

IMPLEMENTATION REVIEW STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT
OF
FISHERY INFRASTRUCTURE IN ANSE LA RAYE
IN
SAINT LUCIA

March 2008

JAPAN INTERNATIONAL COOPERATION AGENCY

ECOH CORPORATION

PREFACE

In response to a request from the Government of Saint Lucia, the Government of Japan decided to conduct a implementation review study on the Project for Improvement of Fishery Infrastructure in Anse La Raye and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Saint Lucia a study team from January 5 to January 19, 2008.

The team held discussions with the officials concerned of the Government of Saint Lucia, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, 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 Saint Lucia for their close cooperation extended to the team.

March, 2008

Masafumi Kuroki
Vice-President
Japan International Cooperation Agency

March, 2008

LETTER OF TRANSMITTAL

We are pleased to submit to you the implementation review study report on the Project for Improvement of Fishery Infrastructure in Anse La Raye in Saint Lucia.

This study was conducted by ECOH CORPORATION, under a contract to JICA, during the period from December, 2007 to March, 2008. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Saint Lucia 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,

Eiichi Matsuura
Project manager,
Implementation review study team on
The Project for Improvement of
Fishery Infrastructure in Anse La Raye
ECOH CORPORATION

Summary

Summary

St. Lucia is a volcanic island country, the area of 616 sq. meters, 42.3km long and 22.4km wide, and is located at the middle of Windward Islands in Caribbean Sea. The island is very mountainous, being comprised of lots of peaks, and is mainly of two topographical regions of the northern part with wide flat valleys and the southern and central parts with steep valleys and peaks of mountains. A tropical marine climate with an average temperature of 27°C characterizes the yearly season of the rainy season during June and November, and the dry season during December and May.

The population of the country is estimated at 164,791 people in 2005, and the growth rate of population is 1.37% according to statistics of the Government of St. Lucia. In the national economy, the gross domestic product (GDP) became US\$830 million in 2005 and GDP per capita was US\$4,986 (2005). The major industry is the tourism and agriculture that centers on the export of banana. As for agriculture, in which 80 percent of the employees are engaged, the production of the banana gets depressed for the natural damage such as hurricanes in recent years, in addition to abolition of the preferential treatment system of UK that is the main export destination and the change of an international market. Diversification of industry centering on the promotion of the tourism industry becomes an important issue. The sector of agriculture, forestry and fishery is important industry that accounts for about 6% of GDP (1999), and follows the tourism industry of 13% or more. The fishery plays an important role to supply the animal protein and employment opportunity (about 2000 people) etc. Moreover, the Government implements the measures for promoting development of fishery industry with collaboration with tourism industry.

The Government of Saint Lucia reiterated revision of the comprehensive National Development Plan for certain term and has been implementing the measures based on the latest plan to cover all the sectors. With the National Development Plan, the Government of Saint Lucia has prepared Medium Term Development Strategy Paper every several years as milestones toward the National Development Plan. The Government has been implementing the project for comprehensive National Development Plan with the cooperation of United Nations Department of Economic and Social Affairs. For promoting the project, National Economic Council established by the Government is expected to play a key role and issued the report titled "TOWARD AN INTEGRATED ECONOMIC STRATEGY". The council proposed the Short Term Remedial Growth Strategy, which is composed of main policies of Employment Maximization, Poverty Reduction and Crime Abatement. It highlights strategic interventions in the fisheries sector as follows:

- Strategic Focus

Fisheries sector play an important and sometimes underrated role in the economy of Saint Lucia, providing both full-time and seasonal employment, and contributing significantly to domestic food security and national GDP. Employment in the fisheries sector extends to and includes persons other than those who catch fish, e.g. boat boys, vendors and truckers.

Offshore pelagics and larger pelagics have the best potential for increased exploitation and present an identifiable path for technical and economic diversification of fisheries sector in Saint Lucia. In addition, persons to be employed by fisheries sector are apt to show strong intension to be a professionals. The fisheries sector is attracting younger people.

Furthermore, in recent years there has been a significant investment in fisheries infrastructure in Saint Lucia. This has, in many ways, also contributed to the transformation process within the sector.

Based on the foregoing, economic diversification in Saint Lucia must both contribute to and benefit from enhanced economic activity within the fisheries sector.

1) Priority Issues

- There is a need to protect economic territorial waters from fishing activity to safeguard the depletion of fish stocks.
- Commercial operation and financial returns from the facilities extensively invested by Government are less than optimal. Government is required to put in place appropriate mechanism for efficient management & their maintenance.

2) Proposed Strategic Interventions

- To encourage and facilitate more widespread use of improving fishing technology.
- To improve post harvest technology and quality assurance.
- To design strategies for improving market access locally and externally.
- To institute systems for improved fishery management.
- To re-deploy resources for improving the role and capacity of fishers organization so as to assure future benefits to fishers.
- To introduce measures for private sector involvement in improving the commercial operation of the national fisheries infrastructure.

In addition, “Plan for managing the fisheries of St. Lucia” issued by the Department of Fisheries in 2007 targets the followings:

- To develop the fishing industry in terms of modernization of fisheries infrastructure and fishing boats and use of improved fishing gear and methods
- To promote self-sufficiency through increased production from caught fish and the aquaculture sector.
- To advance the social and economic welfare of fishermen and their families.
- To improve the nutrition of the nation through the provision of increased volumes of fish production.

Regarding the activities of fisheries sector in Saint Lucia, annual fish catch of 1,440 tons were landed in 2006 by 2,311 fishermen with 690 fishing boats registered. Insufficient supply of local fish causes import of fish to compensate the shortage in the market. The Government established the 8-year Plan for Fisheries Development during 2000 and 2007, which stresses polices

to increase the fish production by promotion of artisanal fishery and to decrease volume of fish import. The Department of Fisheries is implementing measures of:

- Improvement of fisheries facilities for fish landing, fish processing, fish distribution, etc.,
- Enhancement of fishermen's cooperatives, and
- Improvement of fishing technologies.

119 fishermen living in Anse La Raye Village, located at the west coast of the Island, conduct artisanal fishery business to catch pelagic fish and coastal bottom fish with 24 fishing boats registered. It takes about 30 minutes to drive on the road of 20 km from Castries and Anse La Raye is deemed to have high potential to supply fresh fish to the market in Castries.

In the face of given fishery merit, each function of fisheries facilities in Anse La Raye is deteriorated. The damaged jetty, constructed for ferry boats, has so high elevations of the deck that fishing boats are not accommodated. Inadequacy of the jetty suffers in-port activities of the fishing boats. As for other fisheries facilities, incompatibility of the existing facilities with fishing gear and unavailability of unification of relevant facilities have caused obstacles to fishery development, as a result of significant alternation of fish distribution system, fishing methods/ gear and approaches of hygienic control.

In order to promote fisheries activities by the fishermen in Anse La Raye and neighboring districts, the Government of Saint Lucia has requested of the Government of Japan the project under the grant aid scheme for development of facilities for securing safe and efficient activities at the landing station on August in 2004.

Contents of the Project

Scope of Assistance in Grant Aid		
Items	Specifications	Quantity
1. Civil Works		
1) Jetty & accessories	Jetty of steel pipe piles *Length:48m, Width:5.6m *Berth length: 27m x 2 *Approach: 21m, Width:4m *Piles protected with anti-corrosion	1 unit
2) Boat Landing Facility	Winch and portable slides	1 unit
2. Building Works		
1) Fishing gear lockers	R.C. Blocks construction Floor area: 128.1sq. m & 132.3 sq. m	2 buildings of 30 lockers
2) Drainage	Septic tank	1 unit
3) Fish Complex	Fishery Complex for rooms of: – Ice making & storage plants – Fishermen's Hall – Tackle shop – Office of Co-op – Office of Dept. of Fisheries * Total floor area : 341.4 sq. m	A building of 341 sq. m
① Ice making machine	Capacity: 1 ton/day	1 unit
② Ice storeroom	Storage capacity:2 ton	1 unit
③ Insulated ice box	Insulated ice box of 100 liters	2 units
④ Equipment of retailing fish	Tables and sinks of stainless steel	2 units
4) Workshop	Repair of roofing (area:199 sq. m) Repaint of steel frames, Electricity	1 unit
5) Venders' arcade	Repair of floor concrete & water supply facility	1 unit

With implementing the project, the following effects are expected and the project is justified as appropriate and effective under the grant aid scheme of the Government of Japan.

【Direct Effects】

① Reduction of Landing Hours (Landing efficiency)

Fish is landed from beached fishing boats. For beaching boats, a lot of labor work is required as involvement of 6 persons. The hours for landing fish will be reduced on average to 0.5 hours from 1.5 hours at present after improvement of jetty and 2 persons will be enough for landing fish at the jetty while 6 persons are involved in the said work.

② Reduction of hours for the preparation of fishing (Number of fishing boats using the jetty)

Provision of the jetty reduces hours for preparation for fishing operation such as loading of fishing nets from 1.5 hours to 0.5 hours on average as well as the landing activities stated above. Reduction of labor force for the preparation is also expected from 6 persons to 2 persons. The jetty can render services of landing fish, the in-port preparation and lying by.

③ Reduction of number for repairing fishing boats (Number for repairing fishing boat)

The repair of the boat bottoms and the drying of boats are necessary every day for wooden boats and once every two weeks for FRP boats under the present situation of beaching boats. The repair work can be reduced to about once a few days for wooden boats and once a month for FRP boats with improving the jetty and at the same time, the damage to boat bottoms can be greatly reduced with provision of the boat landing facility. Fishing boats can be evacuated to the road located at the backside of the fisheries facilities using the boat landing facility in hurricanes and the risk of boat damages in rough seas can be averted.

④ Upgrading of freshness for caught fish (Fish purchasing ratio, Fresh fish purchasing ratio in Fish Friday)

Supply of ice to meet the demand of 1.4 tons can improve freshness of landed fish with installing ice making machine, ice storage and insulated ice box. It will be possible to supply fresh fish to the hinterland and it is also expected to increase purchase ratio of fresh fish on Fish Friday (61%).

⑤ Increase of fishing efforts (Fish landing volume)

A lot of labor for in-port operation can be reduced and fishing efforts of fishermen can be increased to enable them to control time for selling fish that is stored with ice. The alternation of fishing activities are brought about by provision of the jetty, fish processing facilities (ice making machine, ice storage, primary processing facility and etc.), a tackle shop and fish gear lockers.

⑥ Vitalization and Enhancement of Fishermen's Cooperative (Number of registered fisherman)

Anse La Raye Fishermen's Cooperative becomes the main body for the operation and management of the fisheries facilities to be improved in the project. Currently, there is no office of the cooperative and the different body has operated and managed therefore, the activities to support the artisanal fishermen can not be attained. After the completion of the facilities, the operation and management body will be the Fishermen's Cooperative and the cooperative activities will be vitalized and enhanced.

⑦ Increase of the fisheries training, support for betterment of fishermen's welfare and education opportunity by the Department of Fisheries (Number of opportunity for education and training)

Provision of the Fishermen's Hall and the cooperative offices enables the Fishermen's Cooperative to hold regular meetings and fisheries trainings, and does the Department of Fisheries to extend fisheries technologies and training/education for advance of fishermen's welfare.

【Indirect Effects】

- ① The project is to support fisheries' policy of the Government of Saint Lucia since the operation and management by the Fishermen's Cooperative becomes possible with the improvement of the facilities in Anse La Raye, which is the last landing station among 13 places in the west coast.
- ② Improvement of working circumstances for fishermen and increase of opportunities of fishing operation, which results in increase of fishermen's income, are expected with implementing the project. Increase of fishing efforts and employment opportunities are expected also.
- ③ The Government of Saint Lucia has the plan of the development of Anse La Raye Village with the balanced promotion of tourism and fishery. In the aspect of tourism, the village has successfully planned and held the event of Fish Friday that reflects characteristics of the fishing village. The project will enable the fishermen to stably supply fresh fish and support the event with providing the facilities for ice supply, sanitation and convenient places for the event. It will result in enhancement of both activities of fishery and tourism and contribution to the Government policy of promoting the fishing village.

Anse La Raye Fishermen's Cooperative Society Limited is recommended to effectively operate and manage the facilities with implementing the followings after completion of the facilities. The Department of Fisheries is also recommended to conduct the relevant items listed below for assisting the cooperative.

① Appropriate operation and management

With assistance of the Department of fisheries and the Department of Cooperatives, the Cooperative at Anse La Raye is expected to run the fisheries facilities on stand-alone basis and annually reserve the fund for renewal of the ice making machine and ice storeroom from the profits which will be generated with saving operation costs and efficiently managing the facilities.

For promotion of the fishery and tourism at Anse La Raye, general understanding should be required to render services of the fisheries facilities to the foreign tourists and local visitors on Fish Friday. The cooperative should be responsible for efficient operation and management of the facilities.

② Implementation of training and seminars for fishermen

The Cooperative should take responsibilities to conduct training of fishing technologies and seminars for advance of their welfare, to reserve necessary funds from the profits, and to contribute to promotion of the fishing village.

③ Collection of more accurate fisheries statistics

The Department of Fisheries conducts sampling surveys at several landing stations and

estimates the fish catch statistically. Anse La Raye, for example, was a sampling station for fish catch but no survey is conducted. It is believed that more detailed survey will bring about accurate data, which may result in easier comprehensive administration of the Department. The survey may reveal the difference between market prices of fish and fish prices directly sold by fishermen and it may produce basic data for improvement of fishermen's welfare. In addition to them, fundamental data for researching fish resources and fish catch should be collected for the fisheries administration by the Department of Fisheries. Provision of an office for a Fisheries Extension Officer will help the monitoring survey.

④ Management of the jetty for safe and efficient in-port operation

The jetty is deemed to be congested with fishing boats for their own purposes, since the scale of the jetty is designed for minimum services of landing, preparation and lay-by berths. For safe and efficient management of the facility, rules for using the facility should be formulated for fishermen on the basis of significant improvement of operation time.

⑤ Safe fishing operation and establishment of evacuation of fishing boats

In hurricanes, fishing boats are obliged to be evacuated ashore at Anse La Raye Village or from the Bay, in which no natural or artificial breakwater exist, to calm waters in other places. For the evacuation, meteorological information on hurricanes should be promptly transmitted to fishermen through the Cooperative and establishment of the system for transmitting such information is recommended. The Department of Fisheries is recommended to assist the Cooperative for the coordination with the Meteorological Services. The both parties require collaboration for instructing fishermen not to approach the jetty in high wave seas.

⑥ Establishment of fish transaction

Transactions of fish might be carried out not only in the fish processing facilities but on the jetty. The Cooperative is recommended to demonstrate its initiative for establishing the rules of fish transactions to be conducted at the sale counter in the fish processing facilities. The Cooperative is also recommended to formulate the system that the Cooperative buys all the fish from the fishermen, who are refunded by the Cooperative according to selling amount of fish catch. The formulation of the rules of transactions is expected to enhance activities of quality control of fish to supply fresh fish to consumers.

⑦ Promotion of ice use

Fishermen supply fresh fish to not only the domestic market but foreign tourists and local visitors on Fish Friday. The situation requires the quality of fresh fish to satisfy these tourists and use of ice for fishing and fish distribution should be promoted by the Cooperative for fishermen to increase income by improvement of fish quality and to decrease volume of post-harvest loss.

⑧ Monitoring of beach

The sand beach at Anse la Raye is supposed to be slightly eroded. The beach just in front of the fisheries facilities might be scoured by high waves due to short distance from the shoreline in hurricanes. For properly protecting the fisheries facilities along the shoreline, regular monitoring of the beach configuration should be conducted and some shore protection facilities should be installed, if necessary.

⑨ Maintenance of the jetty

Open mouths of the jetty, which are designed for releasing uplift pressure by waves, are usually covered with blocks of greenheart timber for traffic on the jetty. In high seas they should be removed from the positions. Even if they are flown away, however, they will be purchased from the local market.

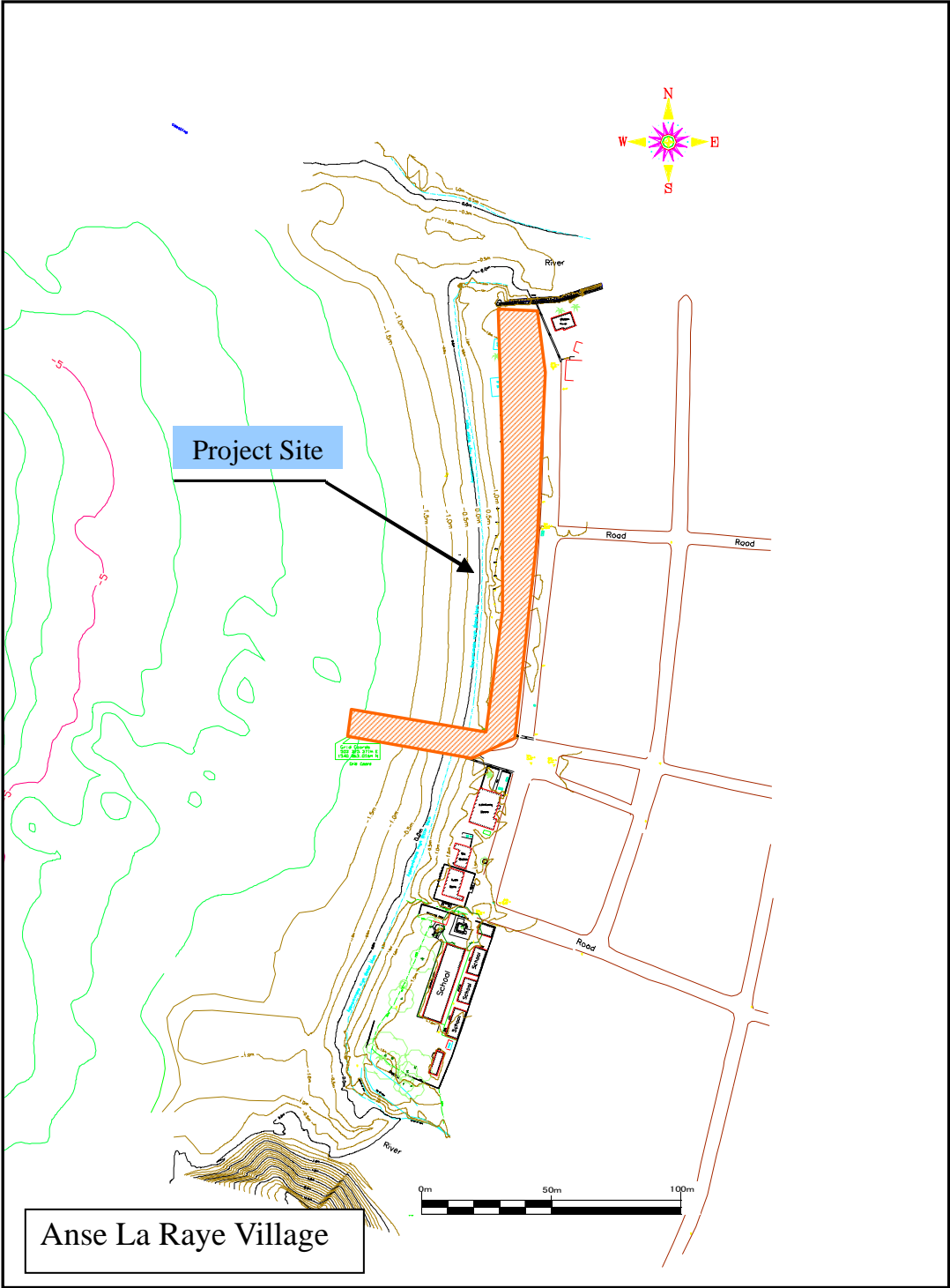
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Location Map



Location of Project Site



Perspective



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Abbreviation

CIDA	Canadian International Development Agency
COD	Chemical Oxygen Demand
CUBiC	Caribbean Uniform Building Code
DCA	Development Control Authority
DO	Dissolved Oxygen
EEZ	Exclusive Economic Zone
EIA	Environment Impact Assessment
EIS	Environment Impact Statement
E/N	Exchange of Notes
FAO	Food and Agriculture Organization of the United Nations
FRP	Fiber Reinforced Plastic
GDI	Gross Domestic Income
GDP	Gross Domestic Product
LUCELEC	Saint Lucia Electricity Services Ltd.
NEC	National Economic Council
OECS	Organization of Eastern Caribbean States
SIS	Social Impact Statement
SLFMC	Saint Lucia Fish Marketing Corporation Ltd.
UNDESA	United Nations Department of Economic and Social Affairs
V/C	Village Council
WASCO	Water & Sewerage Company Inc.

Chapter 1 Background of the Project

Chapter 1 Background of the Project

1-1 Background of the Request

The main industry of Saint Lucia is the agriculture representing Banana export, Tourism and Fishery. Especially, the agriculture which 80 % of employed population is engaged suffers its reduced production of Banana due to the international market gyration and natural calamity like recent hurricane in addition to the abrogation of preferential system by UK which has been main export market. Therefore the diversification of industry centering on promotion of tourism becomes the important issue.

In fishery industry of Saint Lucia, the number of registered fishermen is 2,311 persons and the number of registered fishing boats is 690 boats (2006). Yearly fish catch is 1,440 ton (2006) however, it is not satisfied with the domestic demand and the necessary quantity is depended on the import. For solving this, the Government of Saint Lucia is trying to increase the volume of fish catch by the development of artisanal fishery and decrease the import of fishery products establishing 8 Years Plan for Fishery Development. And as the specific measure for this, the Government is putting operation of the improvement of fishery facilities concerning fish landing, processing, distribution and etc., enforcement of fishermen's organization and improving fishing technique of artisanal fishermen.

In west coast of the island where Anse La Raye is located, small scale fishery targets to catch many kinds of small pelagic fish and coastal bottom fish and the number of fisherman is 119 persons and the registered fishing boat is 24 boats.

It is located from 20km from the Capital City, Castries and it takes about 30 minutes by car. The potentiality as a supply base of fishery products to urban area is very likely however, the functions are decreased in entire facilities due to the aging and the landing volume there that was only 19 ton in 2000. Especially, the jetty which was constructed as the jetty for ferry boats therefore, it is improper for fishing boats in its height from the water what is worse, the damage by aging makes trouble for landing and mooring. And concerning the land facilities like ice making machine and refrigerator are very much damaged by aging since they were installed in 20 years ago and these become the causes of after harvest losses.

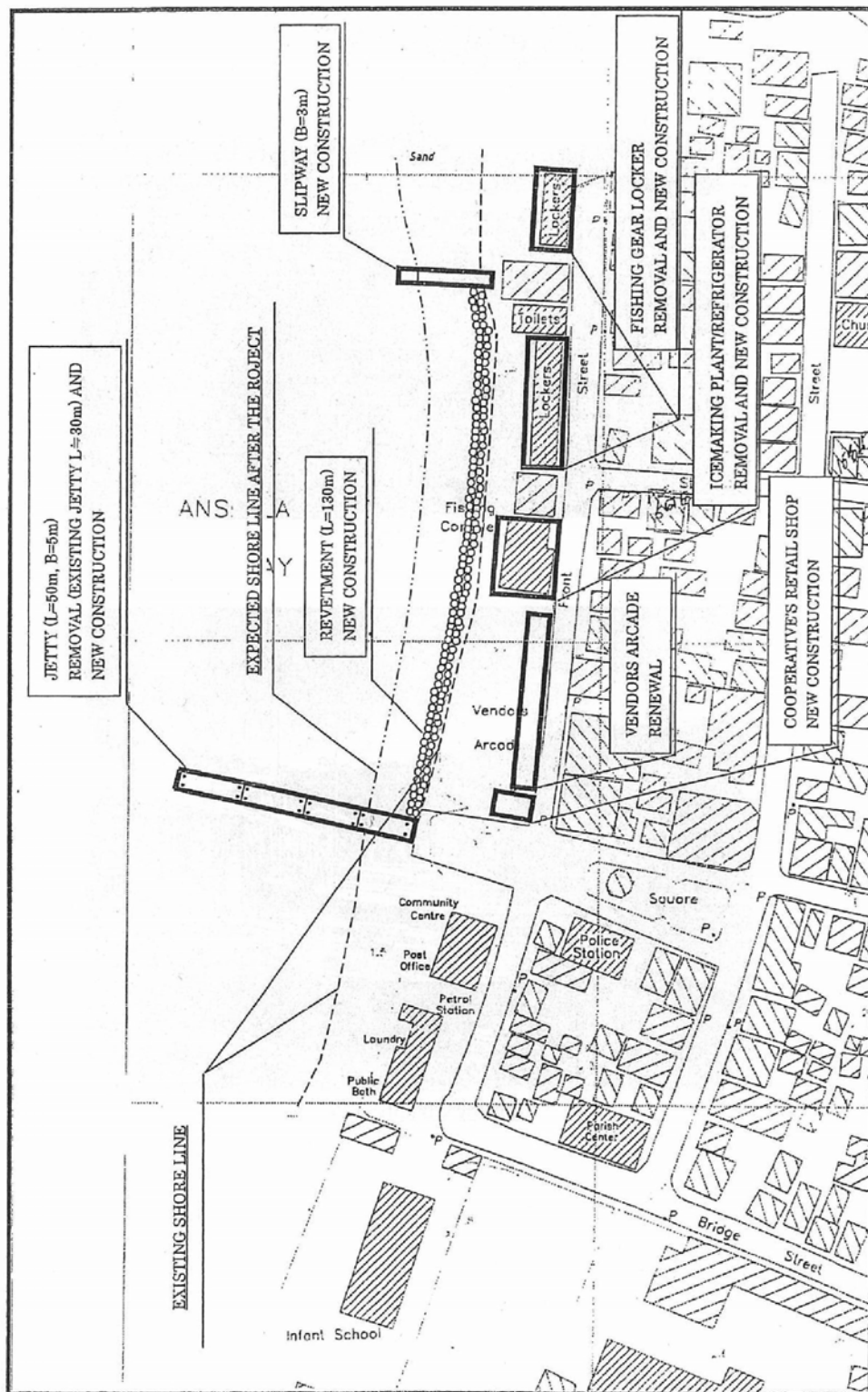
For the purpose of development of fishery activities by artisanal fishermen in Anse La Raye and near by, Grant Aid Cooperation for necessary development in order to secure safe and effective fishery activities in the fish landing facilities were requested to the Government of Japan.

1-2 Component of the Request

The Government of Saint Lucia has requested for the Grant Aid for Anse La Raye Fish Landing Facility Development Project in August 2004 to the Government of Japan. The Component of the Request is as shown in Table 1-2(1) and the floor plan of the requested plan is shown in Figure 1-2(1).

Table 1-2(1) Components Requested by the Government of Saint Lucia

Contents of Request from Governemnt of St. Lucia		
Items	Specifications	Quantity
1. Civil Works		
1) Jetty & accessories	Trestle type jetty . Steel pipe piled structure with concrete decks for upper structure. Overall length:50m & width: :5meters This includes removal work of the existing jetty structure. The piled understructure must have anti corrosive treatment.	1lot
2) Slipway	To be structured with piles. Approx. length: 14meters with 3-meter width	1lot
3) Revetment	To be structured with reveted rubble stones for an overall length of 130 meters	1lot
4) Supply pipe for fuel, water		
2. Building works		
1) Fishing gear lockers	R.C. Blocks construction	30units Total in 2 lots
2) Drainage	Storm drain and septic treatment work	
3) Fish Processisng Facility	Fish processing complex (new construction) for housing ice making/storage and refrigeration plant. Building with R.C. Block construction Total area:240m2	1lot
① Ice making machine	Ice making capacity: 1ton/day(flake ice)	1lot
② Ice storeroom	Ice storage capacity: 2ton	1lot
③ Refrigerator	Refrigeration unit: $\pm 5^{\circ}\text{C}$ Complete with electrical control device, water supply piping network	1lot
4) Fish sales counter	Construction of small building to house cooperative retail shop (on the G/floor) and fishermen training room. Area in total: 140m2 R.C. Block construction	1lot
5) Tackle shop		
6) Fishermen's training room		
7) Workshop		
8) Venders' arcade	Renewal (refurbishing) of existing venders' arcade. This includes renewal of vending booths, plumbing and so fourth.	1lot
9) Pavement	Other incidental exterior works: -Site premise pavement - Fencing/illumination -Car parking lot - Drainage/storm drain and septic treatment work -Jetty accessories such as fenders/ bollards and supply pipes and outlets for oil, fuel and water	1lot
10) Fence		
11) Lighting		
12) Parking lot		



PROJECT FOR ANSE LA RAYE FISH LANDING FACILITY DEVELOPMENT

Figure 1-2(1) Layout Plan Requested by the Government of Saint Lucia

The Government of Saint Lucia is planning the management system of the Project as follows.

(1) Management System

1) Operation and Management Organization for Fish Landing Facilities

It is to consign to existing Fishery Cooperative (Anse La Raye Fishery Cooperative) under the supervision and support by Department of Fisheries, although it will be owned by Department of Fisheries, Ministry of Agriculture, Lands, Fisheries and Forestry after the completion of this project. Department of Fisheries deems that Anse La Raye Fisheries Cooperative is also possible to be self sustainable since the Department of Fisheries has experienced the same in Choiseul and Soufriere Fishing Ports and found that they were both profitable. The Department of Fisheries believed that the maintenance and management is possible by the hand of educated persons of Fisheries Cooperative in the Ministry of Labor Cooperative Union which is the governmental organization in addition to their confidence in their past experiences.

2) Maintenance and Management System by Fisheries Cooperative

The maintenance and management in Anse La Raye Fisheries Cooperative is executed under the supervision, support and instruction by Department of Fisheries and the Ministry of Labor Cooperative Union. The cooperative membership is now 81 however, in the future, registered fishermen 119 in Anse La Raye district, 94 in Canaries district, 1 in Roseau district and 2 in Cal De Sac district totaling 216 fishermen will be intended to be the members. The management will be executed by 5 commissioners including cooperative president. In this project the fisheries cooperative is going to employ managers, technical assistances for ice making machine and so forth. However, a chief engineer of ice making machine is taken change by an engineer of ice making machine and refrigerator in SLFMC (St. Lucia Fish Marketing Corporation) under the training of Department of Fisheries and bring up assistant engineer employed by the cooperative.

The necessary number of staff and the name of department for maintenance and management in this project are shown below.

Table 1-2(2) Necessary Staff in the Project

Duty	Number
Management representative and accounting	1
Ice manufacture sale chief person	1
Clerk	1
Security guard	1
Cleaning crew: 2 persons x 0.5 days.	2

1-3 Environmental and Social Consideration

(1) The necessity of environmental procedure

All that performs the act of development in Saint Lucia has been obliged to submit the report executing EIA (Environmental Impact Assessment) by law (Physical Planning and Development Act, 2001). In this project also, the person who acts the development i.e. Department of Fisheries of Saint Lucia shall execute EIA. As shown in Table 1-3(1), the Department of Fisheries shall submit necessary documents to Development Control Authority (DCA) after the submission of the full set of the documents for the detailed design by the Japanese Consultant to the Department of Fisheries. This procedure is called Preliminary Planning Approval. DCA will show TOR of EIS/SIS to Department of Fisheries and the Department of Fisheries shall submit the report after execution of the assessment. DCA will show additional TOR if necessary, and the Department of Fisheries will revise the report. The development permit is usually issued with collateral conditions within about 4 weeks after its application.

The procedures for “Full Planning Commission” shall be conducted in parallel with the procedures for “Preliminary Planning Approval” as shown in Table 1-3(1), the Department of Fisheries submits detailed design drawings to DCA, which the Consultant submits to the department of Fisheries at the time of detailed design stage. DCA will issue the permit for construction through the screenings of experts in the related government organizations. It usually takes about 4 weeks for the final permit.

The procedures for the above formality will be made within one month since the both procedures will be carried out in parallel.

Table 1-3(1) Procedures for EIA and Full Planning Commission

Preliminary Planning Approval		1st week	2nd week	3rd week	4th week	Application documents, etc.
1. Submission of Detailed Design Drawings to DOF	▽					*Detailed design drawings
2. Submission of Application to DCA by DOF						*3 copies of Project Proposal 1 copy of Facility Location Plan 10 copies of Conceptual Plan 1 copy of Survey Plan 1 copy of certificate of Land Ownership
3. Referral Agency make TOR of EIA to Applicant.			—			*TOR of EIS/SIS
4. Delivery of TOR to Applicant			▽			*TOR of EIS/SIS
5. Enforcement of EIA by Applicant				▽		*Report of EIA
6. Referral Agencies feedback additional TOR to Applicant.						*Additional TOR of EIA
7. Issue of Permission for construction works with comments						*Permission with comments
Full Planning Commission		1st week	2nd week	3rd week	4th week	Application documents, etc.
1. Submission of Detailed Design Drawings	▽					
2. Submission of D/D drawings to DCA		▽	—			*3 copies of Project Proposal 3 copies of Facility Location Plan 3 copies of Site Plan 3 copies of Building Drawings including Architectural, Structural, Electrical, Plumbing with septic tank&sewerage and Fire System
3. Screening of D/D drawings by Technical Committee of DCA				▽		*10 copies of Report of EIA
4. Issue of Approval of Construction Works by DCA					▽	*Approval of construction works

Chapter 2 Contents of the Project

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project

It is affirmed that the planning policy of the project and the current status of the site are not changed in this study.

The government of Saint Lucia agreed to change the title of the Project, “Anse La Raye Fish Landing Facility Development Project” to “the Project for Improvement of Fishery Infrastructure in Anse La Raye”.

2-2 Basic Design of the Requested Japanese Assistance

2-2-1 Design Policy

It is confirmed that the contents and design of facilities of the basic design study report are unnecessary to change. The design contents and dimension of the facilities for civil engineering works and architectural works and machine parts are not necessary to change in the Basic Design Study.

2-2-2 Basic Plan

Design criteria of Civil Works and Building Facilities follow the design and specification of Basic Design Study.

2-2-3 Basic Design Drawings

Figure 2-2-3(1) to Figure 2-2-3(16) show the basic design drawings of main facilities in the Basic Design Study Reports, and Table 2-2-3(1) shows the list of components of the Project.

Figure 2-2-3(1) Plan and Section of Jetty

Figure 2-2-3(2) Cross Section of Jetty

Figure 2-2-3(3) Details of Mooring Berth

Figure 2-2-3(4) Details of Approach

Figure 2-2-3(5) Floor Plan of Fishery Complex (Ground Floor)

Figure 2-2-3(6) Floor Plan of Fishery Complex (First Floor)

Figure 2-2-3(7) Floor Plan of Fishery Complex (Basement Floor)

Figure 2-2-3(8) Section of Fishery Complex-1

Figure 2-2-3(9) Section of Fishery Complex-2

Figure 2-2-3(10) Elevation of Fishery Complex

Figure 2-2-3(11) Plan of Gear Lockers-1

Figure 2-2-3(12) Elevation & Section of Gear Lockers-1

Figure 2-2-3(13) Plan of Gear Lockers-2

Figure 2-2-3(14) Elevation & Section of Gear Lockers-2

Figure 2-2-3(15) Repair of Workshop

Figure 2-2-3(16) Repair of Venders' Arcade

Table 2-2-3(1) Contents of the Project

Scope of Assistance in Grant Aid		
Items	Specifications	Quantity
1. Civil Works		
1) Jetty & accessories	Jetty of steel pipe piles *Length:48m, Width:5.6m *Berth length: 27m x 2 *Approach: 21m, Width:4m *Piles protected with anti-corrosion	1 unit
2) Boat Landing Facility	Winch and portable slides	1 unit
2. Building Works		
1) Fishing gear lockers	R.C. Blocks construction Floor area: 128.1sq. m & 132.3 sq. m	2 buildings of 30 lockers
2) Drainage	Septic tank	1 unit
3) Fish Complex	Fishery Complex for rooms of: – Ice making & storage plants – Fishermen's Hall – Tackle shop – Office of Co-op – Office of Dept. of Fisheries * Total floor area : 341.4 sq. m	A building of 341 sq. m
① Ice making machine	Capacity: 1 ton/day	1 unit
② Ice storeroom	Storage capacity:2 ton	1 unit
③ Insulated ice box	Insulated ice box of 100 liters	2 units
④ Equipment of retailing fish	Tables and sinks of stainless steel	2 units
4) Workshop	Repair of roofing (area:199 sq. m) Repaint of steel frames, Electricity	1 unit
5) Venders' arcade	Repair of floor concrete & water supply facility	1 unit

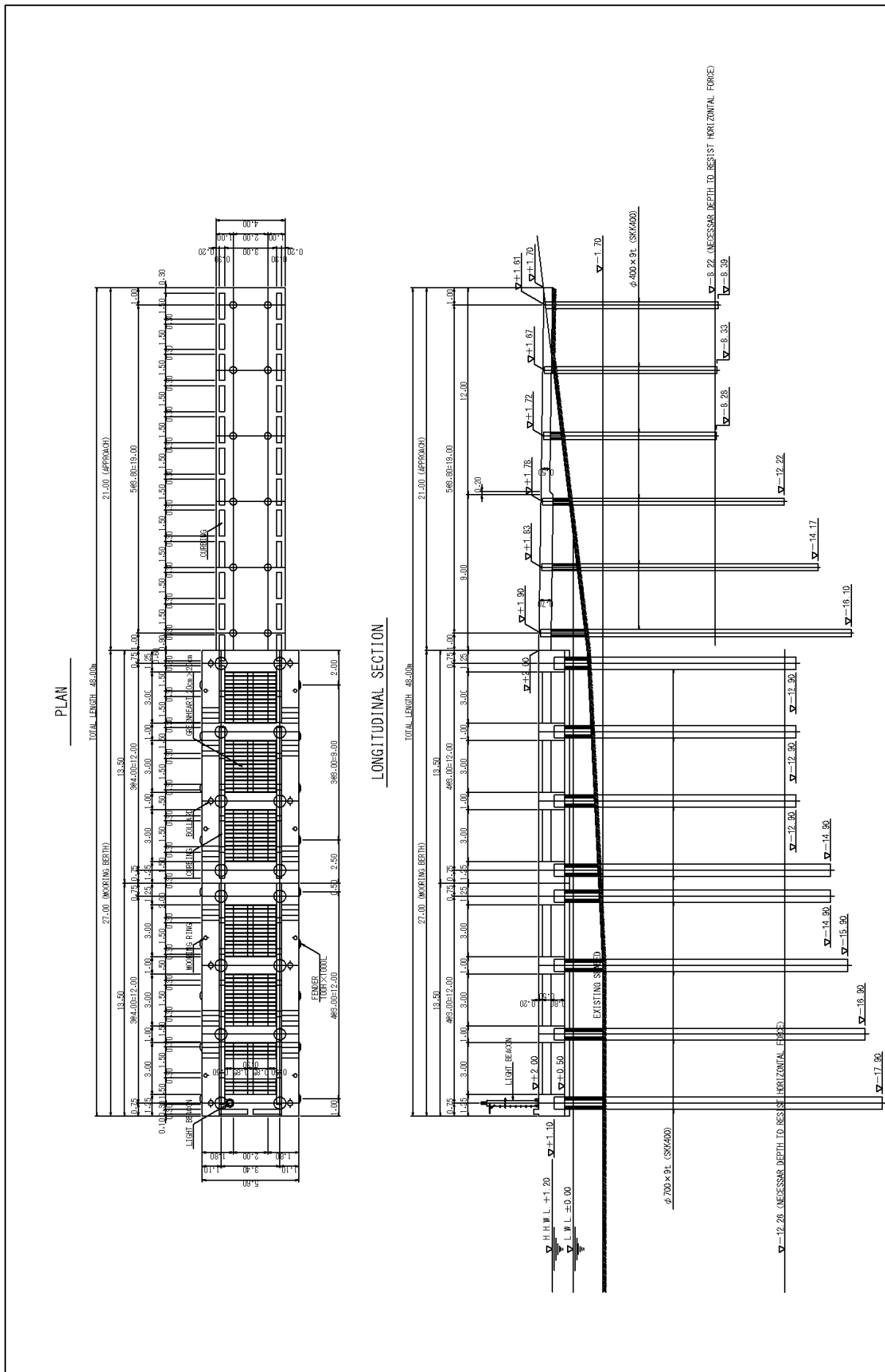
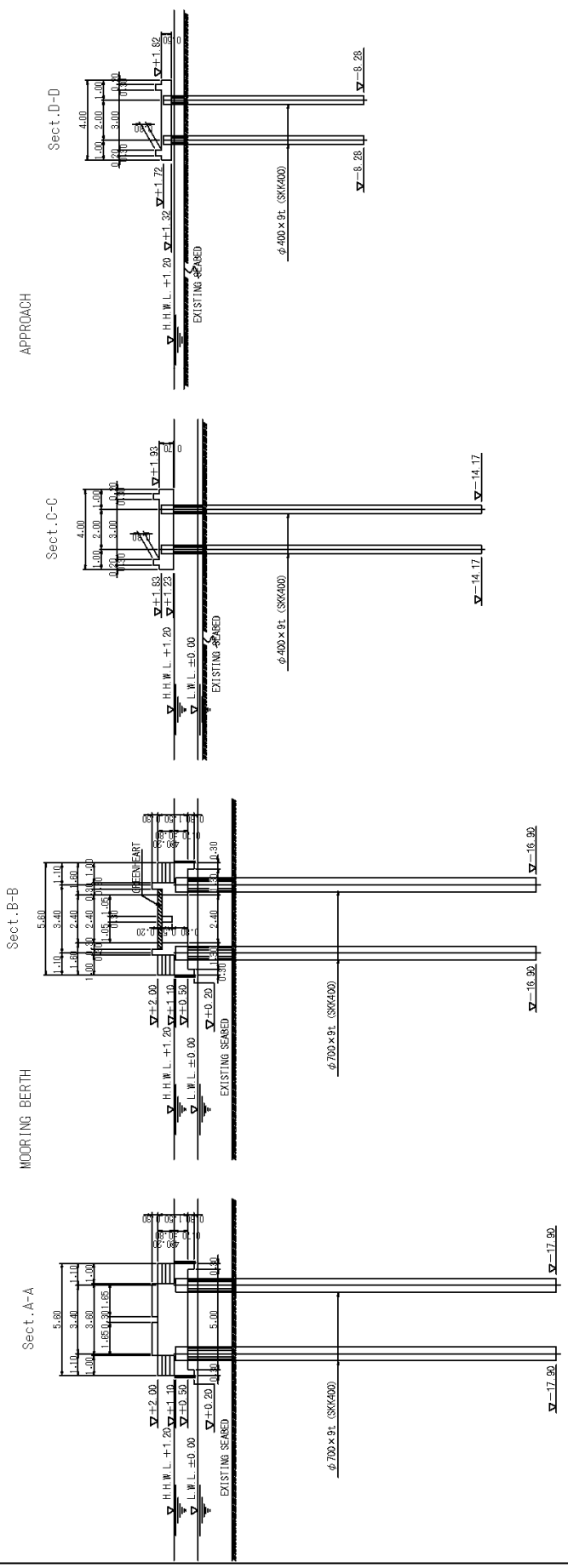


Figure 2-2-3(1) Plan and Section of Jetty

TYPICAL CROSS SECTION



LOCATIONS OF SECTIONS

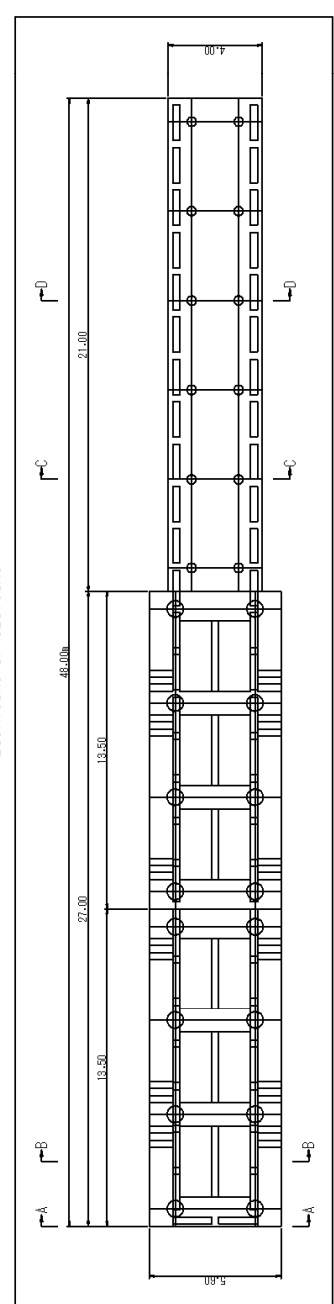


Figure 2-2-3(2) Cross Section of Jetty

DETAILS OF MOORING BERTH (1)

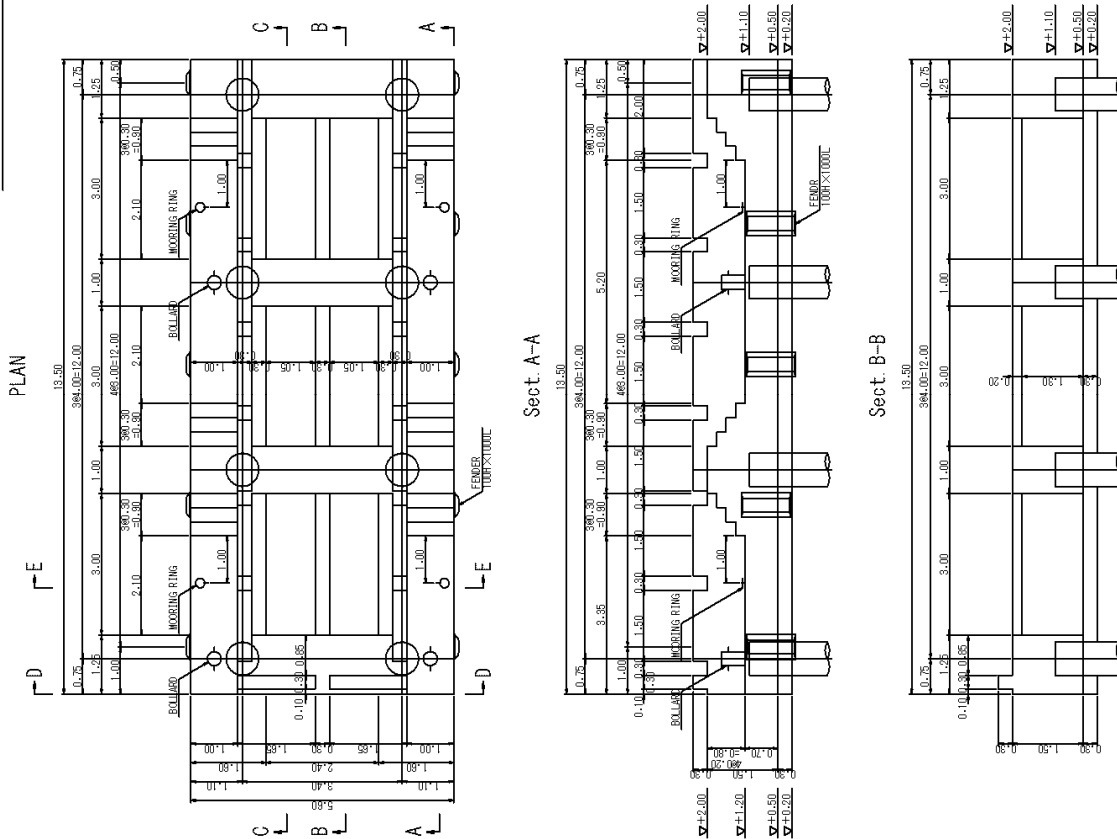


Figure 2-2-3(3) Details of Mooring Berth

DETAILS OF MOORING BERTH (2)

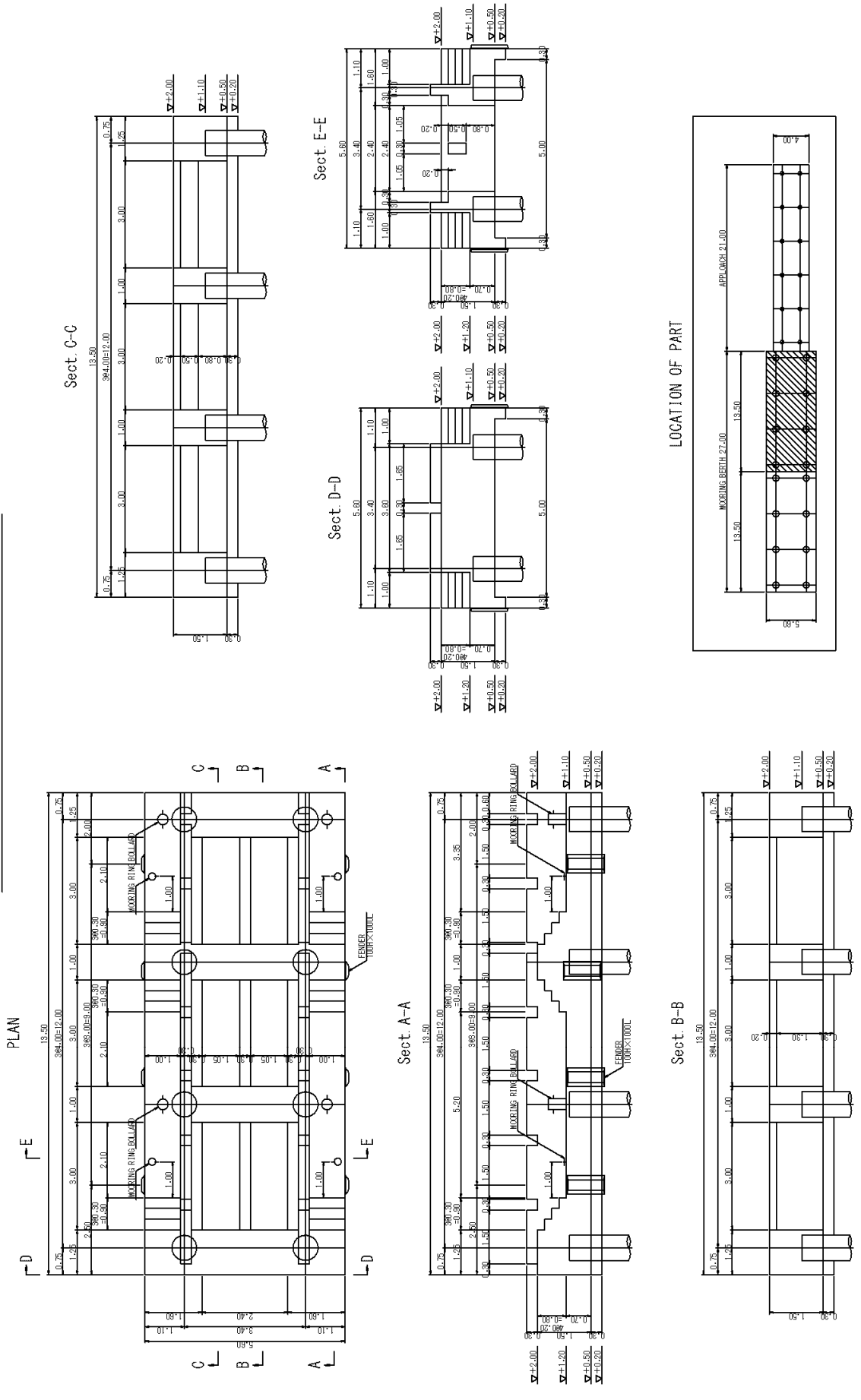
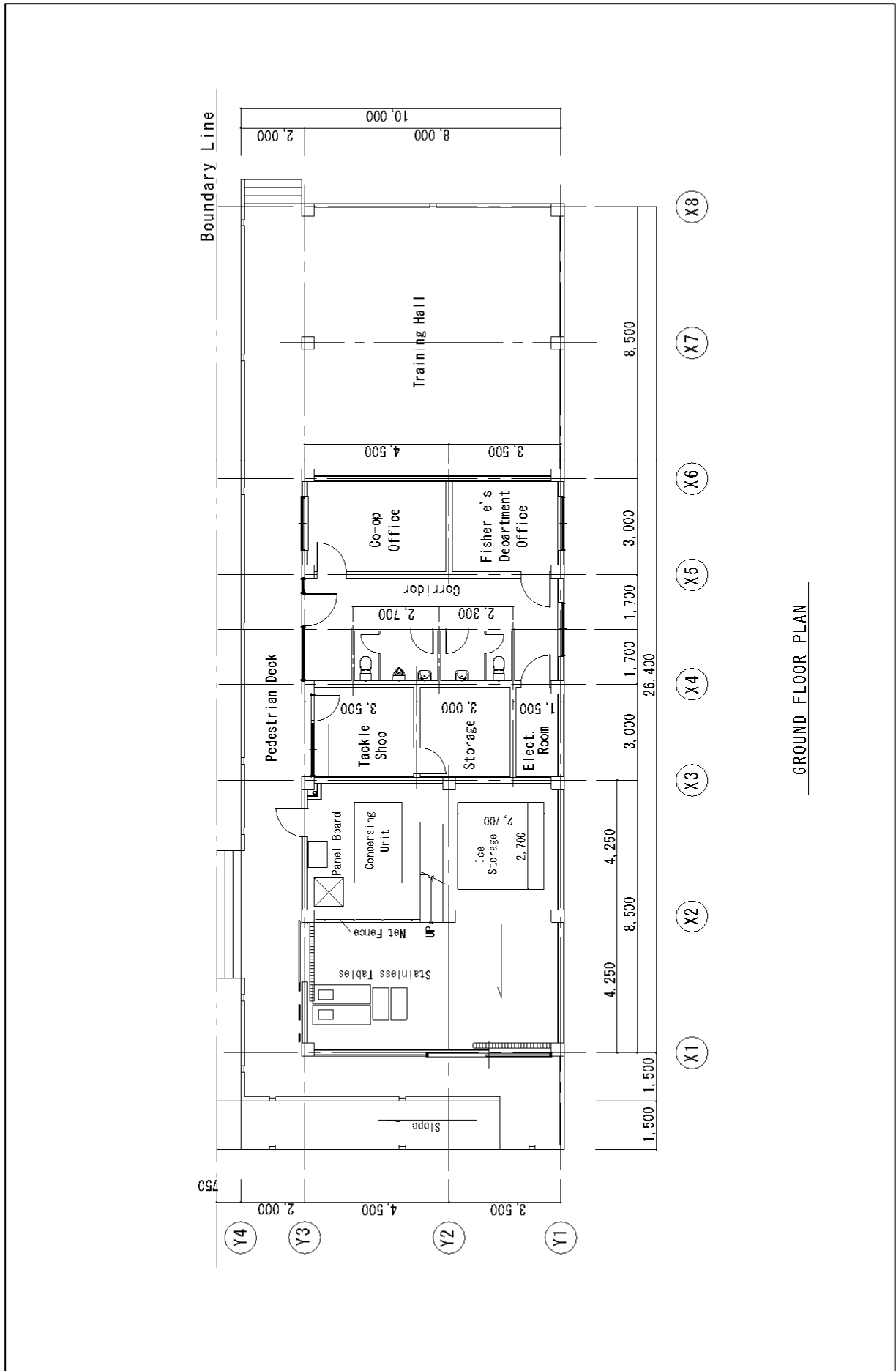


Figure 2-2-3(4) Details of Approach



GROUND FLOOR PLAN

Figure 2-2-3(5) Floor Plan of Fishery Complex (Ground Floor)

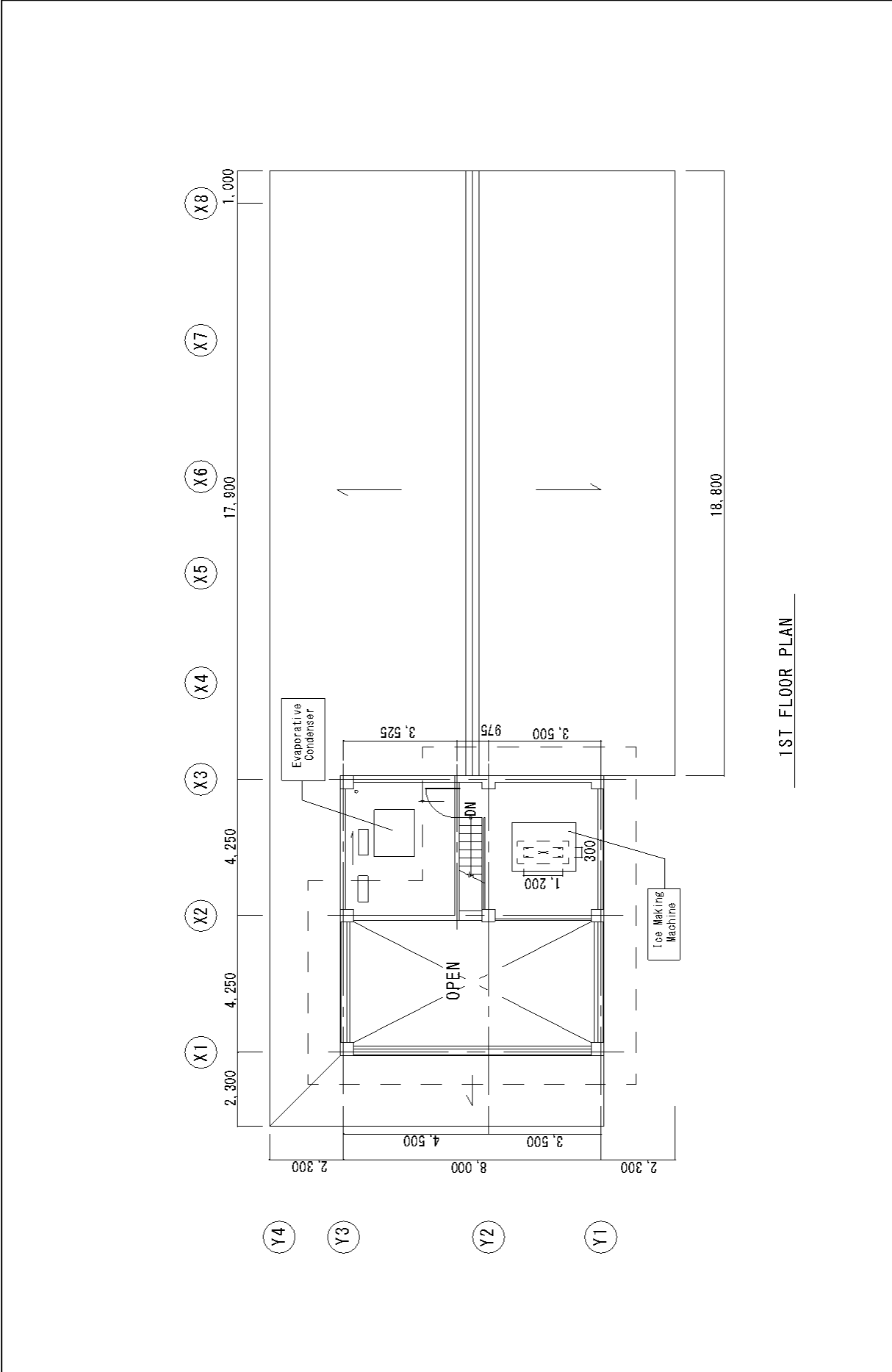


Figure 2-2-3(6) Floor Plan of Fishery Complex (First Floor)

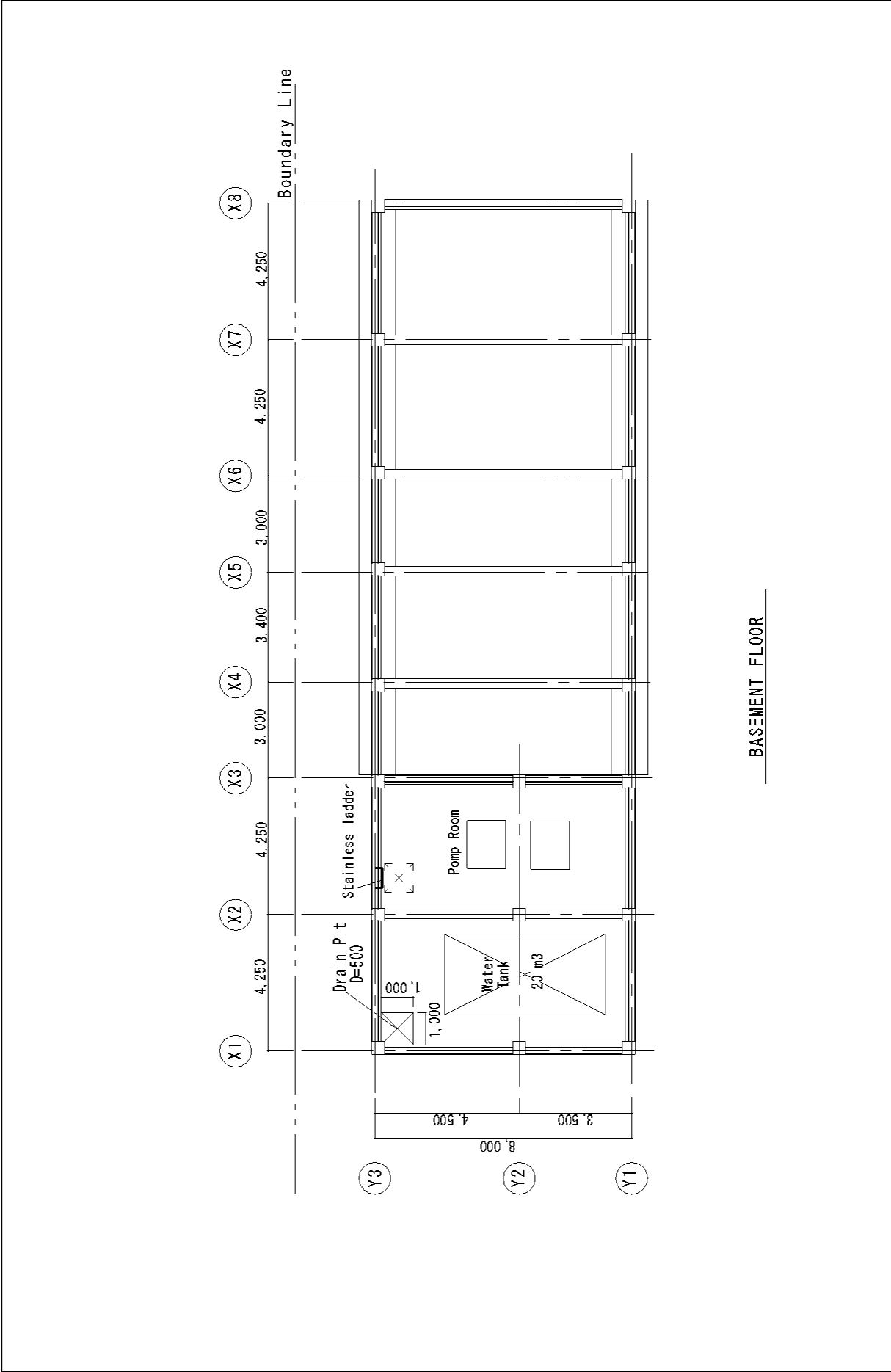


Figure 2-2-3(7) Floor Plan of Fishery Complex (Basement Floor)

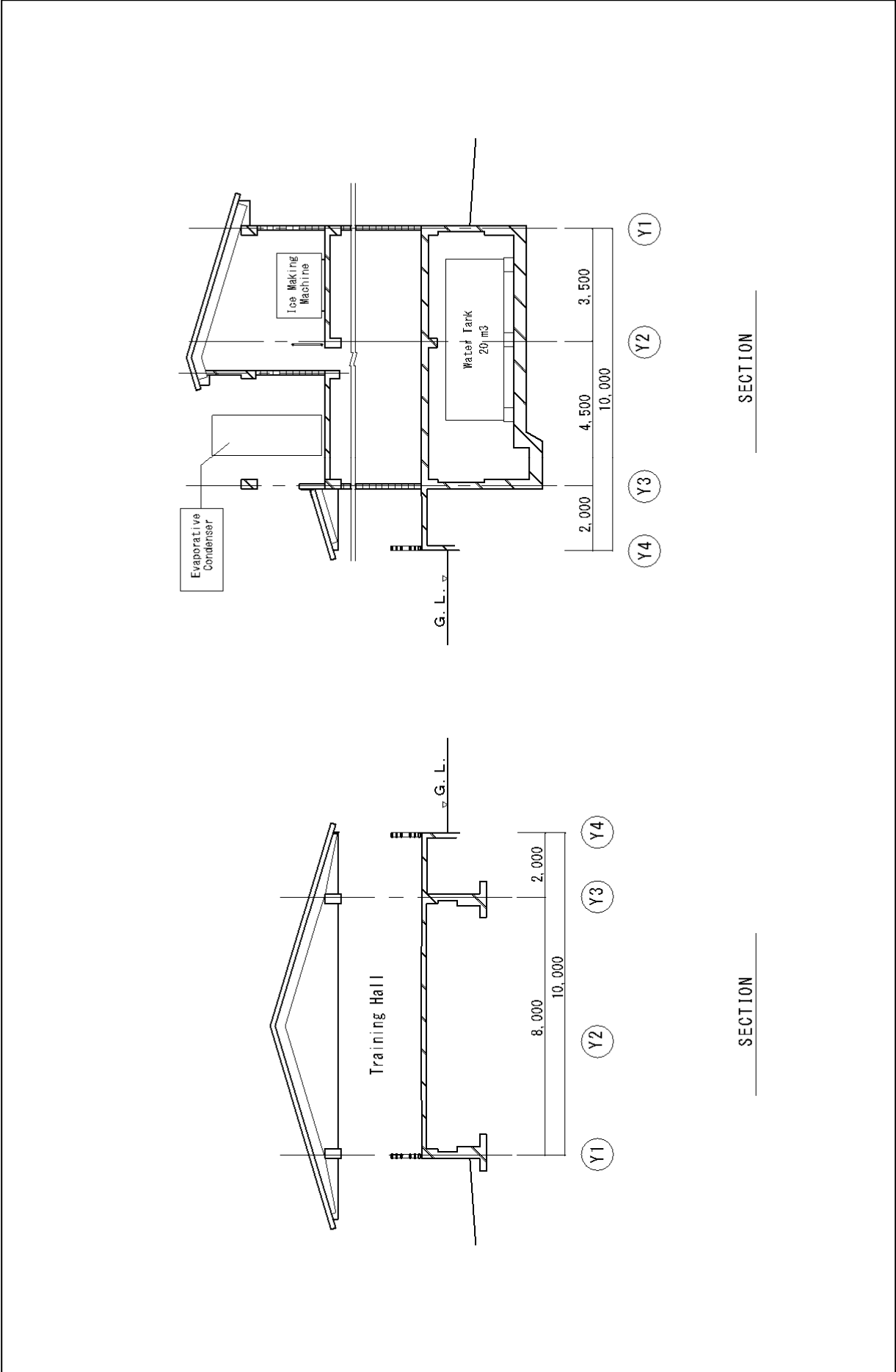


Figure 2-2-3(8) Section of Fishery Complex-1

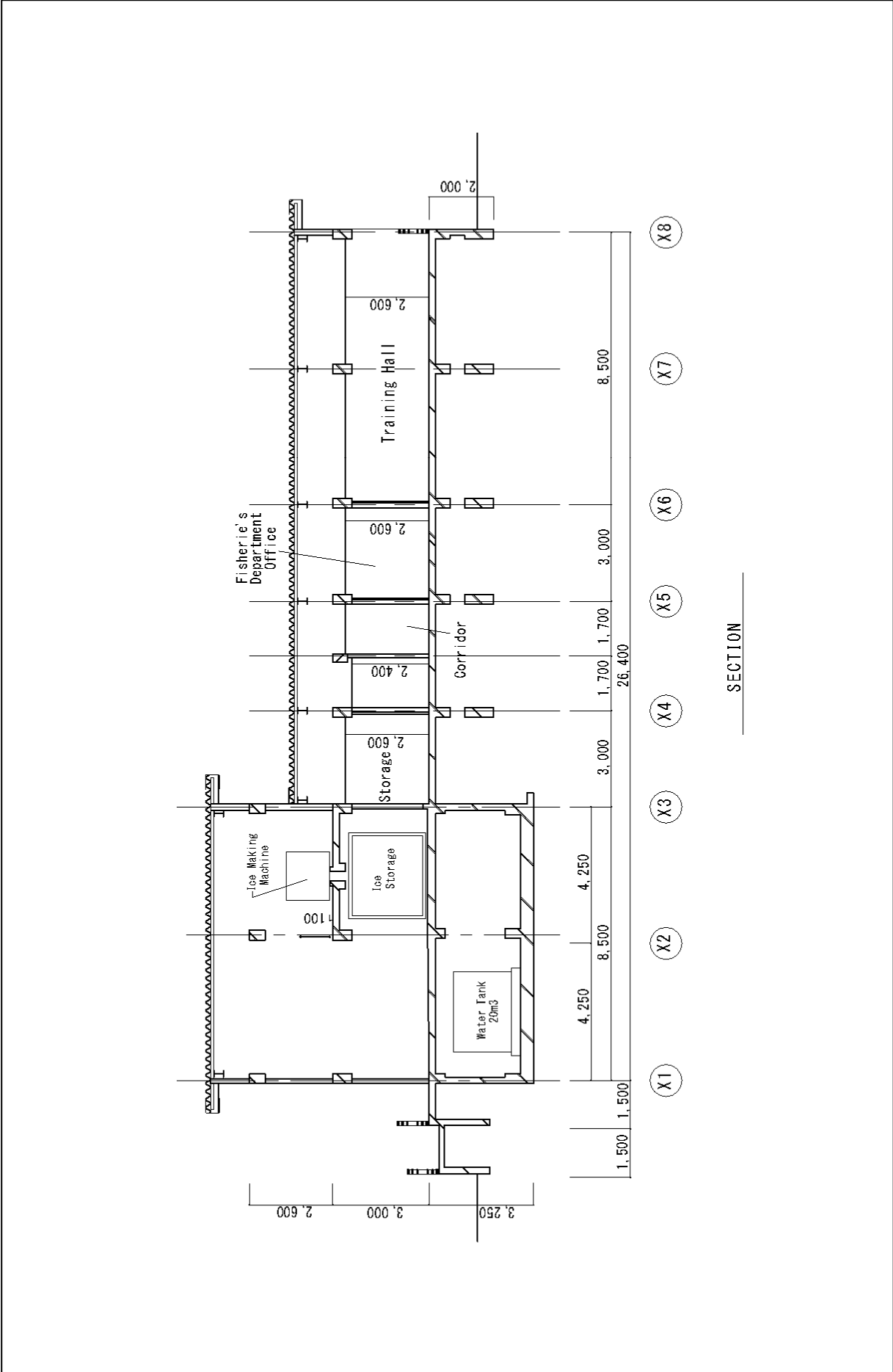


Figure 2-2-3(9) Section of Fishery Complex-2

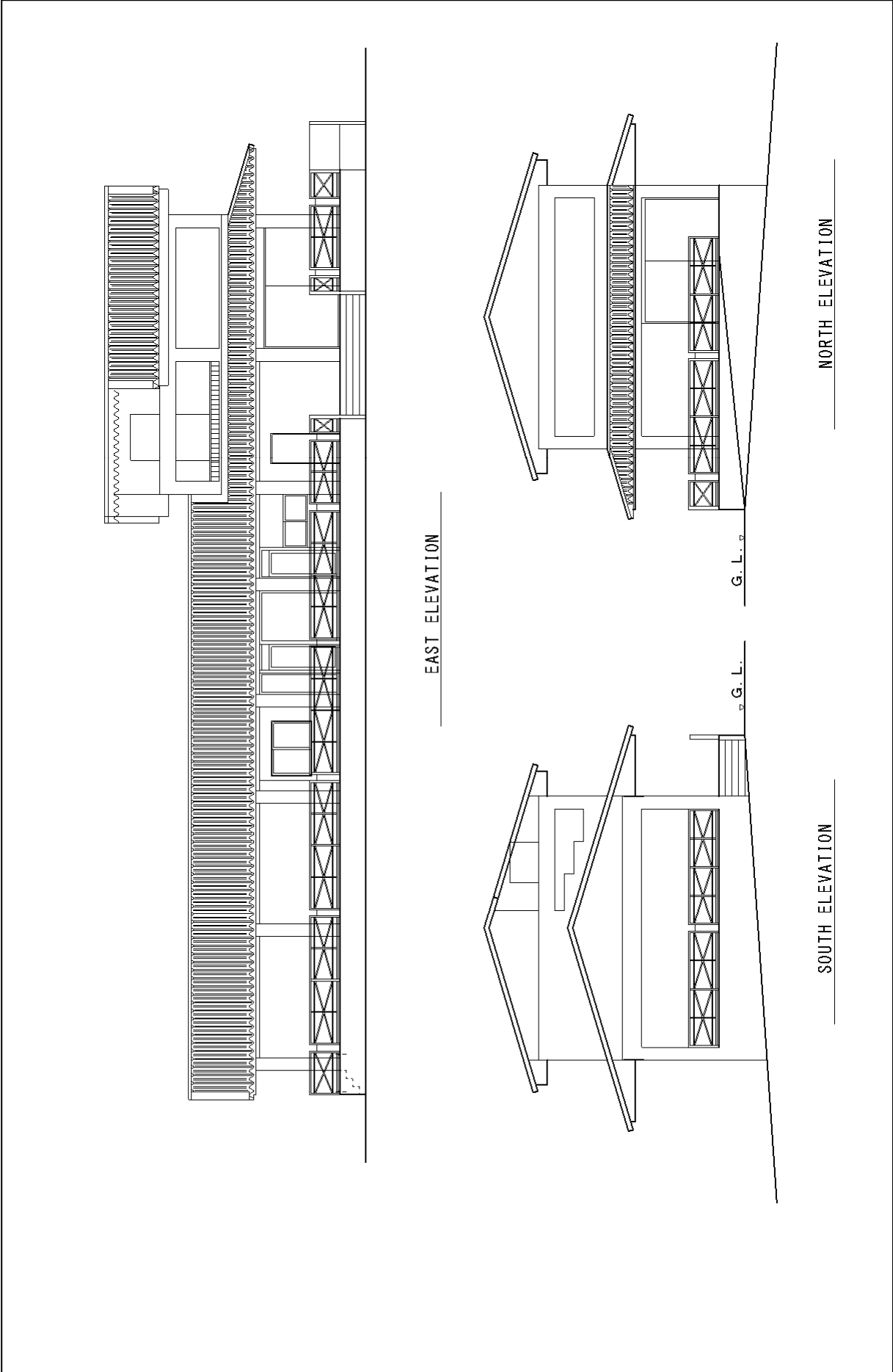


Figure 2-2-3(10) Elevation of Fishery Complex

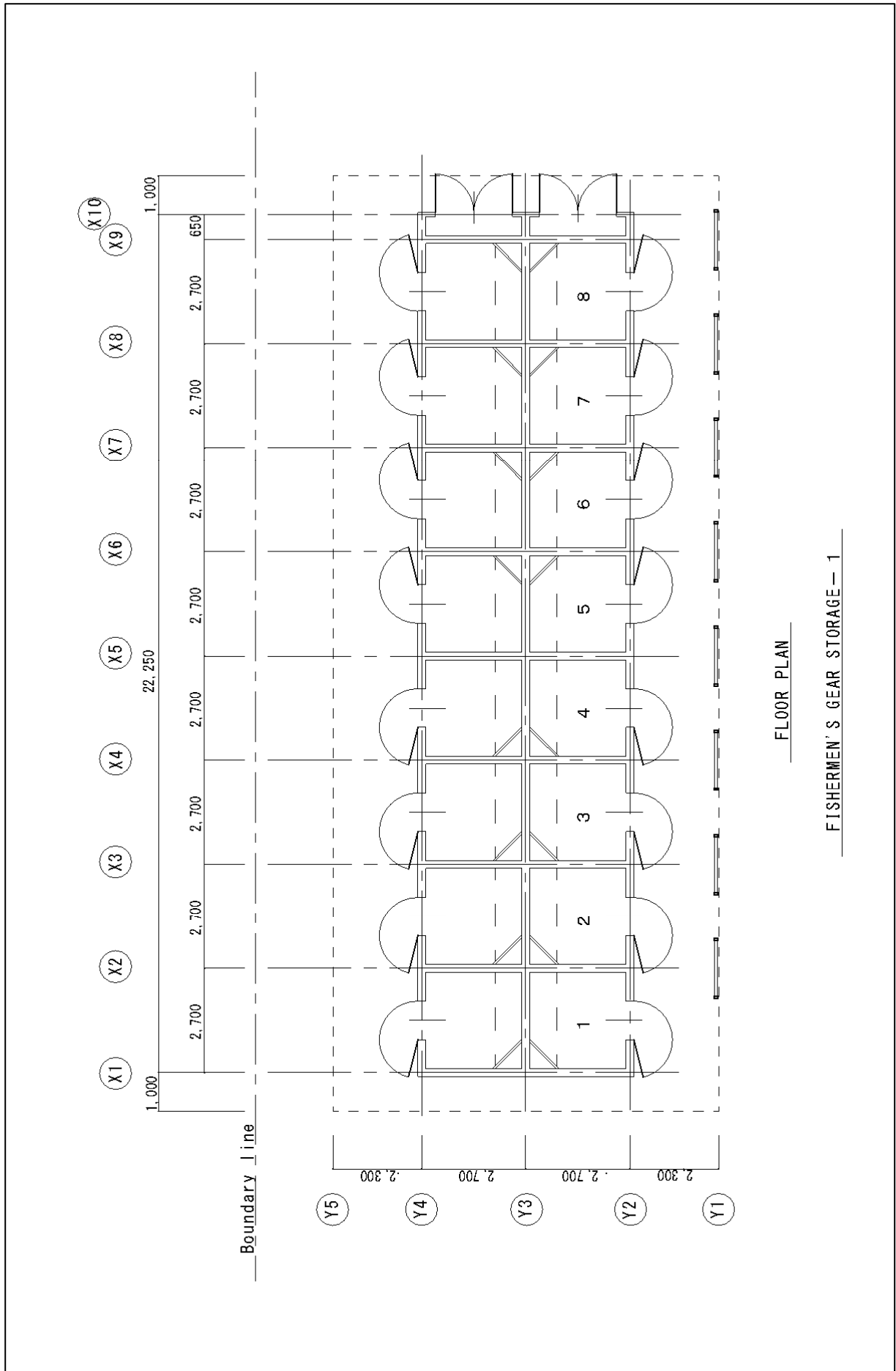


Figure 2-2-3(11) Plan of Gear Lockers-1

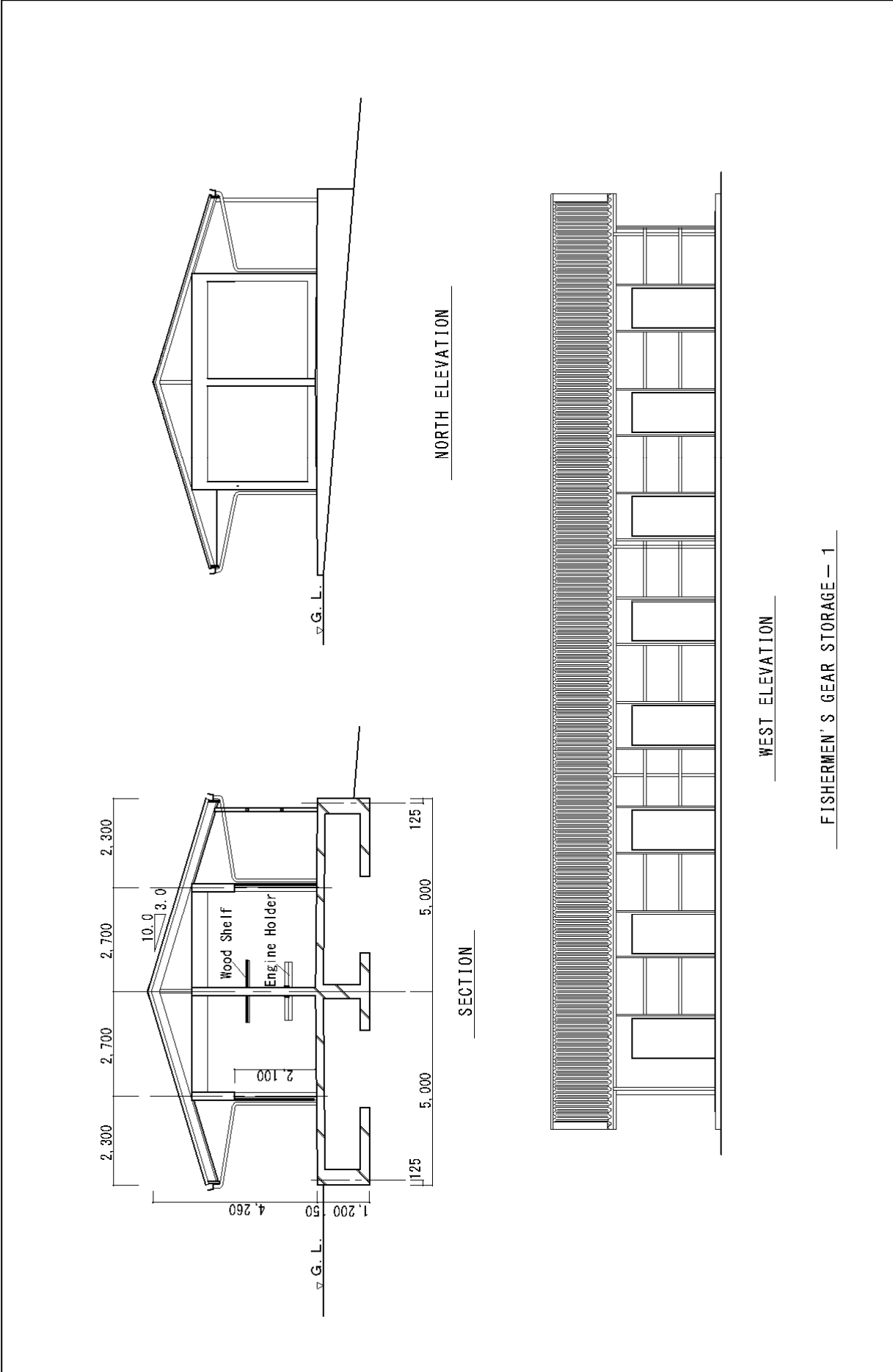


Figure 2-2-3(12) Elevation & Section of Gear Lockers-1

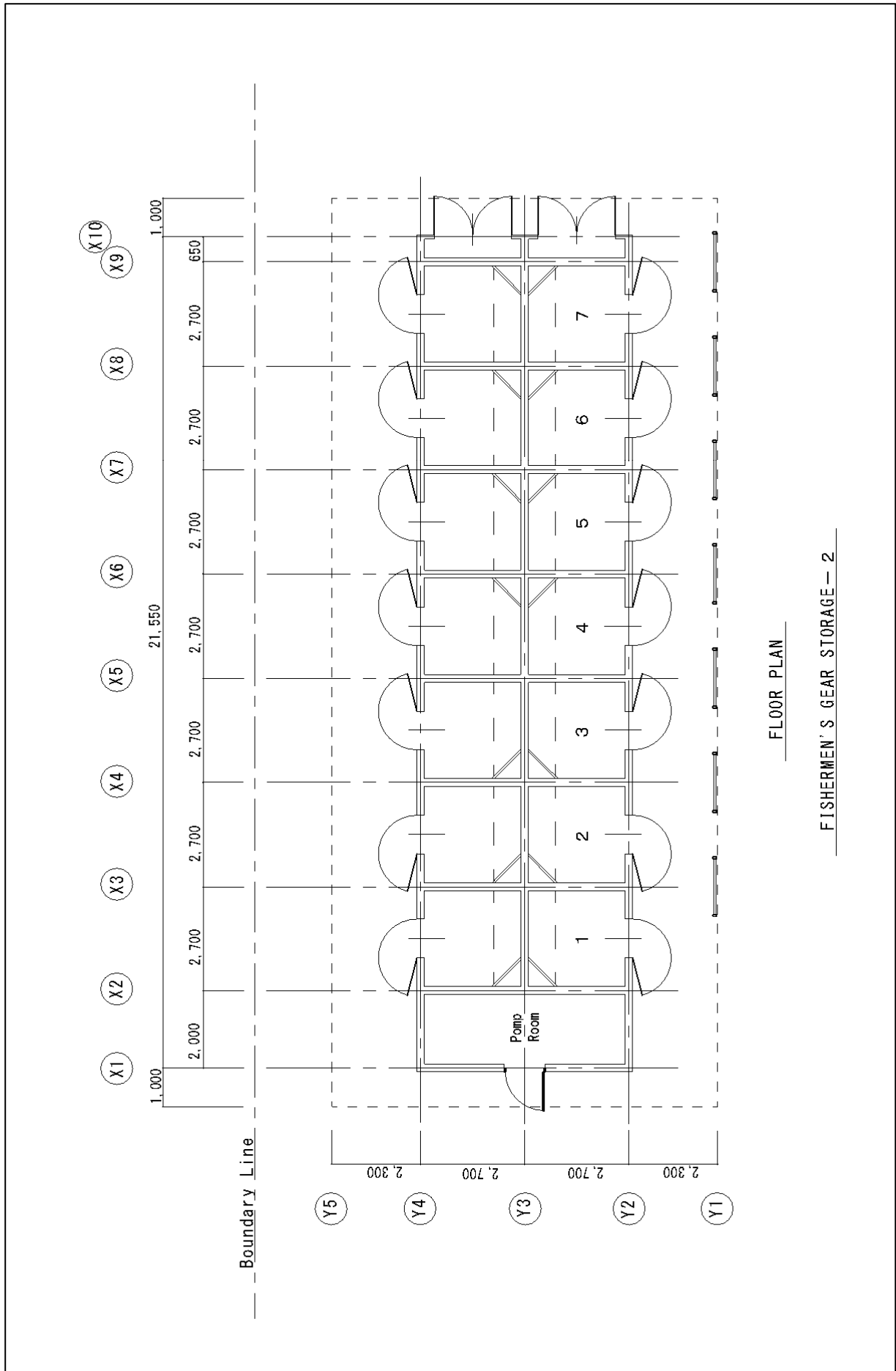
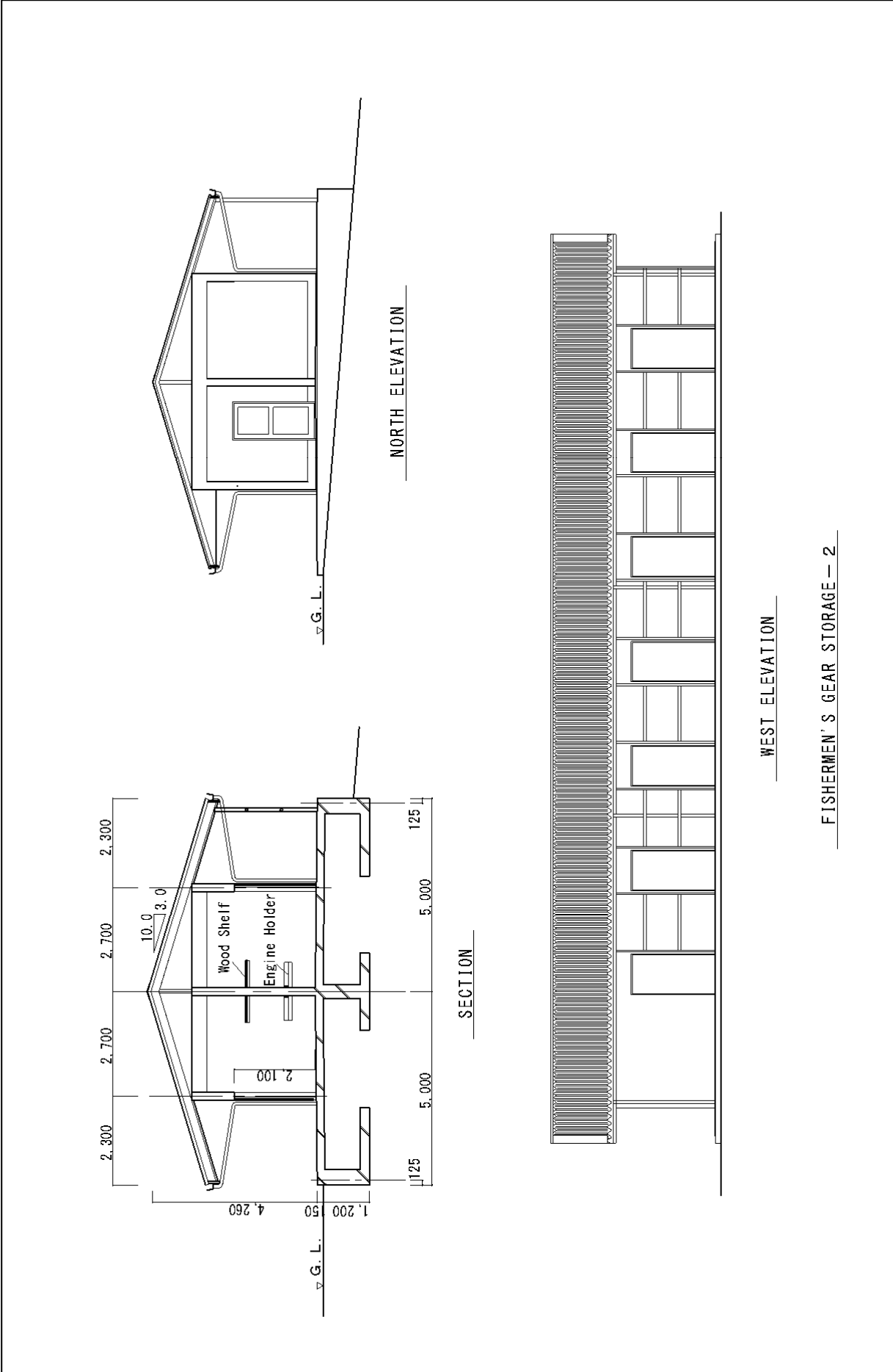
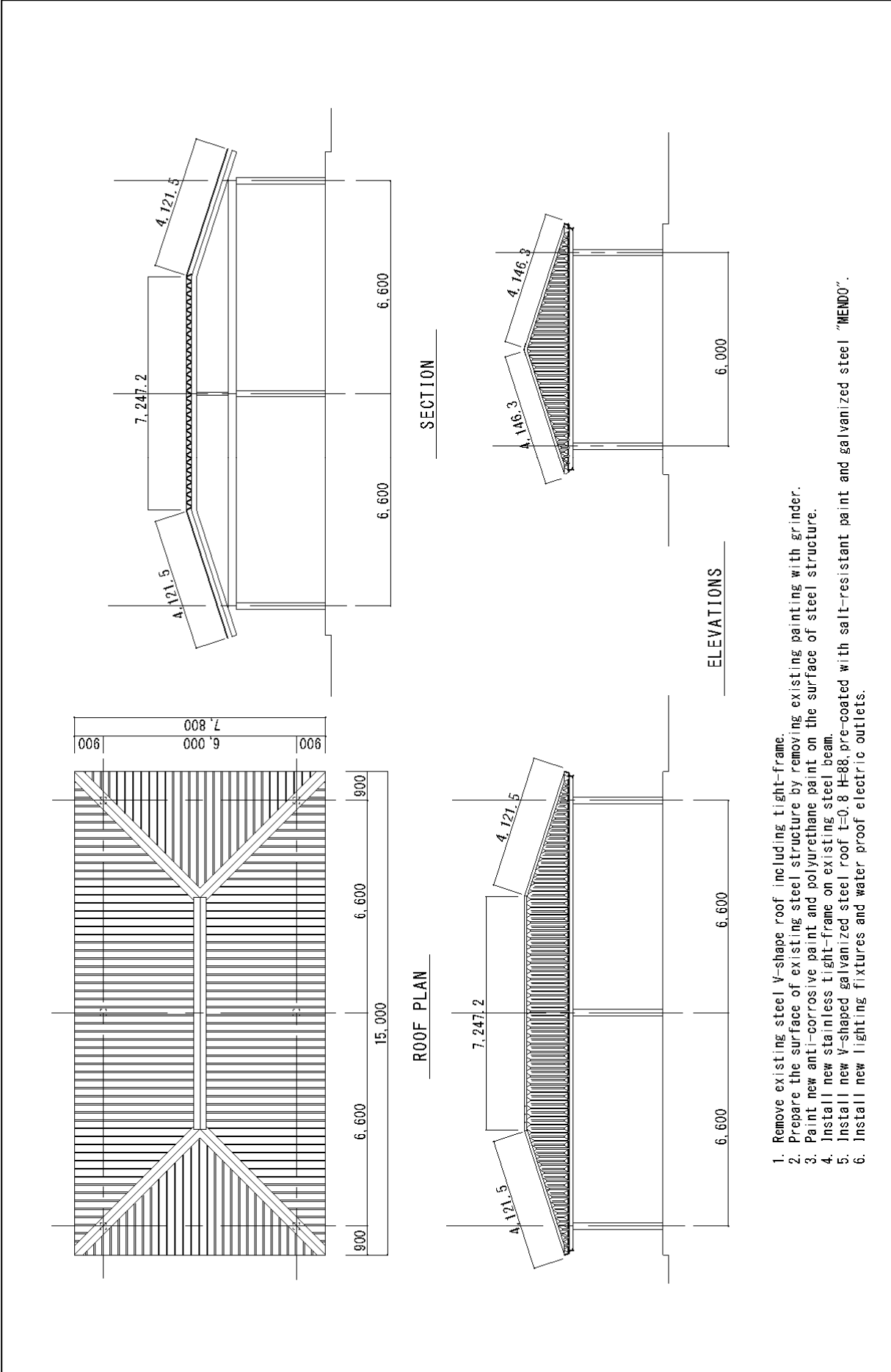


Figure 2-2-3(13) Plan of Gear Lockers-2



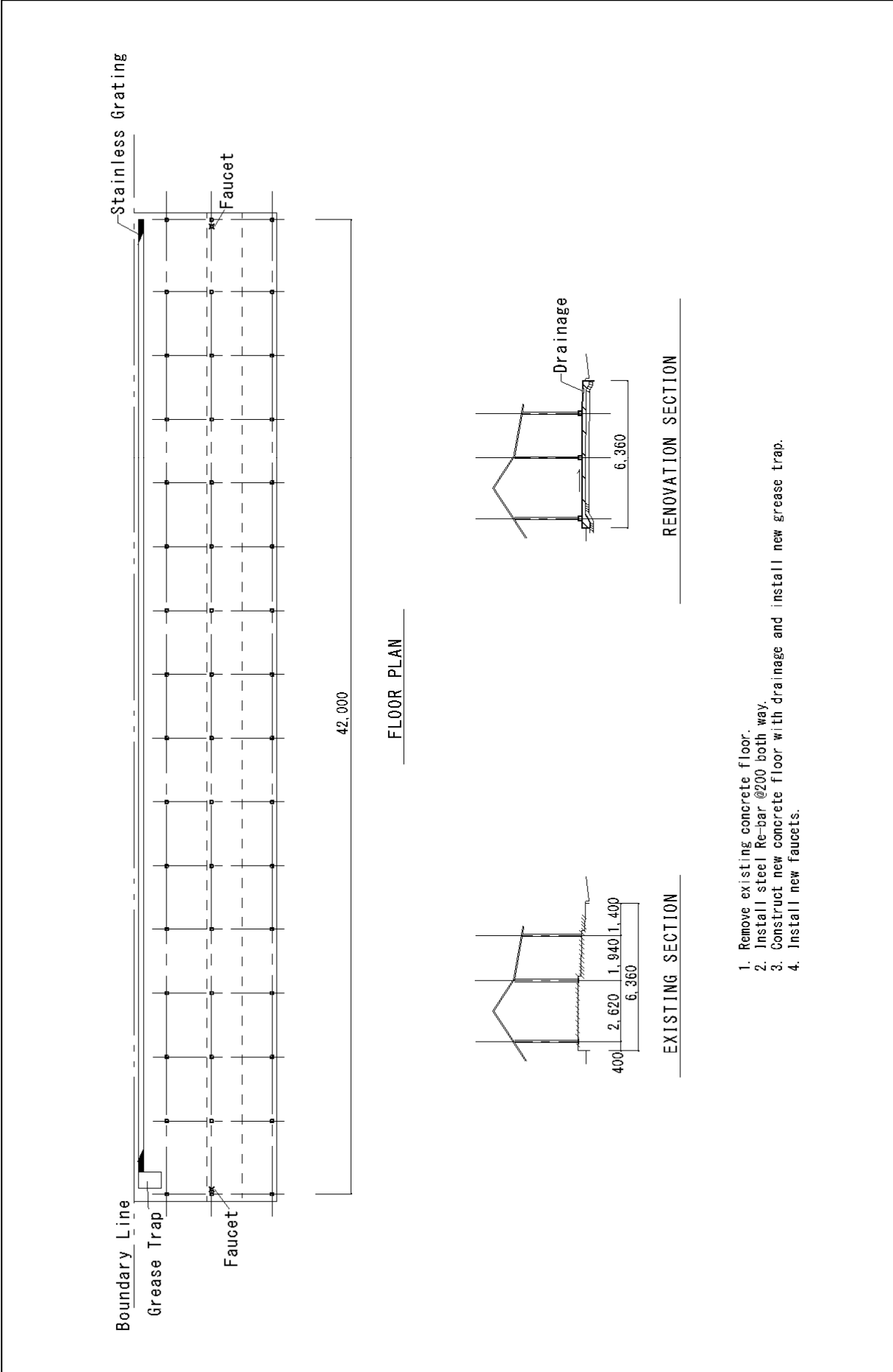
FISHERMEN'S GEAR STORAGE - 2

Figure 2-2-3(14) Elevation & Section of Gear Lockers-2



1. Remove existing steel V-shape roof including tight-frame.
2. Prepare the surface of existing steel structure by removing existing painting with grinder.
3. Paint new anti-corrosive paint and polyurethane paint on the surface of steel structure.
4. Install new stainless tight-frame on existing steel beam.
5. Install new V-shaped galvanized steel roof t=0.8 H=88, pre-coated with salt-resistant paint and galvanized steel "MENDO".
6. Install new lighting fixtures and water proof electric outlets.

Figure 2-2-3(15) Repair of Workshop



1. Remove existing concrete floor.
2. Install steel Re-bar @200 both way.
3. Construct new concrete floor with drainage and install new grease trap.
4. Install new faucets.

Figure 2-2-3(16) Repair of Venders' Arcade

2-2-4 Implementation Plan

2-2-4-1 Plans for Implementation and Procurement

Regarding the total construction period for this project, 5.5 months will be required for detailed designs and 13 months for construction works.

2-2-4-2 Consideration on Execution and Procurement

Same as the Basic Design Study Report

2-2-4-3 Scope of Work

(1) Scope of Work Undertaken by the Government of Japan

- ① Consulting on detailed design, bidding assistance, and design management, etc.
- ② Supply all construction materials and labor required for the construction work on the Japanese side of the present project.
- ③ Implementation and shipping insurance for shipping both by sea and overland imported materials that are required for materials procurement and construction on the Japanese side of this project.
- ④ Quality inspections required for materials procurement and construction on the Japanese side of this project.
- ⑤ With regard to the relevant construction work infrastructure, the basic scope is as follows: all power supplies after the entrainment work on the nearest utility poles to the project site as the boundaries for responsibility, all water supplies after the water pipes have been laid internally from the project site boundary line, all waste water, and telephones up to the overhead cabling within the skeleton.

(2) Scope of Work Undertaken by the Government of St. Lucia and Grenadines

- ① To secure land necessary for the sites of the project and to clear the debris on the container yard.
- ② To install water supply pipes from the main supply pipes to the boundary of the project site.
- ③ To supply electricity to the nearest power utility pole to the boundary of the project site.
- ④ To procure and install office equipment, phones, and furniture, etc., needed in the offices in the Fisheries Center.

2-2-4-4 Consultant Supervision

Same as the Basic Design Study Report

2-2-4-5 Quality Control Plan

Same as the Basic Design Study Report

2-2-4-6 Procurement Plan

The procurement plan of the main materials and equipment to be used in the Project will be established as indicated below.

1) Construction material

Table 2-2-4(1) Source of Material Procurement

Material	Source of procurement		
	Local	Japan	3 rd countries
Sand, rocks, aggregates	○		
Rebar		○	
Steel pipe piles		○	
Cement	○		
Concrete	○		
Timber	○		
Winch		○	
Sliding equipment		○	
Fenders, Bollard, Mooring posts & rings, Light beacon		○	
Concrete blocks	○		
Aluminum sash, etc.	○		
Wooden doors, etc.	○		
Roofing		○	
Switch boards		○	
Switches, sockets	○		
Lighting	○		
Pipes	○		
Valves	○		
Air conditioners	○		
Ice machine, Ice Storeroom		○	
Insulated Fish Box		○	
Sinks		○	
Tables		○	
Septic tank with accessories		○	

2) Construction machinery

Table 2-2-4(2) Origin of Principal Machinery

Machinery	Source of procurement		
	Local	Japan	3 rd countries
Backhoe (0.6m ³)	○		
Clam-shell bucket (1.2m ³)	○		
Dump truck (10t)	○		
Truck (11t)	○		
Trailer truck (20t)	○		
Crawler crane (50t)	○		
Truck crane (7t, 20t)	○		
Vibration hammer (60kw)	○		
Vibrating roller (0.8-1.1t)	○		
Bull dozer (15t)	○		

2-2-4-7 Implementation Schedule

(1) Detailed Design Work

The detailed design stage will take about 3 months.

(2) Tendering

The Contractor, which is a Japanese construction company, is selected determined by tender. The tender is performed in the following order, and require 3 months: letters of interest, pre-qualifications, distribution of tender documents, tender, evaluation of tenders, determination of a company and contracting.

(3) Construction Work

Total construction term including the preparation term is expected to be 13 months.

The implementation schedule for the project is described in Table 2-2-4(3) showing the processes from signing the Exchange of Notes (E/N) to the completion.

Table 2-2-4(3) Implementation Schedule

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Remarks
Detailed Design & Tender	■																			Consultant Agreement, Site Survey
	▨																			Design/Tender Document, Tender
	■																			Approval of Tender Documents
Procurement & Construction	▨																			Civil Work
	▨																			Manufacture of Piles, Transport
	▨																			Jetty
	▨																			Boat Landing facility
	▨																			Building Work
	▨																			Manufacture of material, Transport
	▨																			Fishery Complex
	▨																			Fishing Gear Lockers
	▨																			Venders' Arcade
	▨																			Workshop
	▨																			Toilets/Showers
	▨																			Septic Tank

2-3 Obligations of Recipient Country

The obligations of the Government of St. Lucia have been confirmed by the government and the study team as described in the Minutes of Discussions, Record of Discussions and Inception Report during the Basic Design Study stage. They are listed below:

- ① To carry out Environment Impact Assessment(EIA),
- ② To obtain permission for execution of the project,
- ③ To secure the land for the project,
- ④ To remove the existing facilities including the jetty at the site,
- ⑤ To secure the place for dumping wastes from the construction site,
- ⑥ To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities,
- ⑦ To construct gates and fences in and around the site,
- ⑧ To exempt taxes and to ensure unloading and customs clearance of the products from Japan,
- ⑨ To exempt Japanese nationals from customs duties, internal taxes and fiscal levies,
- ⑩ To accord facilities to Japanese nationals who enter and stay at St. Lucia,
- ⑪ To bear commissions for banking services such as advising commission of A/P and payment commission,
- ⑫ To maintain and use properly and effectively the facilities under the scheme, and

- ⑬ To bear all the necessary expenses, other than those to be borne by the Grant.

2-4 Project Operation Plan

2-4-1 Principal Framework of Operation

Department of Fisheries of the Ministry of Agriculture, Lands, Fisheries and Forestry will be an implementation agency and own the facilities of the project. Management and operation of the facilities will be entrusted to Anse La Raye Fishermen's Co-operative Society Limited under the supervision, support, and guidance of the Department of Fisheries and Department of Co-operatives. This cooperative has already been established based on Co-operative Act (No.17 in 1946), and can sell fuel, oil, and fishing gears.

Department of Fisheries has sufficiently experienced entrustment of the facilities and equipment to Choiseul and Soufriere and they have been successfully conducted. It was evaluated that the Soufriere Co-operative had managed the facilities well since 2004 when the facilities were operated and the co-operative was commended as an excellent organization by Department of Co-operatives among the all the nationwide cooperatives in 2006.

A cooperative is established in the purpose of economic and social contribution to the members and the society in the spirit of helping one another. It is the reason that duty-free measures are given to cooperatives to the profits. Each cooperative society is obligated to submit financial statements to Department of Cooperatives. The Act urges the Department to observe the deficit cooperatives on the basis of the financial improvement plan for four years to be submitted by the cooperatives, though it is unquestionable for the surplus.

Thus, the watch and the tutoring system of the government concerning the management of the cooperatives is established as a law, and it is thought that the management is appropriately done if basic income sources such as the fuel and ice are secured also by the Anse La Raye Cooperative.

2-4-2 Organization

The Anse La Raye Fishermen's Cooperative is composed by 81 members now. The organization is managed by five board directors as shown in Figure 2-4-2(1). Future staff for the management of the facilities will need six people.

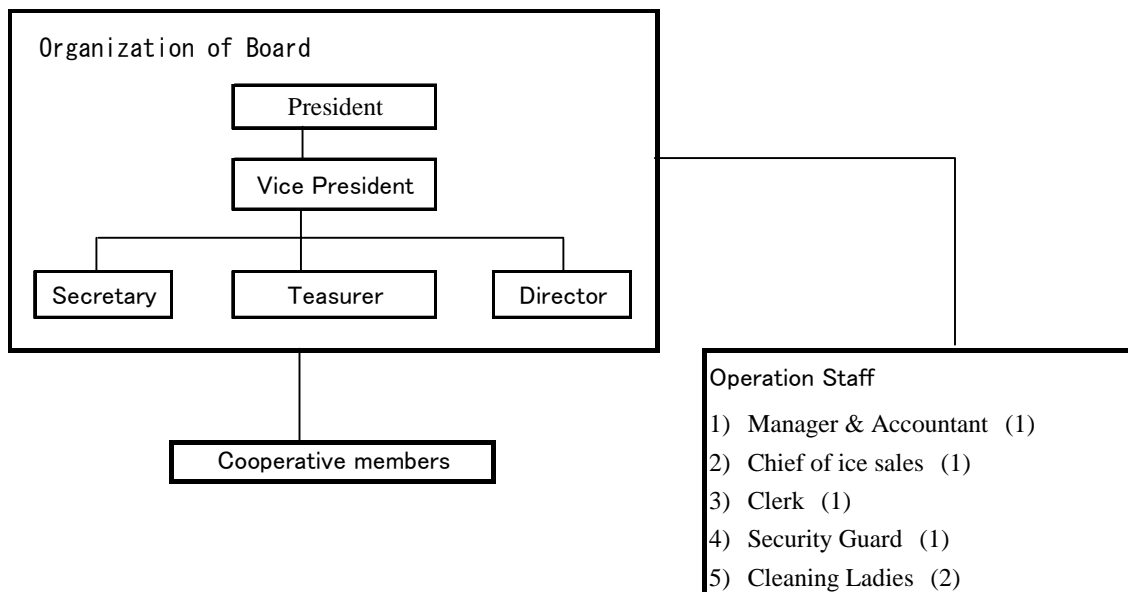


Figure 2-4-2(1) Organization of Anse La Raye Fishermen's Cooperative

2-4-3 Management and Operation Plan

The facilities of the project in completion will be entrusted to the Anse La Raye Cooperative Society in the course of the policy of Department of Fisheries. The activities put into operation by the Cooperative are as follows.

(1) Business Activities

- ① Fuel supply
- ② Selling lubricating oil
- ③ Selling ice
- ④ Selling fishing gears (Running a gear shop)
- ⑤ Renting a warehouse and a retail sale booth
- ⑥ Cold storage management
- ⑦ Collecting landing charge
- ⑧ Offering employment
- ⑨ Filling up a diving tank
- ⑩ Buying and selling fish

(2) Insurance Activities

- ① Selling (fuel and fishing gears) on credit to the members of Cooperative.

(3) Social Activities

- ① Pension planning

- ② Compulsory savings
- ③ Insurance for a ship and life
- ④ Scholarship
- ⑤ Selling rebate
- ⑥ Members' training for fishing etc.

2-5 Project Cost Estimation

2-5-1 St. Lucia's Expenses

The cost borne by the Government of St. Lucia is estimated as EC\$155,000, which is equivalent to approx. 8% of the annual budget of the Fisheries Department (2006). Details are shown in the following table.

Table 2-5-1(1) St. Lucia's Expenses

Items	Cost (EC\$)
Demolition of the existing jetty	55,000
Demolition of the existing buildings	77,500
Installation of electric power supply cable to site	2,000
Installation water supply pipe to site	500
Telephone line, Office work machinery, tools and furniture	20,000
Commission on banking arrangement	13,000
Total	168,000

2-5-2 Operation and Maintenance Cost

Anse La Raye Fishermen's Cooperative will be responsible for management of the facilities. The cooperatives at Soufriere and Choiseul, whose activities are similar to Anse La Raye in the respect of fishing activities, operation of similar size of an ice machine and number of co-op members, maintain sound management so far. In this respect, the management and operation of the both cooperatives become references that assume future management of facilities at Anse La Raye. The business revenue and expenditure of Anse La Raye Fishermen's Cooperative Society is calculated as shown in the table below. As a result, this cooperative seems to be possible to manage healthy because fiscal annual revenue and expenditure is estimated to be a surplus.

Table 2-5-2(1) Profitability of Anse La Raye Fishermen's Cooperative
(Unit: EC\$)

Income		
	Fuel etc.	1,416,000
	Ice	64,982
	Lockers rent	10,800
	Rental fees of toilets	3,650
	Income sub total	1,495,432
Expense		
	Cost of fuels	1,288,560
	Staff salary	53,280
	Electricity bill	39,801
	Water service fee	1,540
	Other office expenditure	26,000
	Maintenance cost	1,050
	Expense sub total	1,410,231
Profit		85,201
Reservation money etc.		
	Statutory reserve	21,300
	Education fund	8,520
	Distress fund	8,520
	Sub total reserve, etc.	38,340
Fund for renewal		
	Savings for machine	42,800
	Saving of main parts	3,000
	Savings fund sub total	45,800
Gross profit		1,061

Chapter 3 Project Evaluation and Recommendation

Chapter 3 Project Evaluation and Recommendations

3-1 Project Effects

This project is to bring the following effects as same as the basic design study.

【Direct Effects】

① Reduction of Landing Hours (Landing efficiency)

Fish is landed from beached fishing boats. For beaching boats, a lot of labor work is required as involvement of 6 persons. The hours for landing can be reduced on average to 0.5 hours from 1.5 hours at present after improvement of jetty and 2 persons are enough for landing fish at the jetty while 6 persons are involved in the said work.

② Reduction of hours for the preparation of fishing (Number of fishing boats using the jetty)

Provision of the jetty reduces hours for preparation for fishing operation such as loading of fishing nets from 1.5 hours to 0.5 hours on average as well as the landing activities stated above. Reduction of labor force for the preparation is also expected from 6 persons to 2 persons. The jetty can render services of landing fish, the in-port preparation and lying by.

③ Reduction of number for repairing fishing boat (Number for repairing fishing boat)

The repair of the boat bottoms and the drying of boats are necessary every day for wooden boat and once every two weeks for FRP boat under the present beaching situation. The repair work can be reduced to about once every several days for wooden boat and once a month for FRP boat with improving the jetty and at the same time, the damage to boat bottom can be greatly reduced with provision of the boat landing facility. Fishing boats can be evacuated to the road located at the backside of the fisheries facilities using the facility in hurricanes and the risk of boat damages in rough seas can be averted.

④ Upgrading of freshness for caught fish (Fish purchasing ratio, Fresh fish purchasing ratio in Fish Friday)

Supply of ice to meet the demand of 1.4 tons can improve freshness of landed fish with installing ice making machine, ice storage and insulated ice box. It will be possible to supply fresh fish to the hinterland and it is also expected to increase purchase ratio of fresh fish on Fish Friday (61%).

⑤ Increase of fishing efforts (Fish landing volume)

A lot of labor for in-port operation can be reduced and fishing efforts of fishermen can be increased to enable them to control time for selling fish that is stored with ice. The alternation of fishing activities are brought about by provision of the jetty, fish processing facilities (ice making machine, ice storage, primary processing facility and etc.), a tackle shop and fish gear lockers.

⑥ Vitalization and Enhancement of Fishermen's Cooperative (Number of registered fisherman)

Anse La Raye Fishermen's Cooperative becomes the main body for the operation and management of the fisheries facilities to be improved in the project. Currently, there is no office and the different body has operated and managed therefore, the activities to support the artisanal fishermen can not be attained. After the completion of the facilities, the operation and management body will be the Fishermen's Cooperative so the cooperative activities will be vitalized and enhanced.

⑦ Increase of the fisheries training, support for betterment of fishermen's welfare and education opportunity by the Department of Fisheries (Number of opportunity for education and training)

Provision of the Fishermen's Hall and the cooperative offices enables the Fishermen's Cooperative to hold regular meetings and fisheries trainings, and does the Department of Fisheries to extend fisheries technologies and training/education for improvement of fishermen's welfare.

【Indirect Effects】

- ① The project is to support fisheries policy of the Government of Saint Lucia since the operation and management by the Fishermen's Cooperative becomes possible with the improvement of the facilities in Anse La Raye, which is the last landing station among 13 places in the west coast.
- ② Improvement of working circumstances for fishermen, increase of fishing opportunities and the income of fishermen are expected with implementing the project. Increase of fishing efforts and employment opportunities are expected also.
- ③ The Government of Saint Lucia has the plan of the development of Anse La Raye Village with the balanced promotion of tourism and fishery. In the aspect of tourism, the village has successfully planned and held the event of Fish Friday that reflects characteristics of the fishing village. The project will enable the fishermen to stably supply fresh fish and support the event with providing the facilities for ice supply, sanitation and convenient places for the event. It will result in enhancement of both activities of fishery and tourism and contribution to the Government policy of promoting the fishing village.

Table3-1(1) Effects and Improvement by the Project

Situations and problems	Implementation of measures	Effects and improvement
1. Tough loads and additional time are required for fishermen when landing fish and preparing fishing nets on the beach due to lack of berths for fishing boats.	*Provision of berths for landing, laying by and preparation.	*Improvement of landing efficiency (0.5hours are reduced) *Improvement of preparation (0.5 hours are reduced) *2 fishermen can manage in-port operation. *Fishing efforts of assistants increase.
2. No services of mooring in the landing station urges fishermen to beach their boats, which results in increase of expenses for repair of boats' bottoms.	*Provision of berths for fishing boats. *Improvement of the workshop. *Introduction of the facilities for hauling fishing boats to the workshop.	*Drastic decrease of occasions of repairing boats' bottoms. *Evacuation can be possible at the extreme weather and the risk of boat damages is averted.
3. Insufficient supply of ice causes insufficient maintenance of quality of fresh fish.	*Provision of an ice making machine and ice storeroom. *Provision of insulated ice boxes.	*Sufficient supply of ice brings about increase of quality of fresh fish and decrease of the post-harvest loss. *Increase of amount of fresh fish to be sold.
4. Fishermen are obliged to secure time for selling fish by themselves due to no facilities for keeping quality of fish and to lose opportunities of fishing efforts.	*Provision of Jetty *provision of Fishery Complex *Provision of a tackle shop and fishing gear lockers	*Fishermen's devotion to fishing operation, being free from restricted time for selling fish. *Decrease of tough loads of in-port operation. *Safe storage of fishing nets and engines.
5. Deterioration of the aged fisheries facilities and their management by different bodies suffer activities of fishermen's cooperative, which targets social and economical improvement of fishers' welfare.	*Provision of an office for the cooperative. *Provision of a fishermen training hall, which renders services for conferences, training, seminars, etc.	*Implementation of regular conferences, training, etc. *Possible improvement of social and economic welfare of fishermen

3-2 Recommendations

Anse La Raye Fishermen's Cooperative Society Limited is recommended to effectively operate and manage the facilities with implementing the followings after completion of the facilities. The Department of Fisheries is also recommended to conduct the relevant items listed below for assisting the Cooperative.

(1) Appropriate operation and management

With assistance of the Department of fisheries and the Department of Cooperatives, the Cooperative at Anse La Raye is expected to run the fisheries facilities on stand-alone basis and annually reserve the fund for renewal of the ice making machine and ice storeroom from the profits which will be generated with saving operation costs and efficiently managing the facilities.

For promotion of the fishery and tourism at Anse La Raye, general understanding should be required to render services of the fisheries facilities to the foreign tourists and local visitors on Fish Friday. The cooperative should be responsible for efficient operation and management of the facilities.

(2) Implementation of training and seminars for fishermen

The cooperative should take responsibilities to conduct training of fishing technologies and seminars for advance of their welfare, to reserve necessary funds from the profits, and to contribute to promotion of the fishing village.

(3) Collection of more accurate fisheries statistics

The department of Fisheries conducts sampling surveys at several landing stations and estimates the fish catch statistically. Anse La Raye, for example, was a sampling station for fish catch but no survey is conducted. It is believed that more detailed survey will bring about accurate data, which may result in easier comprehensive administration of the Department. The survey may reveal the difference between market prices of fish and fish prices directly sold by fishermen and it may produce basic data for improvement of fishermen's welfare. In addition to them, fundamental data for researching fish resources and fish catch should be collected for the fisheries administration by the Department of Fisheries. Provision of an office for a Fisheries Extension Officer will help the monitoring survey.

(4) Management of the jetty for safe and efficient in-port operation

The jetty is deemed to be congested with fishing boats for their own purposes, since the scale of the jetty is designed for minimum services of landing, preparation and lay-by berths. For safe and efficient management of the facility, rules for using the facility should be formulated for fishermen on the basis of significant improvement of operation time.

(5) Safe fishing operation and establishment of evacuation of fishing boats

In hurricanes, fishing boats are obliged to be evacuated ashore at Anse La Raye Village or from the Bay, in which no natural or artificial breakwater exist, to calm waters in other places. For the evacuation, meteorological information on hurricanes should be promptly transmitted to fishermen through the Cooperative and establishment of the system for transmitting such information is recommended. The Department of Fisheries is recommended to assist the Cooperative for the coordination with the Meteorological Services. The both parties require collaboration for instructing fishermen not to approach the jetty in high wave seas.

(6) Establishment of fish transaction

Transactions of fish might be carried out not only in the fish processing facilities but on the jetty. The Cooperative is recommended to demonstrate its initiative for establishing the rules of fish transactions to be conducted at the sale counter in the fish processing facilities. The Co-op is also recommended to formulate the system that the Co-op buys all the fish from the fishermen, who are refunded by the Co-op according to sale of fish catch. The formulation of the rules of transactions is expected to enhance activities of quality control of fish to supply fresh fish to consumers.

(7) Promotion of ice use

Fishermen supply fresh fish to not only the domestic market but foreign tourists and local visitors on Fish Friday. The situation requires the quality of fresh fish to satisfy these tourists and use of ice for fishing and fish distribution should be promoted by the Cooperative for fishermen to increase income by improvement of fish quality and to decrease volume of post-harvest loss.

(8) Monitoring of beach

The sand beach at Anse la Raye shows slight rate of erosion. The beach just in front of the fisheries facilities might be scoured by high waves due to short distance from the shoreline. For properly protecting the fisheries facilities along the shoreline, regular monitoring of the beach configuration should be conducted and some shore protection facilities should be installed, if necessary.

(9) Maintenance of the jetty

Open mouths of the jetty, which are designed for releasing uplift pressure by waves, are usually covered with blocks of greenheart timber for traffic on the jetty. In high seas they should be removed from the positions. Even if they are flown away, however, they will be purchased from the local market.

Appendices

A-1 Member List of the Study Team

Name	Assignment	Organization
Official Member Mr. KAMIJO Naoki	Leader	Deputy Resident Representative, Mexico Office, Japan International Cooperation Agency (JICA)
Consultant Member Mr. MATSUURA Eiichi	Chief Consultant	ECOH CORPORATION
Mr. YAMAMOTO Yuhei	Construction/ Procurement Planning/ Cost Estimation	ECOH CORPORATION

A-2 Study Schedule

				Official Member	Consultant Member	
				Mr. Naoki KAMIJO	Mr. Eiichi MATSUURA	Mr. Yuhei YAMAMOTO
1	Jan	5	Sat		Tokyo – New York	
2		6	Sun	Mexico City – Miami	New York – St. Lucia	
3		7	Mon	Miami – St. Lucia	Explanation of Inception Report	
4		8	Tue	Discussion on Minutes of Discussions		Study on Cost Estimation
5		9	Wed	Signing on the Minutes of Discussions		Study on Cost Estimation
6		10	Thu	Site Survey		
7		11	Fri	St. Lucia – Port of Spain Report to the Embassy of Japan	Supplemental Study	Study on Cost Estimation
8		12	Sat	Port of Spain – Miami Miami – Mexico City	St. Lucia – San Juan San Juan – New York	Study on Cost Estimation
9		13	Sun		New York	Study on Cost Estimation
10		14	Mon		– Narita	Study on Cost Estimation
11		15	Tue			Study on Cost Estimation
12		16	Wed			Study on Cost Estimation
13		17	Thu			St Lucia – New York
14		18	Fri			New York
15		19	Sat			– Narita

A-3 List of Parties Concerned in the Recipient Country

(1) Department of Fisheries, Ministry of Agriculture, Lands, Fisheries and Forestry

Mr. Vaughn A. Charles	Chief Fisheries Officer
Mr. Rufus George	Deputy Chief Fisheries Officer
Ms. Petronila Polius	Anse la Raye Fisheries Extension Officer
Mr. Takafumi Toshihara	JICA Expert

(2) Ministry of Communications, Works, Transport and Public Utilities

Mr. Jude Regis	Chief Engineer
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(3) Fish Marketing Corporation

Mr. David George	Refrigeration Technician
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A-4 Minutes of Discussions

MINUTES OF DISCUSSIONS
ON IMPLEMENTATION REVIEW STUDY
ON ANSE LA RAYE FISH LANDING FACILITY DEVELOPMENT PROJECT
IN SAINT LUCIA

In January 2008, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched an Implementation Review Study Team (hereinafter referred to as "the Team") on the Project for Anse La Raye Fish Landing Facility Development Project (hereinafter referred to as "the Project") to Saint Lucia. The Team is headed by Mr. Naoki Kamijo, Deputy Resident Representative, Mexico Office, JICA and is scheduled to stay in the country from 6th to 17th January 2008.

The Team held a series of discussion with the officials concerned of the Government of Saint Lucia and conducted a field survey at the study area. In the course of discussions and field survey, both sides confirmed the main items as described on the attached sheets. The Team will proceed to further works and report the findings to the Government of Japan.

Castries, 9th January 2008

上條直樹

Naoki Kamijo

Leader
Implementation Review Study Team
Japan International Cooperation Agency



Vaughn A. Charles

Chief Fisheries Officer
Ministry of Agriculture, Lands, Forestry and Fisheries
Saint Lucia

ATTACHMENT

1. Objective of the Project

The objective of the Project is to promote artisanal fisheries by providing fisheries facilities in Anse La Raye.

2. Japan's Grant Aid Scheme

The Saint Lucia side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Saint Lucia as explained by the Preliminary Study Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed between the Saint Lucia side and the Preliminary Study Team on 30 March, 2006.

3. Component of the Project

Both sides confirmed that the final Basic Design component is as shown in ANNEX-I.

4. Further Schedule of the Study

JICA will complete the final report taking a result of the last study in account and send it to the Government of Saint Lucia by the end of April, 2008.

5. Other Relevant Issues

5-1. Project Title

Both sides confirmed that the Project Title should be changed from "Anse La Raye Fish Landing Facility Development Project" to "the Project for Improvement of Fishery Infrastructure in Anse La Raye."

5-2. Project Implementation Committee

The Saint Lucia side explained that a Project Implementation Committee would be established for smooth construction works of the Project prior to the commencement of works of the Project and that consist of the following members:

- Chief Fisheries Officer
- Representative of the Ministry of Social Transformation, Human Services, Family Affairs, Youth and Sports
- Representative of the Ministry of Health and Labour Relations
- Representative of Fire Services
- Representative of Police Department

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- Representative of Governmental Architecture
- Representative of Anse La Raye Fisherfolks' Cooperative Society
- Representative of Anse La Raye Village Council
- Representative of the Department of Cooperatives
- Representative of Contractor and Consultant

5-3. Operation and Management of the Facilities

The Saint Lucia side explained that a Management Committee to oversee the day to day operation of the facilities would consist of the following members:

- Representatives of the Anse La Raye Fisherfolks' Cooperative Society (2 persons)
- Representative of Anse La Raye Village Council (1 person)
- Representative of Department of Fisheries (1 person)
- Representative of Department of Co-operatives (1 person)
- Representative of the Community

The Saint Lucia side explained that the Management Committee would be established prior to the completion of the Project.

The Saint Lucia side agreed to allocate necessary budget for the maintenance and renewal of the facilities on budget planning of the Management Committee.

The Saint Lucia side is responsible for the maintenance of the facilities and should take necessary measure in case of beach accession and/or erosion in front of the facilities.

5-4. Necessary Permissions for the Project

Based on the Minutes of Discussions signed on 13 October, 2006, the Saint Lucia side agreed to obtain Construction Approval from the Development Control Authority (DCA) based on the detailed design of the Project. The Saint Lucia side explained that it would take within one month to get the Approval after the detailed design of the Project would be submitted to the Department of Fisheries. Besides, the Saint Lucia side agreed to obtain the Approval prior to the commencement of works of the Project and to send a copy to JICA/JOCV Saint Lucia Office promptly.

5-5. Basic Infrastructure Preparation

Based on the Minutes of Discussions signed on 13 October, 2006, the Saint Lucia side agreed to provide basic infrastructure such as electricity, water supply, etc. to the Project site before the construction of facilities would be completed.

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5-6. Removal of Existing Facilities

Based on the Minutes of Discussions signed on 13 October, 2006, the Saint Lucia side agreed to remove existing facilities including jetty for the implementation of the Project, and report the completion of the removal works to JICA/JOCV Saint Lucia Office promptly.

Besides, the Saint Lucia side agreed to prepare substituting facilities for fisherfolks to be utilized after the removal of the existing facilities.

5-7. Environment Impact Assessment (EIA)

The Saint Lucia side agreed to prepare Environmental Impact Statement (EIS) based on the detailed design of the Project and to submit it to DCA. The Saint Lucia side explained that it would take within one month to get the permission of EIS. Besides, the Saint Lucia side agreed to obtain permission prior to the commencement of works of the Project and to inform to JICA/JOCV Saint Lucia Office promptly.

END

ANNEX-I Components of the Project

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Components of the Project

Items	Specifications	Quantity
1. Civil Works		
1) Jetty & accessories	Jetty of steel pipe piles *Length: 48m, Width: 5.6m *Berth length: 27m x 2 *Approach: 21m, Width: 4m *Piles protected with anti-corrosion coating	1 unit
2) Boat Landing Facility	Winch and portable slides	1 unit
2. Building Works		
1) Fishing gear lockers	R.C. Blocks construction Floor area: 128.1 m ² & 132.3 m ²	2 buildings (Total of 30 lockers)
2) Drainage	Septic tank	1 unit
3) Fish Complex	Fishery Complex for rooms of: - Ice making & storage plants - Fishermen's Hall - Tackle shop - Office of Co-op - Office of Dept. of Fisheries * Total floor area: 341.4 m ²	A building of 341 m ²
①Ice making machine	Capacity: 1 ton/day	1 unit
②Ice storeroom	Storage capacity: 2 ton	1 unit
③Insulated ice box	A insulated ice box of 100 liters	2 units
④Equipment of retailing fish	Tables and sinks of stainless steel	2 units
4) Workshop	Repair of roofing (area: 199 m ²) Repaint of steel frames, Electricity wiring	1 unit
5) Venders' arcade	Repair of floor concrete & water supply facility	1 unit

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