Natown	:Under Secretary (Finance)
Mr. Wellington Piduru	:Principal Economic Stastician
Mr. Steven Basili	:Chief of Budget Division



**Ministry of Home Affairs**

Mr. A. R. Manakako

:Permanent Secretary

Mr. Erick K. Ghemu

:Chief Administration Officer

**Ministry of Labor and Employment**

Mr. Robert Unusi

:Department of Control of Labor

**Office of Prime Minister**

Mr. Johnson Honimae

:Director of Information

**Ministry of Environment, Water, Mineral Resources**

Mr. Allison Popabatu

:Seismological Observer

Mr. Tia Masolo

:Environment & Conservation Division

Mr. Lloyd Tahani

:Meteorological Office

**Ministry of Transport, Works and Utilities**

Mr. Enaly Fifiri

:Director of Architecture & Building

**Solomon Islands Water Authority**

Mr. Barry Horvath

:Chief Engineer

**Solomon Islands Electricity Authority**

Mr. Matin Rasu

:Distribution Engineer

**Federation of Employers**

Mr. Neemia Boberio

:General Secretary

**Honiara Refrigeration & Airconditioning**

Mr. Jim Cheffers :Managing Director

**CENTATERM LTD.**

Mr. Alf Scholz :Managing Director

**R & R Engineering Ltd.**

Mr. Stephen Colbert :Director

**Kinhill Kramer (S.I.) Ltd. Co., Ltd.**

Mr. Peter W. A. Read :Manager

**Embassy of Japan**

Mr. Noboru Kawagishi :Charge D'affaires

Mr. Seijiro Shirahama :First Secretary

Mr. Motomi Kamiya :Officer

**JOCV Solomon Office**

Mr. Ryosuke Takaoka :Director

Mr. Yoshinobu Takishita :Coordinator

### **3-2 Draft Basic Design**

#### **Ministry of Agriculture and Fisheries**

Ms. Phyllis M. Taloikwai	:Permanent Secretary
Mr. Albert Wata	:Under Secretary, Fisheries Division
Mr. Kitchener Collinson	:Senior Fisheries Officer Fisheries Division

#### **Ministry of Land Physical Planning Division**

Mr. Steve Likaveke	:Chief Physical Planner
Mr. Robert M. Zutu	:Senior Physical Planner

#### **Honiara Town Council**

Hon. David Maesua	:President
Mr. Joseph Hasiau	:Town Clerk (Acting)
Mr. John Huniehu	:Senior Planning Officer
Mr. Andrew Airahui	:Building Inspector, Planning Division

#### **Embassy of Japan**

Mr. Yujo Okano	:Charge D'affaires
Mr. Seiji Shirohama	:First Secretary
Mr. Motomi Kamiya	:Officer

#### **JOCV Solomon Office**

Mr. Yoshinobu Takishita	:Coordinator
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#### **Solomon Islands Electricity Authority**

Mr. Matin Rasu	:Distribution Engineer
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