4 - 3 TERMS OF REFERENCE
FEASIBILITY STUDIES FOR THE
PORTS OF BATANGAS AND SAN FERNANDO

I. BACKGROUND

The development of ports and harbors has always been an essential component of the government's long-range infrastructure program which commands priority in its Five-Year Development Plan. It has been given impetus in view of the industrialization and expansion of agriculture and other industries as well as in linking areas to major growth and urban centers of the country thereby serving as a major instrument of national development.

II. OBJECTIVES

The general objective of this Study is to come up with findings so as to enable PPA to map out future development needs of the Ports of Batangas and San Fernando. It is to prepare technical, economic and financial studies for the rehabilitation, improvement and/or expansion of the ports' existing facilities. Specifically, this shall include the following:

a. To provide recommendations as appropriate for the construction, improvement and/or expansion of existing herth facilities.

b. To make recommendations regarding cargo handling systems/operational equipment needed.

c. To make recommendations on the stock-taking of present conditions of quay installations, storage facilities, buidings and utility installations.

d. To make recommendations on appropriate lightings, sea marks and dredging of harbor maintenance.

e. To determine preliminary outline designs, specifications and cost estimates for the best investment alternatives for the recommendations.

f. To investigate the operations of competing ports and evaluate their function/services to the hinterland.

g. To carry out economic analyses taking the historical development of the Batangas and San Fernando Harbors.

h. To provide financial analyses of the resulting recommended port works

and the corresponding port operations within the framework of realistic accounting and port tariff applicies.

III. SCOPE OF CONSULTING/ADVISOPSHIP SERVICES

The Study Group shall be responsible for technical and administrative studies, economic and financial analyses, field and laboratory investigations and related work to achieve the objective set forth in Section II above to be carried out in two phases.

PHASE I

1. Review of Existing Data

The Experts and local staff shall review and utilize as appropriate all available pertinent data and reports of previous relevant studies. Additional field investigations may also be undertaken.

2. Traffic Forecasts

The Study Group shall prepare traffic forecasts as can be seen to be realistic in the context of each port. These forecasts shall be broken down by major commodity groups and by origin-destination for the period 1983-1990, to be followed by summary forecasts for the period 1991-2000. These shall be developed consistent with the latest available data and current development plans of the Government.

3. Recommended Additional Port Facilities

An analysis of the need for additional facilities for domestic and foreign shipping shall be made giving due attention to need for access to the ports by land and sea.

Based on the traffic, forecasts, and by methods appropriate to each case, the scale and timing of any additional facilities needed in the region of each port shall be determined, including the following:

a) The present capacity of both ports and of any neighboring or competing ports;

b) The physical capacity required to handle the amount of cargo tonnage and passenger forecasts, taking into account expected technological changes in shipping and cargo handling;

c) Alternative ways of providing the required capacity with recommendations for additional facilities at each port;

d) Optimum phasing and timing of improvement and extension as warranted by increasing traffic.

4. Cost-Estimates for Recommended Additional Port Facilities

Estimates shall be prepared to within 20% (based on current costs) of the construction costs of the recommended facilities, implemented in stages, as required including tabulations of quantities and unit prices for all major items of work for the proposed facilities.

5. Economic Evaluation

The economic analysis shall determine the most economical means of providing - port facilities for the expected traffic growth at each port. The benefits to be considered shall include savings in vessel operating costs, savings in cargo handling costs and savings - in port maintenance costs, together with any other net gains to the economy directly attributable to the proposed port expansions.

6. Financial Evaluation

Financial forecasts and an analysis of prospective costs and revenues are to be made for each of the port studies.

The financial analysis shall include estimates of annual capital, maintenance and administrative costs where appropriate and costs of other port operations.

These estimated costs shall be attributed to the various services to be offered at each port, distinguishing between costs to be incurred by PPA and those to be borne by other organizations.

Annual PPA operating revenue and expenses and cash flow statements for the period 1983-1990 shall be prepared for both ports with calculations of the annual rate of return on the total PPA net fixed assets for each project port and annual operating ratio.

7. Recommended Port Investment

The relative priorities of the ports' improvement shall be determined based on the study's findings. The recommended program shall define the scope of the proposed improvements, give time schedules for additional engineering studies, as well as provide estimates of the foreign and domestic currency cost components.

The foreign currency expenditures shall include such items as imported equipment, materials and supplies, as well as indirect

foreign currency component of local materials and supplies, wages of foreign personnel and profits of foreign firms.

PHASE II

Detailed engineering shall be undertaken considering the functional requirements and preliminary design of both ports as recommended by the Study.

1. Undertake detailed engineering design for the project ports, including the preparation of detailed plans and working drawings for all facilities of the project.

2. Undertake other related investigations e. g., soil investigation, at the project ports if required.

3. Describe in complete detail the proposed work items to be done at both ports.

Time Schedule for Reports

The following reports shall be prepared and submitted within the following time limits:

a. An Inception Report within three (3) months from the start of the Project, summarizing the study's initial findings.

b. Progress Reports, at one-month intervals commencing two (2) months after submission of the Inception Report, giving a summary of progress made to date and interim findings together with the schedule of work for the next reporting period.

c. A Draft Final Report, within twelve (12) months of the project's starting date, summarizing all works performed together with the Study's findings and recommendations.

d. A Final Report incorporating all revisions deemed appropriate by the Study Group shall be submitted 60 days after receipt of comments on the Draft Final Report from representatives of the Government.

IV. DATA, LOCAL SERVICES AND FACILITIES TO BE PROVIDED

The PPA will provide all available basic and processed data. It will also provide all available data on:

a. Inbound and outbound cargo tonnages with breakdowns for domestic and foreign origins and destinations;

b. Inbound and outbound passengers;

c. Traffic and ships engaged in foreign and domestic service respectively;

d. Statistical data on port and ship operations;

e. Monthly and annual cargo passenger and vessel statistics for both ports;

f. Cargo handling equipment at both ports and companies engaged in cago handling;

g. Plans and design drawings of the port;

h. Available hydrographic charts and surveys.

PROPOSED STAFFING PATTERN

STEERING COMMITTEE

Chairman
Members (2)

TECHNICAL SUPPORT STAFF

1 - Project Manager
1 - Project Coordinator/Operations Specialist
1 - General Economist
1 - Transport Economist
1 - Regional/Industrial Planner
1 - Port Engineer
1 - Financial Analyst
1 - Statistician
1 - Economic Researcher
1 - Draftsman
1 - Clerk Typist
1 - Driver

FEASIBILITY STUDIES FOR THE
PORTS OF BATANGAS AND SAN FERNANDO
PROPOSED PROJECT BUDGET

COST TERM	PPA
Allowances/wages (Detailed Personnel Only)	79,000
Travelling Expenses (Local Counterpart Only)	38,000
Representation Expenses	17,000
Office and Technical Supplies/Materials	44,000
Communications	13,000
Fuel, Lubricants, Maintenance and Repair	33,000
Contingency	22,000
TOTAL	246,000

SAN FERNANDO PORT (LA UNION)

PRE-FEASIBILITY STUDY PROJECT

Prepared by: Port Planning Department

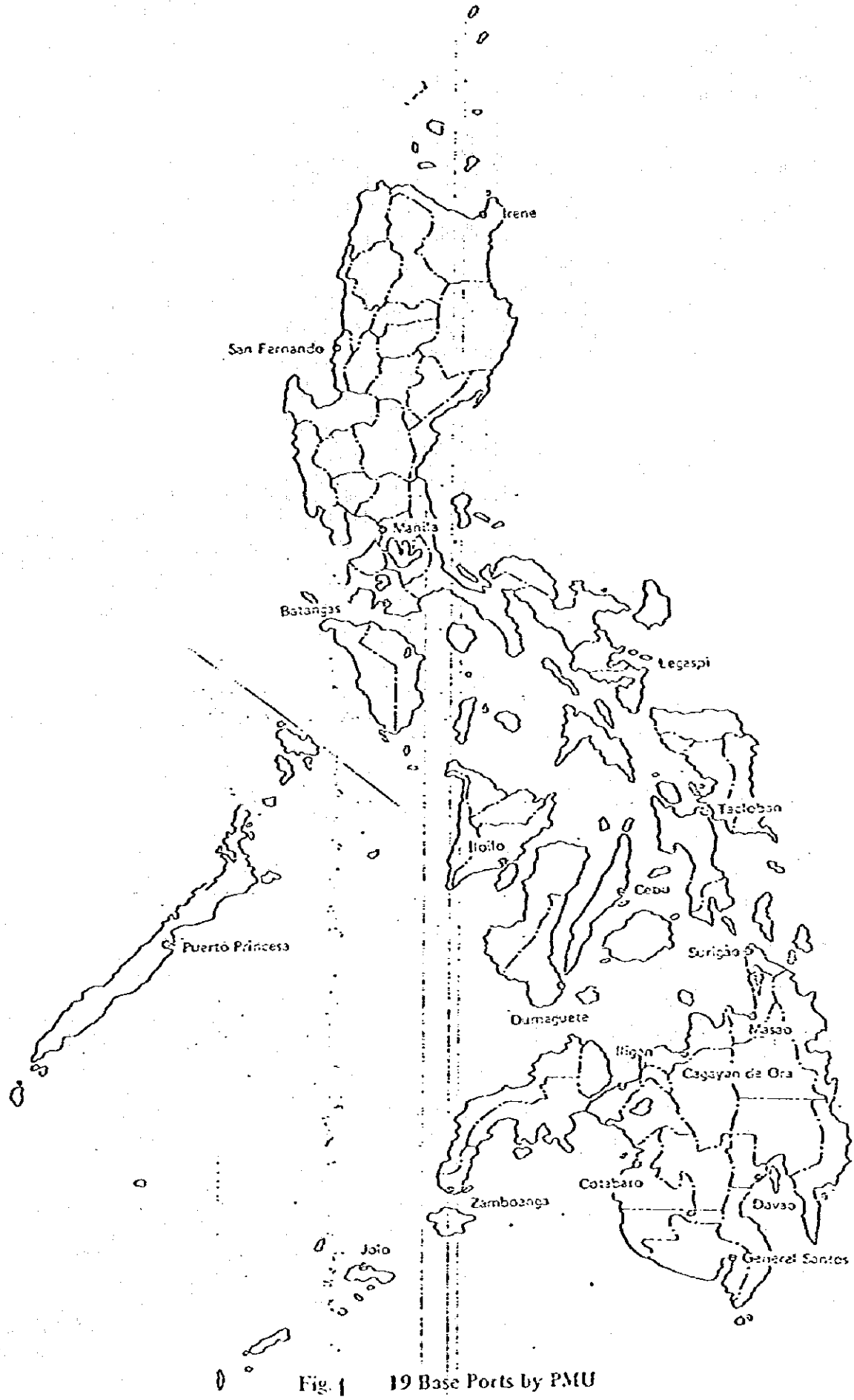


Fig. 1 19 Base Ports by PMU

PORT OF SAN FERNANDO

1. DEVELOPMENT PROFILE OF THE PORT DISTRICT AND ITS HINTERLAND

1.1 Existing Socio-Economic Conditions

The Port District of San Fernando covers five (5) provinces that includes the northwestern coastal section of Northern Luzon. These provinces are Ilocos Norte, Ilocos Sur, La Union, Pangasinan and the northern portion of Zambales province covering a total area of 21,568 square kilometers or about 7.2 per cent of the total land area of the Philippines.

About 65 percent of the total land area are mountainous with foothills giving way to narrow coastal plains in La Union Ilocos Sur and Ilocos Norte. A basin formed by the Agno River in central and eastern Pangasinan represents the other lowland plain in the District.

There are nine major rivers in the region, the more important of which are the Agno and Bued rivers that flow into and provide irrigation for Pangasinan, with the former turning the turbines of the Ambuklao and Binga hydroelectric power plants, the Chico River which flows from the Mt. Province into Kalinga-Apayao which is expected to produce additional power to the area by the turn of the decade, the Laoag river which irrigates the farms of Ilocos Norte and the Abra and Amburayan rivers which flow down to the coastal plains of La Union and Ilocos Sur.

It is estimated that about 1,457 billion metric tons(M.T.) of various metallic and non-metallic minerals exist in the region. Of the metallic minerals, it is estimated that copper ore reserves stand at 466 million M.T., gold ore reserves at about 288 million M.T. or some 17 percent of the country's total deposits, iron ore reserves at 1,352 million M.T., and zinc ore reserves together with lead and cadmium at 0.29 million M.T. In the non-metallic mineral category, raw materials for the production of cement is estimated at 907 million M.T. and are found in La Union, Abra and Ilocos Norte. Construction material reserves stand at 7.3 million M.T. or about 18 percent of total national deposits. Other non-metallic minerals,e.g. lime, asbestos, pyrite, etc., constitute a total of 543 million M.T. or some 33 percent of the nation's total.

In 1975, total population of the five provinces stood at 3,269,400 recording a 9.3 percent increase over 1970 figures. During the same year, the average man-land ratio in the region was 152 persons/sq. km. By province, Pangasinan was the most densely populated with 283 persons/sq.km. while the least densely populated was the province of Abra with 38 persons/sq.km.

The health status of the region is relatively better than that of the other parts of the country. Average life expectancy is 61 years while the mortality rate is 6.8 per 1,000 persons.

For the period 1971-75, the economy grew at an annual average of 3.1 percent. Sectoral contribution to the Gross Regional Domestic Product (GRDP) were as follows; services, 40 percent; agriculture, 31 percent; and industry 29 percent. Compared with the other regions of the country, it had the highest contribution to the GRDP which was accounted for by the mining and quarrying industry.

1.2 Economic Forecast

1.2.1 Industrial Development

Industrial output grew at an annual average rate of 4.6 percent during the first half of the 1970's, with mining garnering 4.1 percent and construction at 12.7 percent, the former accounting for about 51 percent of total production in this sector.

The manufacturing industry had a low 1.8 percent from 1970 to 1975 which has been dominated by the production of consumer items. Final demand goods shared about 89 percent of total manufacturing output; intermediate goods, 7 percent; and capital goods, 2 percent.

Industrial development in the region requires an average industrialization rate of about 9 percent annually in 1983-1987. The industrial output level is expected to reach ₱1,539 million in 1982 and to about ₱2,620 million by the year 1987. Total output of industry is expected to account for some 28.5 percent of GRDP by the end of 1982. By 1987, industry will be surpassing agriculture by getting 33 percent of total GRDP.

1.2.2 Agricultural Development

Agriculture is targeted to grow at an annual rate of 5.3 percent for the period 1978 to 1987. The expected yearly rate of employment generation during the same period is forecast at 1.39 percent. Self sufficiency is targeted with an appreciable

surplus for distribution to other regions that do not produce them. An aggregate of 402,700 M.T. by end of 1982 to as much as 522,100 M.T. by 1987 will be produced. Production is expected to increase at an average rate of 3.66 percent annually from 1982 to 1987. Production of cash crop will also expand and is expected to increase from ₱647.5 million in 1982 to ₱839 million by 1987.

1.2.3 Road Network

Presently, land transportation dominates all other modes of transport. It is adequate in the more developed areas of the region but not as much in the rural areas and inland provinces of Abra, Mt. Province and Benguet due to the poor condition of the roads. Although the road network in the region is quite extensive, only one-fourth is paved (asphalt or concrete) while the rest are gravel (47 percent) and earth roads (27 percent). Twenty-six percent of the total road kilometer age is accounted for as national roads; 36 percent, provincial roads; 30 percent, municipal roads and 8 percent as city roads. The road network has also a large proportion of temporary bridges. Some 3,723 km. of roads and 9,258 linear meters of bridges will have to be constructed and improved before 1987.

1.2.4 Power Distribution

Present power consumption in the region is low with only 30 percent of the population being served with electricity. Last 1980, all municipalities were connected by a backbone system in which electrification had covered 80 towns and cities. By 1985, the generating capacity of the region's power plants is targeted to be increased to some 567 megawatts.

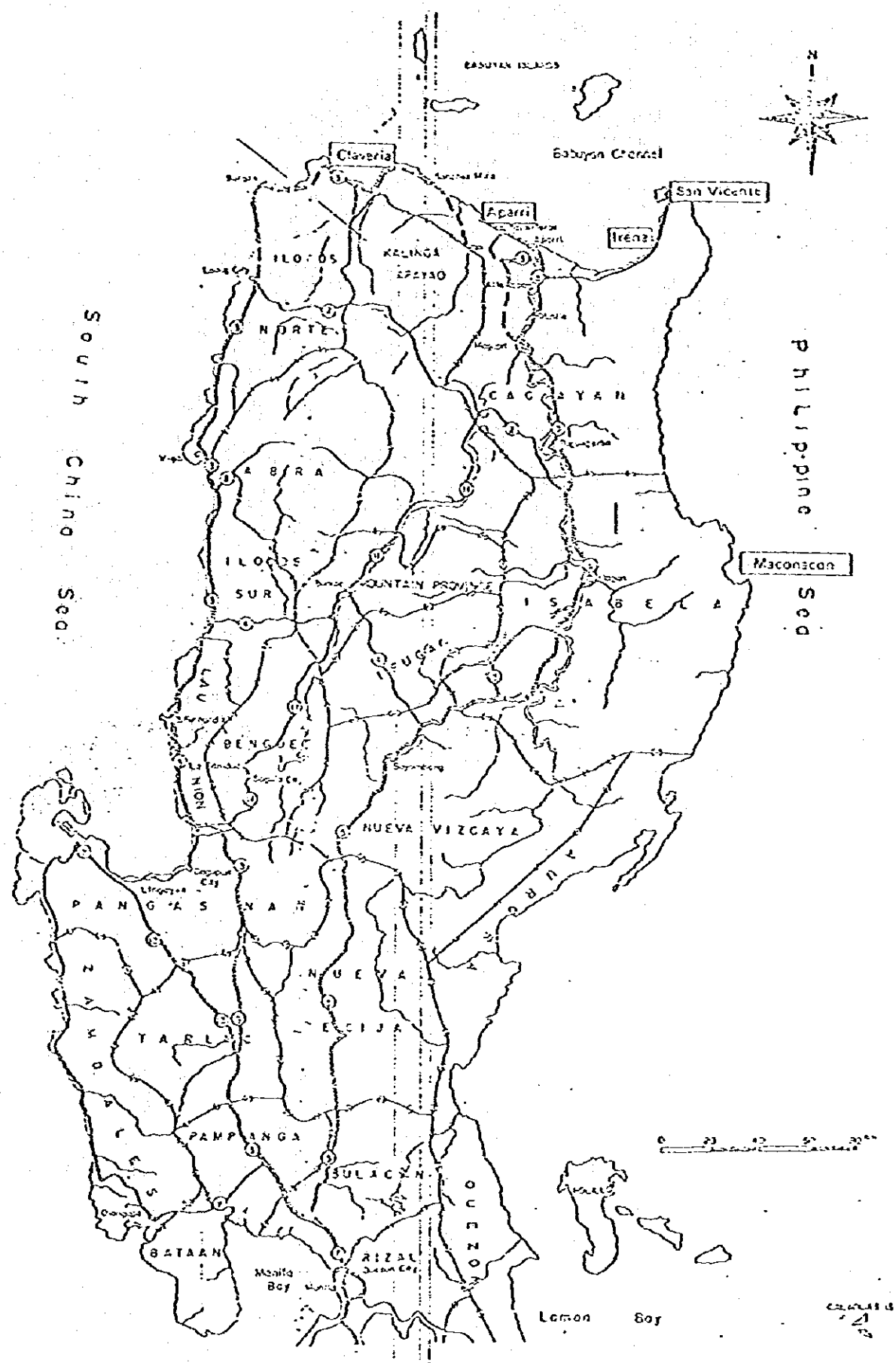


Fig. 2 Road Network of Northern Luzon

2. THE PORT DISTRICT OF SAN FERNANDO

The San Fernando Port District covers all government and privately owned ports situated in the four coastal provinces of Region I, i. e., Ilocos Norte in the far North, Ilocos Sur, La Union and Pangasinan in the southwestern portion and a part of Zambales province of Region III. The supervision of operation of the various ports is principally done by the personnel of the Port Management Unit of San Fernando. The Port of San Fernando which is located at San Fernando, La Union, the capital region and the premier port of entry in the north, has three piers to serve port users, i. e., the government RC pier (P-1), the Shipside timber pier (P-2) and the Philex conveyor pier (P-3). It is also the base port as well as the seat of office of the PMU.

The District has six Sub-ports, i. e., the Sub-port of Currimao in Ilocos Norte, the Sub-port of Salumague in Cabugao, Ilocos Sur, the Sub-port of Sulvec in Narvacan, Ilocos Sur, the Sub-port of Dagupan in Dagupan City, Pangasinan, the Sub-port of Sual in Sual, Pangasinan, and the Sub-port of Masinloc in Zambales which has six private ports.

2.1 Base Port of San Fernando

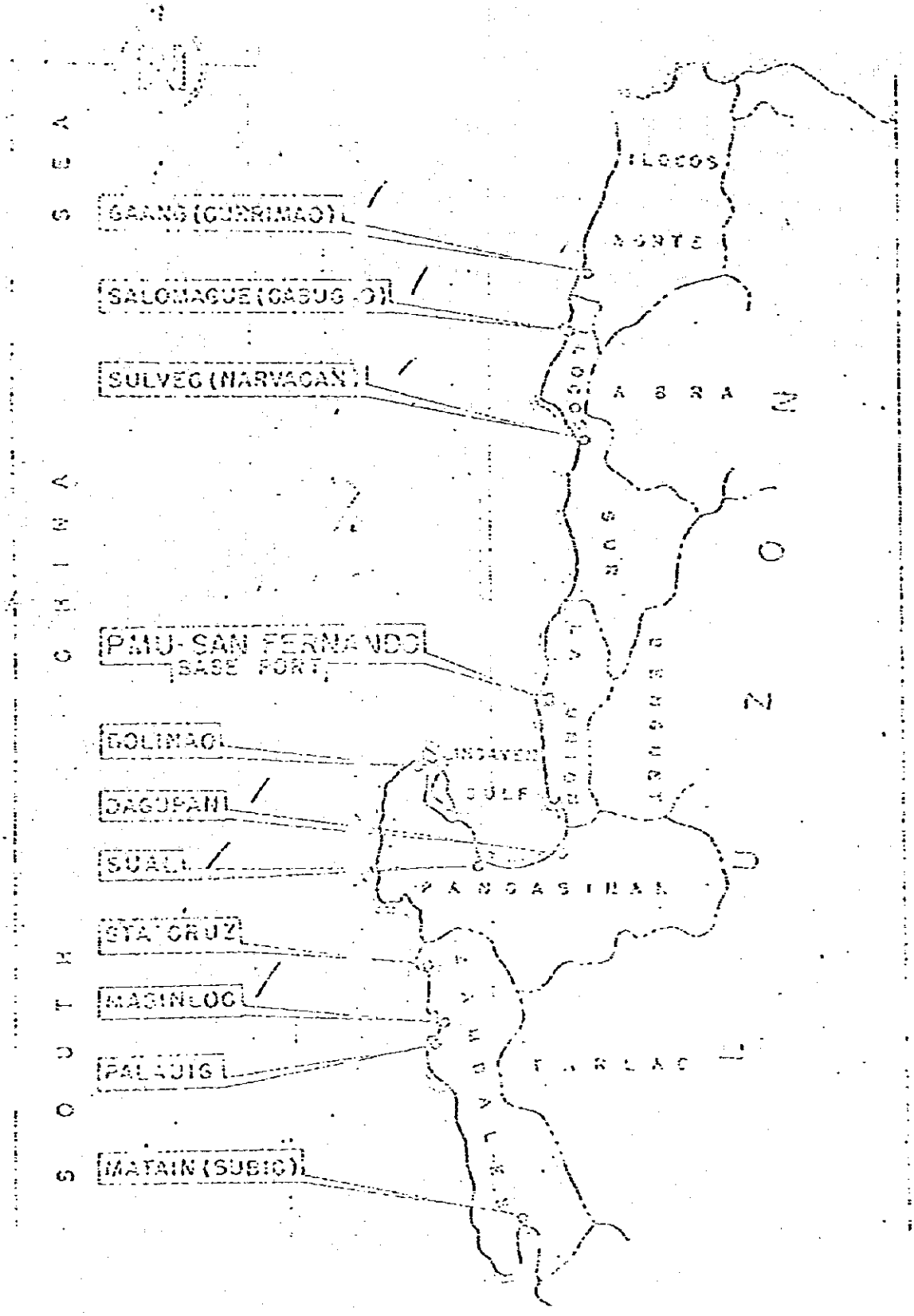
Lying on the eastern shore of the province of La Union, the San Fernando Port is an established port in the field of foreign trade. It is located at longtitude 120 degrees 9'E and latitude 16 degrees 37'N. Like other ports of entry, it has favorable balance of trade every year. This port is an important outlet of mining products and portland cement which are produced and manufactured in the region.

San Fernando averages 31 ship calls (domestic and foreign) per month and has an average cargo throughout of 406,000 metric tons per year. Oil products, cement, fertilizer, rocks and other general cargo dominate the cargo traffic.

2.1.1 Government Pier (P-1)

The pier was constructed on May 2, 1956 and became fully operational in 1966. The physical facilities of the pier are the following:

a. A pier of reinforced concrete structure with 200.50 meters in length and 19.00 meters wide.



PHILIPPINE PORTS AUTHORITY	REVISION	FIG. 3	FIG. TITLE: GEOGRAPHICAL LOCATION	INTEGRATED PORT LOCATIONS	DATE 5-88	SHT 1/1
	NO.	DATE	DESCRIPTION	BY	APPROVED	

b. A marginal wharf of 27 meters in length

c. Three (3) warehouses with a total area of 1,180 square meters

d. An open storage area of 34,012 square meters

e. A total port area of 41,428 square meters

f. A causeway with a length of 83 meters

g. A 10.60 meter control depth of water below MLLWL

2.1.2 Shipside Pier (P-2)

In 1960, the government of the Republic of the Philippines and the United States of America through the Military Bases Agreement, granted unto Shipside Incorporated/development rights on a 15-hectare portion of the US Military Reservation at Poro.

Shipside pier is a timber pier of 24.39 meters wide and 259.15 meters long. It can berth four (4) ocean-going vessels at a time. Water depth is 32 feet at the shore end and 63 feet at the sea end.

2.1.3 Philex Conveyor Pier (P-3)

This is a conveyor pier which is principally used for loading copper ore concentrates of the Philex mining company. However, since the latter part of 1979, under a special permit granted by PPA, other mining companies such as Benguet Consolidated Industries, Inc., Benguet Exploration, Inc., Baguio Gold Mines, Inc., Western Minolco Corporation and Black Mountain, Inc. load out their ore concentrates through the Philex Conveyor. It can handle 350 metric tons of mineral products per hour, The pier itself is 200 meters long. Philex has four warehouses with a total floor area of 1,250 square meters. It has a total port area of 34,000 square meters of which 14,674 square meters is alloted for open storage. Control depth of water below MLLWL is 10 meters.

2.1.4 Cargo Handling

There are two (2) Arrastre/Stevedoring contractors that service the Port. Northern Carriers Incorporated undertake exclusive cargo handling operations at the government pier while Shipside Incorporated handles exclusive cargo discharge and cargo loading at its own private pier. These are rights provided for in their respective Management Contracts with the Philippine Ports Authority.

2.1.5 Pilotage

The San Fernando Harbor Pilots Association provides the pilotage service in the port. Pilotage is compulsory for all vessels. They are met at the mouth of the harbor and are brought to the Quarantine area. After the boarding formalities in the case of foreign vessels, they are maneuvered to their allocated berths. On the other hand, coastwide vessels are brought by the harbor pilot direct from the anchorage area to their allocated berth.

2.1.6 Tug Assistance

One tugboat of 1,100 horsepower, owned and operated by Shipside Incorporated is available for docking, undocking and launch service. For vessels wishing to dock or undock at the Shipside pier, tug assistance is compulsory. For vessels docking or undocking at the government RC pier and at the Philex Mines conveyor, tug assistance is optional.

2.1.7 Bunker Supply

Bunker fuel is available at the Port of San Fernando. This is supplied by the four (4) oil terminals in the area and are delivered by road tankers having an average loading rate of ten (10) tons per hour.

2.1.8 Watering

Fresh water is supplied to vessels docked at the Shipside pier by Shipside Incorporated. Shipside has a 26,000 gallon capacity water tank that is fed by three (3) deepwell pumps with a pumping rate of 9 tons per hour. For vessels calling at the government pier, fresh water is supplied by the PMO Office.

2.1.9 Dockyard Facilities

Atlantic Gulf and Pacific Company (AG & P), with a working area of 1,200 square meters is located inside the Shipside grant. It maintains a dockyard facility that can service vessels of up to 20,000 GRT.

2.2 Sub-Port of Gaang ✓

The Sub-port of Gaang is found at Currimao, Ilocos Sur. It caters to both foreign and domestic shipping. It averages three (3) ship calls with an average cargo throughout of 594 metric tons per year. The physical facilities of the port are the following:

a. A pier of 200 meters in length and 15 meters in width
b. A warehouse with an area of 870 square meters
c. A total port area of 15,000 square meters
d. A causeway with a length of 235 meters
e. An approach length of 244.53 meters
f. A 200.50-meter breakwater
g. A 7.62-meter control depth of water below MLLWL

2.3 Sub-Port of Salomague

The Sub-port of Salomague is located in Cabugao, Ilocos Sur.

Since the approach to the reinforced concrete pier is heavily damaged, the pier is not fully operational. It is frequently used by vessels for sheltering during typhoons only. The physical facilities of the port are the following:

a. A pier of 120 meters in length and 9 meters in width
b. A warehouse of 200 meters in area
c. A total port area of 1,400 square meters
d. A causeway with a length of 27 meters
e. A four-meter (4) control depth of water below MLLWL

2.4 Sub-Port of Sulvec

The Sub-port of Sulvec is located at Narvacan, Ilocos Sur. Sulvec is not yet operational. It is usually used by passing vessels for sheltering during typhoons. Cellophil Resources Corporation in Tayum, Abra is contemplating of using this port

to transport their wood products to Manila. The physical facilities of the port are the following:

a. A pier of 53.10 meters in length and 11.90 meters in width

b. An open storage area of 650 square meters

c. A causeway with a length of 262 meters

d. An approach length of 24 meters

e. A 4.50-meter control depth of water below MLLWL

2.5 Sub-Port of Sual

The Sub-port of Sual is situated on the western part of Pangasinan. The vast Lingayen Gulf with its natural harbor along the northern portion of Sual makes it a very ideal port and most vessels seek shelter at Sual waters during inclement weather. Sual port is not intended for coastwise and foreign vessels. The wharf is presently used by motorized bancas and small shipping vessels. The physical facilities of the port are the following:

a. A causeway with a length of 163.5 meters

b. A 1.80-meter control depth of water below MLLWL

2.6 Other Ports Within the Port District

The proliferation of mining firms in the region is primarily due to its various metallic and non-metallic mineral reserves. Hence, most private ports in the port district are owned by mining firms engaged in the export of mineral ore and concentrates. (See Table 2).

Annex 1

TABLE 1 · SHIPPING AND TRADE STATISTICS PORT DISTRICT OF SAN FERNANDO AT BERTH

PARTICULARS	TOTAL		BASEPORT		SUBPORT CURRIMAO		PRIVATE PORTS	
	1980	1981	1980	1981	1980	1981	1980	1981
DOMESTIC SHIPPING								
1. Number of Vessels	423	291	222	120	7	2	194	167
2. Gross Registered Tonnage	288333	364278	225956	212674	3175	601	159202	149502
3. Net Registered Tonnage	243904	223715	135020	123503	2151	377	106733	99028
4. Deadweight Tonnage	582897	555072	329700	310667	3293	1050	249904	240709
5. Lenght (m.)	23644	16133	9804	7311	447	74	13393	8632
6. Maximum Lenght (m.)	166	163	160	160	120	43	166	163
7. Beam (m.)	3649	2744	1732	1153	65	14	1852	1557
8. Maximum Beam (m.)	72	56	22	28	12	10	72	56
9. Draft (m.)	1641	-	756	-	34	6	851	-
10. Maximum Draft (m.)	18	-	11	-	8	4	10	-
11. Waiting Time (hrs.)	1968	2587	739	721	-	193	1229	1858
12. Service Time (hrs.)	17000	17210	7738	4835	212	357	9050	12178
13. Cargo Tonnage Handled	498172	472989	295727	280506	732	357	201713	190847
Inward	463074	430281	295369	278906	732	nil	166973	149739
Outward	35098	42774	358	1666	-	-	34740	41108

PARTICULARS	TOTAL 1980	TOTAL 1981	BASEPORT 1980	BASEPORT 1981	SUBPORT CURRIMAO 1980	SUBPORT CURRIMAO 1981	PRIVATE PORTS 1980	PRIVATE PORTS 1981
FOREIGN SHIPPING								
1. Number of Vessels	226	162	57	28	2	-	167	134
2. Gross REgistered Tonnage	1218352	986569	230094	113763	18917	-	969341	872806
3. Net Registered Tonnage	841214	837823	212571	69301	10769	-	617874	768442
4. Deadweight Tonnage	1874146	1530561	332082	180415	25063	-	1516201	1350146
5. Lenght (m.)	26281	24302	6303	2797	296		19682	21505
6. Maximum Lenght (m.)	195	281	183	165	156	-	195	281
7. Beam (m.)	4537	2952	992	523	41	-	3504	2429
8. Maximum Beam (m.)	72	101	34	101	21	-	72	48
9. Draft (m.)	1502	-	340	-	12	-	1150	-
10. Maximum Draft (m.)	20	-	10	-	10	-	20	-
11. Waiting Time (hrs.)	3617	2907	775	235	44	-	2798	2672
12. Service Time (hrs.)	16370	12744	6449	4028	147	-	9774	8716
13. Cargo Tonnage Handled	1080349	896243	239066	125580	20900	-	820383	770663
Import	124683	115341	33306	18530	-	-	91377	96811
Export	955666	780902	205760	107050	20900	-	729006	673852

Source: PPA 1980/81 Annual Statistical Reports.

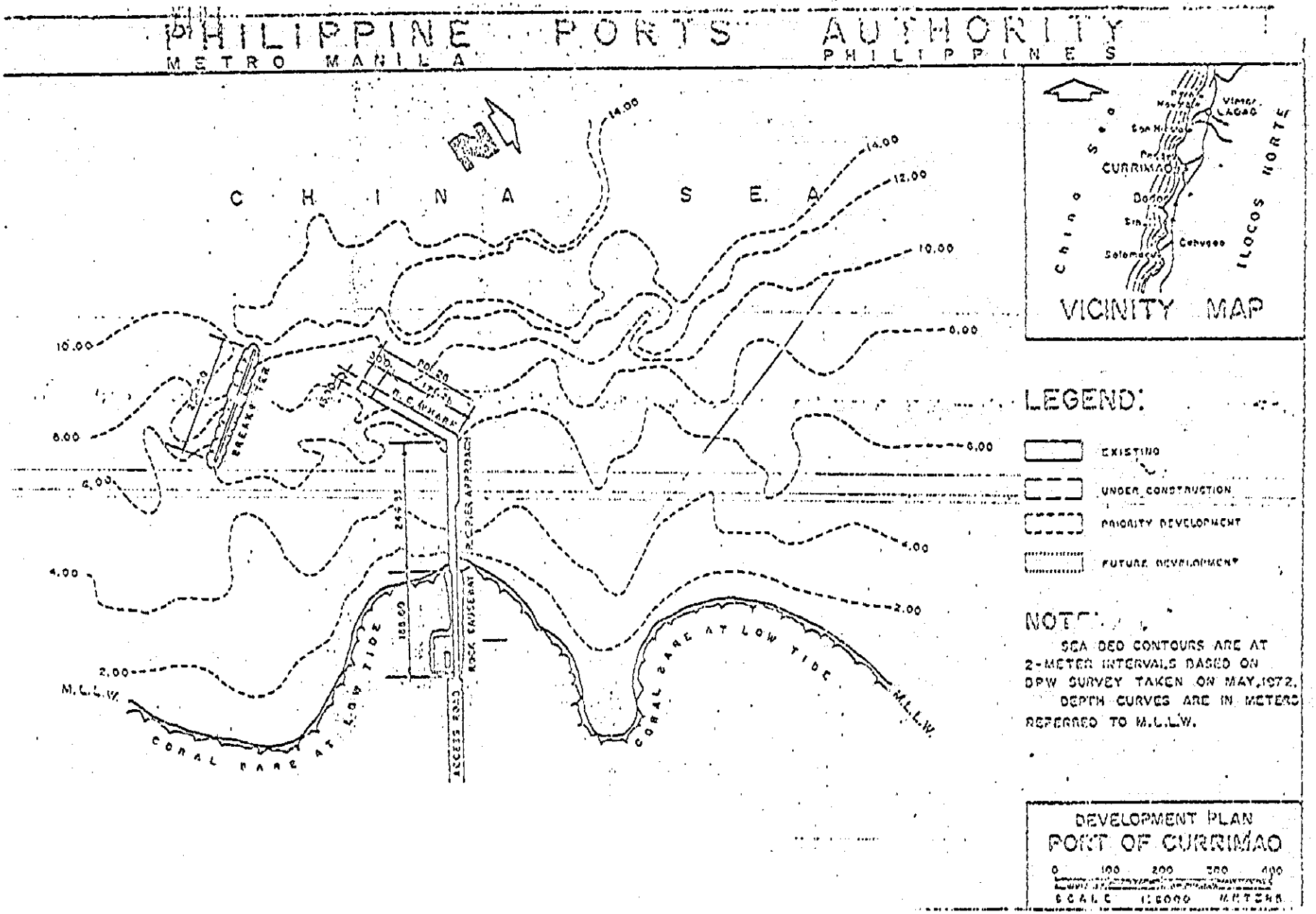
OTHER PORTS WITHIN THE PORT DISTRICT

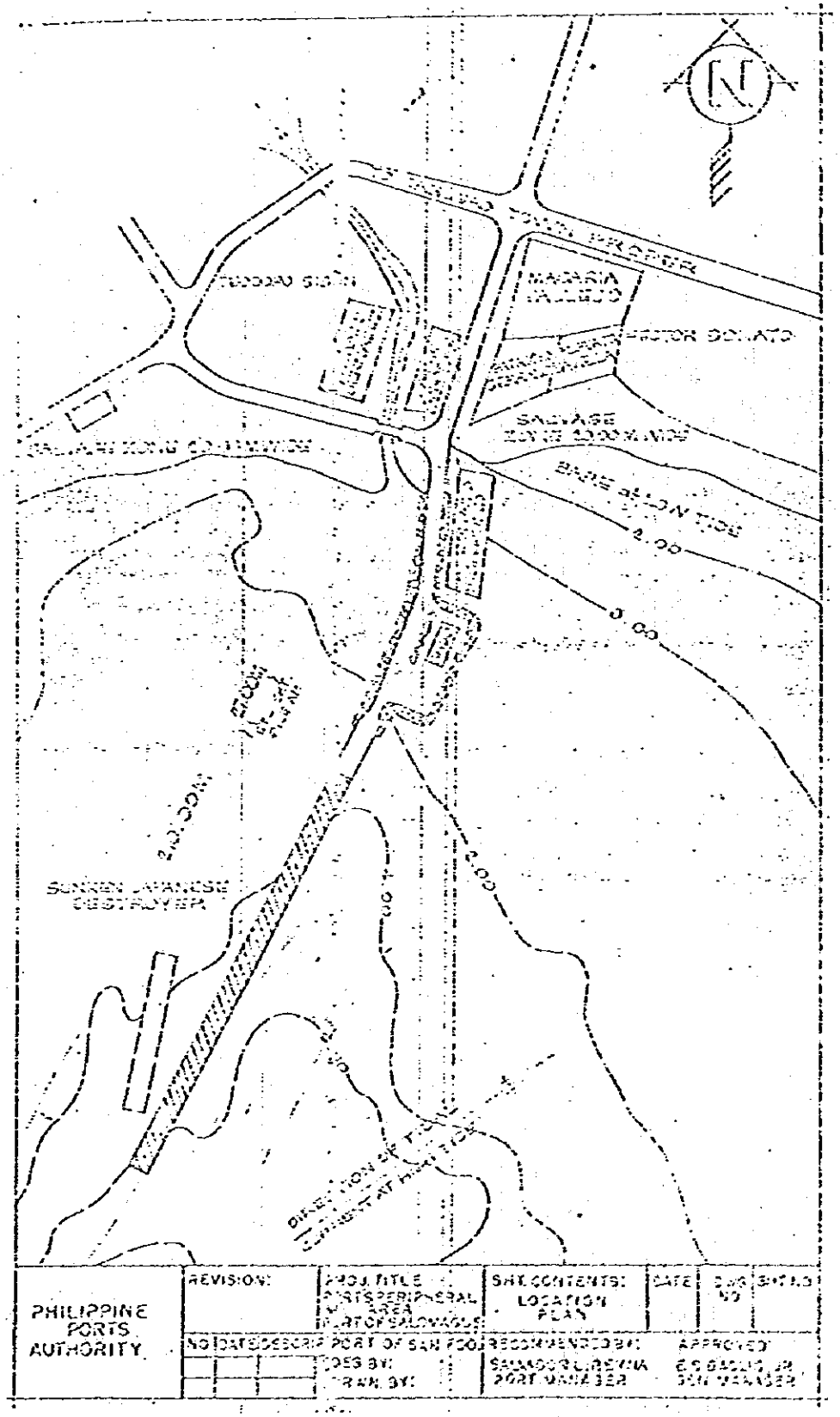
PORTS	TYPE	LOCATION	MAJOR COMMODITIES HANDLED
Province of La Union			
1. AG & P	Pr	San Fernando, La Union	Other General Cargo and Tobacco, Shipyard
2. Caltex Phil. Inc.	Pr	- do -	Oil and Oil Products
3. Philex Mining Corp.	Pr	- do -	Copper Concentrate
4. Shipside Inc.	Pr	- do -	Oil products, Copper Concentrate, Cement and Coal
Province of Pangasinan			
1. Alaminos Causeway/Wharf	M	Alaminos, Pangasinan	
2. Bolinao Causeway/Wharf	M	Bolinao, Pangasinan	
3. Bolinao Causeway (Luciente)	M	Bolinao, Pangasinan	
Province of Zambales			
1. Acoje Mining Company (Conveyor)	Pr	Sta. Cruz, Zambales	Chrome Ore, Copper Concentrate and Pyrite Concentrate
2. Benguet Consolidated Inc. (Conveyor)	Pr	Bolocanon, Masinloc, Zambales	Chrome Ore
3. Orlib (Conveyor)	Pr	Palawig, Zambales	Chrome Ore
4. Petron	Pr	Masinloc, Zambales	Oil Products
5. Santos Wharf	Pr	Masinloc, Zambales	Chrome Ore

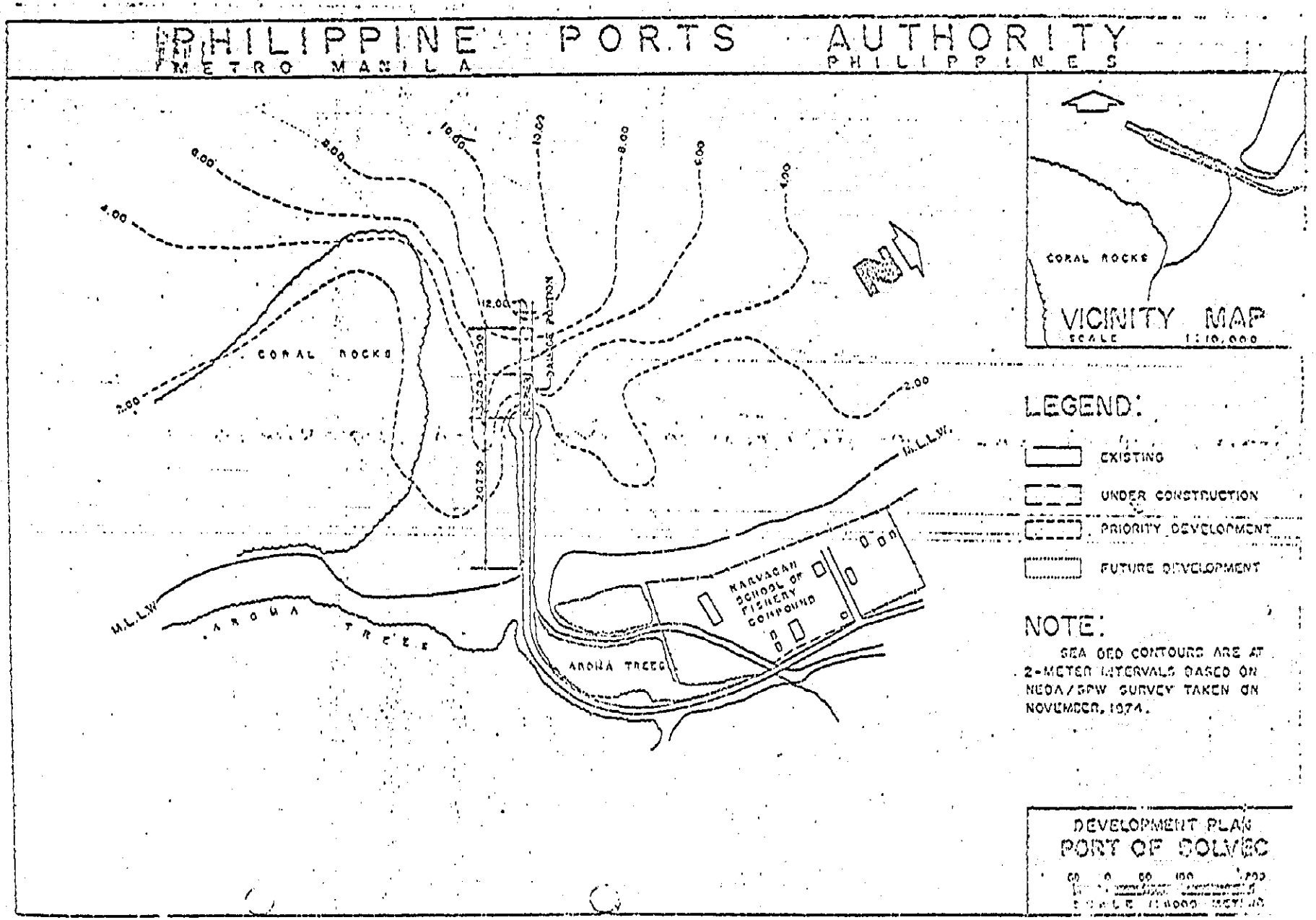
LEGEND:

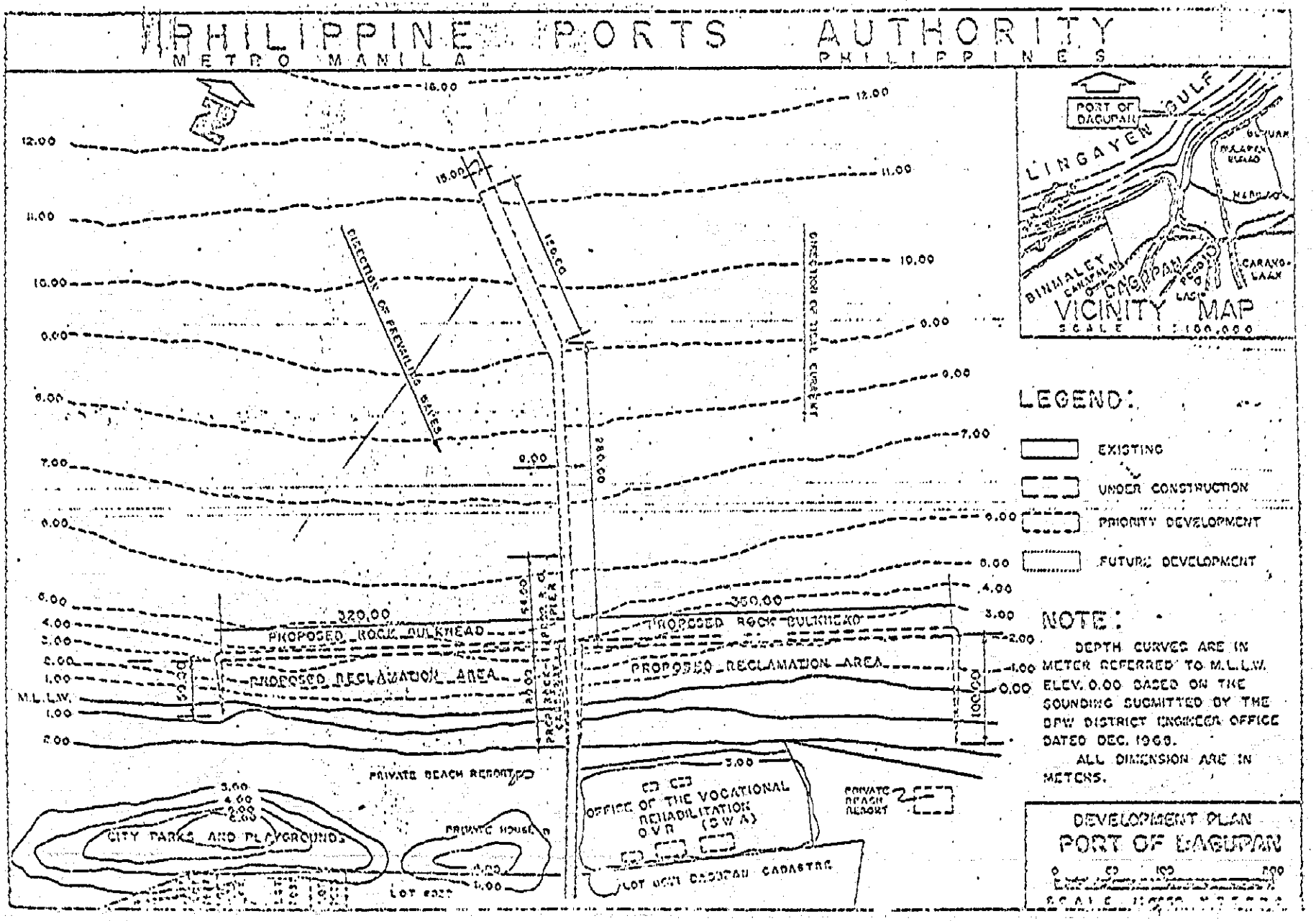
Pr - Private Port
M - Municipal Port

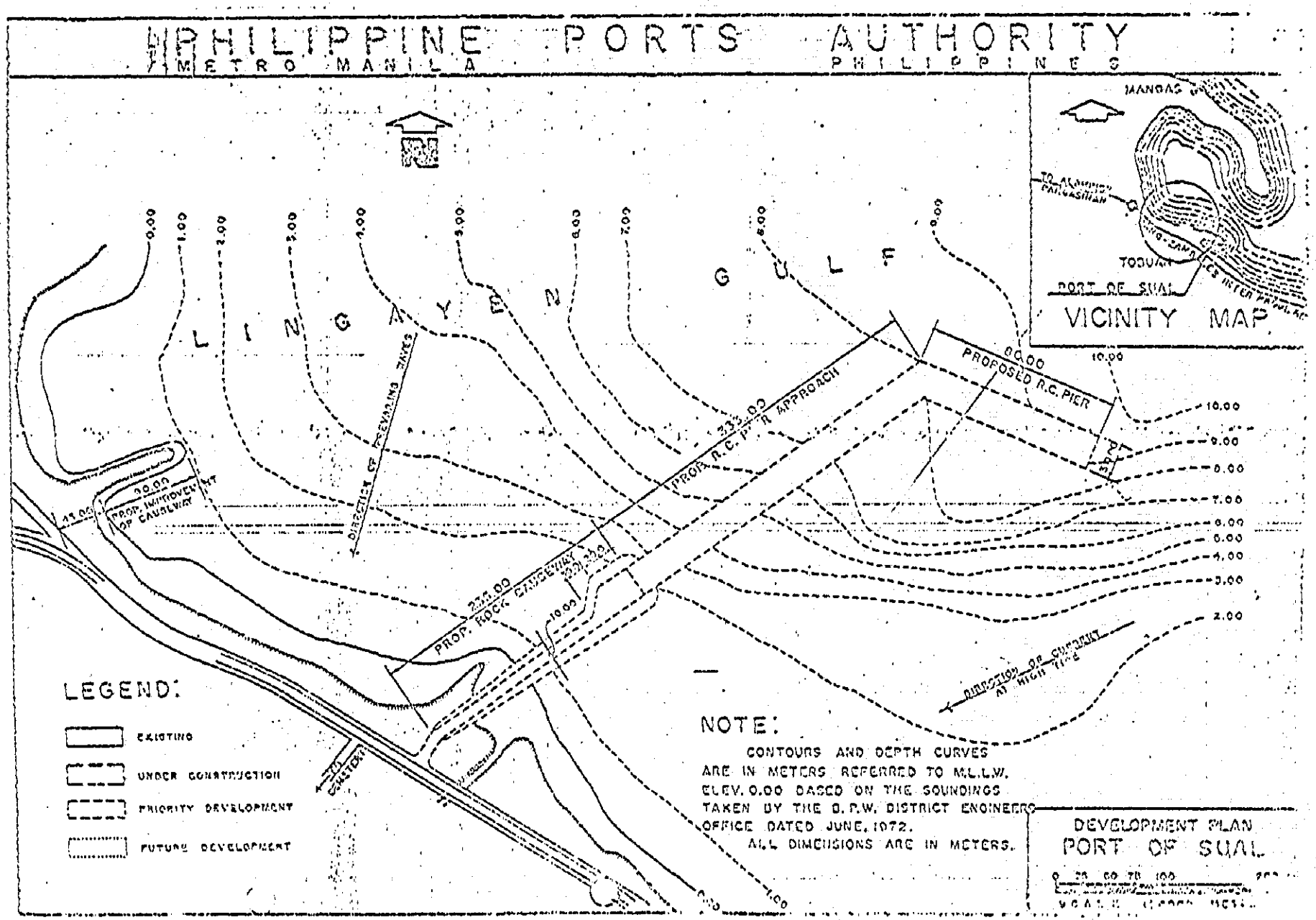
Source: PPA 1980 Inventory of Port Facilities and Services

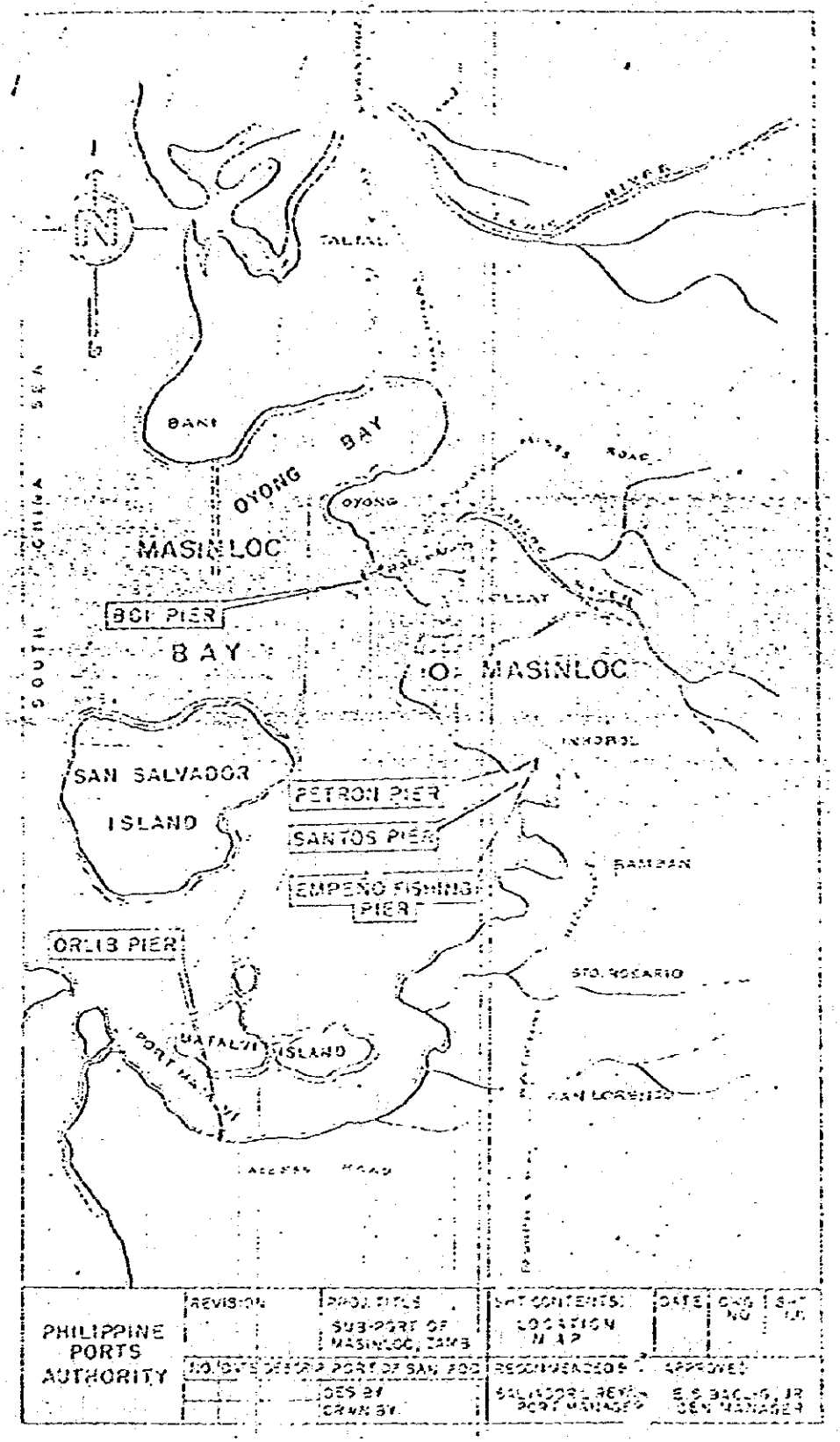

PHILIPPINE PORTS AUTHORITY
METRO MANILA
PHILIPPINES
CHINA SEA
14.00
12.00
10.00
8.00
6.00
4.00
2.00
M.L.L.W.
CORAL SAND AT LOW TIDE
ACCESS ROAD
ROCK EMBEDMENT
BREAKWATER
P.C.I.S. WHARF
VICINITY MAP
CURRIMAO
Dingras
Sinait
Cabugao
Solsona
Vintar
Laoag
ILOCOS NORTE
LEGEND:
EXISTING
UNDER CONSTRUCTION
PRIORITY DEVELOPMENT
FUTURE DEVELOPMENT
NOTE:
SEA DEO CONTOURS ARE AT 2-METER INTERVALS BASED ON DPW SURVEY TAKEN ON MAY, 1972.
DEPTH CURVES ARE IN METERS REFERRED TO M.L.L.W.
DEVELOPMENT PLAN
PORT OF CURRIMAO
0 100 200 300 400
SCALE 1:8000 METERS


N
MAGARIA
SALVAGE
BASE @ LOW TIDE
2.00
3.00
SUNKEN JAPANESE
DESTROYER
PHILIPPINE
PORTS
AUTHORITY
REVISION:
PROJ. TITLE:
PORTS PERIPHERAL
AREA
PART OF SALOMAGUE
SHT. CONTENTS:
LOCATION
PLAN
DATE
DWG
NO
SHT. NO.
NO
DATE
DESCRIP
PORT OF SAN FDO.
RECOMMENDED BY:
APPROVED
DES. BY:
DRN. BY:
SALVADOR LAREÑA
PORT MANAGER
E.S. BACUÑO JR.
PORT MANAGER


PHILIPPINE PORTS AUTHORITY
METRO MANILA
PHILIPPINES
CORAL ROCKS
M.L.L.W.
ARONA TREES
NARVACAN SCHOOL OF FISHERY COMPOUND
VICINITY MAP
SCALE 1:10,000
LEGEND:
EXISTING
UNDER CONSTRUCTION
PRIORITY DEVELOPMENT
FUTURE DEVELOPMENT
NOTE:
SEA DED CONTOURS ARE AT 2-METER INTERVALS BASED ON NEDA/BPW SURVEY TAKEN ON NOVEMBER, 1974.
DEVELOPMENT PLAN
PORT OF SOLVEC


PHILIPPINE PORTS AUTHORITY
METRO MANILA PHILIPPINES
PORT OF DAGUPAN
LINGAYEN GULF
VICINITY MAP
SCALE 1:100,000
LEGEND:
EXISTING
UNDER CONSTRUCTION
PRIORITY DEVELOPMENT
FUTURE DEVELOPMENT
NOTE:
DEPTH CURVES ARE IN METER REFERRED TO M.L.L.W. ELEV. 0.00 BASED ON THE SOUNDING SUBMITTED BY THE DPW DISTRICT ENGINEER OFFICE DATED DEC. 1968.
ALL DIMENSION ARE IN METERS.
DIRECTION OF PREVAILING WAVES
PROPOSED ROCK BULKHEAD
PROPOSED RECLAMATION AREA
PROPOSED ROCK BULKHEAD
PROPOSED RECLAMATION AREA
PROPOSED PIER
PRIVATE BEACH RESORT
CITY PARKS AND PLAYGROUNDS
PRIVATE HOUSE
OFFICE OF THE VOCATIONAL REHABILITATION OVR (DWA)
PRIVATE BEACH RESORT
LOT NO.1 DAGUPAN CADASTRE
LOT 6020
DEVELOPMENT PLAN
PORT OF DAGUPAN
SCALE


PHILIPPINE PORTS AUTHORITY
METRO MANILA PHILIPPINES
LINGAYEN GULF
VICINITY MAP
MANDAS
TODUAN
PORT OF SUAL
PROP. R.C. PIER APPROACH
PROPOSED R.C. PIER
PROP. ROCK CAUSEWAY
PROP. IMPROVEMENT OF CAUSEWAY
DIRECTION OF PREVAILING WAVES
DIRECTION OF CURRENT AT HIGH TIDE
CEMETERY
LEGEND:
EXISTING
UNDER CONSTRUCTION
PRIORITY DEVELOPMENT
FUTURE DEVELOPMENT
NOTE:
CONTOURS AND DEPTH CURVES ARE IN METERS REFERRED TO M.L.L.W. ELEV. 0.00 BASED ON THE SOUNDINGS TAKEN BY THE B.P.W. DISTRICT ENGINEERS OFFICE DATED JUNE, 1972.
ALL DIMENSIONS ARE IN METERS.
DEVELOPMENT PLAN
PORT OF SUAL


N
SOUTH CHINA SEA
BANI
OYONG BAY
OYONG
MASINLOC
BCI PIER
BAY
O: MASINLOC
SAN SALVADOR ISLAND
PETRON PIER
SANTOS PIER
EMPEÑO FISHING PIER
ORLIB PIER
BATALVI ISLAND
BAMBAN
STO. ROSARIO
PHILIPPINE PORTS AUTHORITY
PROJ. TITLE
SUB-PORT OF MASINLOC, ZAMB
SHT CONTENTS:
LOCATION MAP
DATE
DRG NO
SHT NO
RECOMMENDED
APPROVED
E. S. BACLIG, JR
GEN MANAGER

4 - 4 QUESTIONNAIRE

OCTOBER, 1982

THE JAPANESE PRELIMINARY SURVEY TEAM

FOR THE DEVELOPMENT PROJECT OF THE PORT OF SAN FERNANDO

IN THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

The preliminary survey team has already consulted the following publications concerning the development plans of the Philippines and the general information on the Port District of San Fernando and gained considerable amount of information so far.

The purpose of the questionnaire is to clarify and deepen our understanding on the study and to recognize the availability of the newest and further information on the objective area for the full scale study which will be followed by this preliminary survey.

We appreciate if you give us your comments and/or show the relevant data for our understanding when the team calls on you. Consultation with other institution may be necessary for some questions.

The expected response is devided into three types.

The first one is to give your comments on the items on which no sign is put.

The second one is to hand in full materials on the items on which * is put.

The other one is to hand in copies of a part of the materials on the items on which ** is put.

1.	"Five Year Philippine Development Plan 1978/1982"	NEDA
2.	"Long-term Philippine Development Plan up to the Year 2000"	NEDA
3.	"1978 PPA Annual Statistical Report"	PPA
4.	"1979 Statistical Year Book"	PPA
5.	"1980 Inventory of Port Facilities and Service"	PPA
6.	"Tropical Cyclones 1975"	Negads Pagasa
7.	"Tide and Current Tables Philippines 1977"	BCGS

1. General

(1) The basic government policy regarding the port development in the Philippines

(2) The criteria to adopt a port as the government port in comparison with the municipal port

(3) The role of the Port of San Fernando in Region I with respect to manufacturing and mining industries, agriculture, and tourism

(4) The problems or dissatisfaction of shipping agents and consigners/consignees regarding the present cargo transportation system in Region I

(5) Other information related to the port development of the Port of San Fernando

2. Socio-economic Data

(1) Economic activities in Region I

The team has the information on the agricultural activities but not mining, manufacturing nor forestry.

(a)* Maps which shows the location of the mining and manufacturing industries with their names, the type of producting goods and the production scale (value and volume)

(b)* Maps of the estimated natural resources deposit by material and its volume

(c) Forest resource and the possibility of lumber industry

(2) Economic development plans/programs in Region I

(a) The role of Region I in the national economy

(b) The sectors on which the government and local government put emphasis in Region I

i) Manufacturing development programs and its location proposed

ii) Mining development programs and its location proposed

iii) Agricultural development programs

iv) Development programs for tourism

(c)* Studies/Reports on the regional development plans related to Region I so far carried out

3. Transportation

The team has already obtained the general information on transportation activities in the Philippines and expects the information to get as follows;

(1) It seems that the traffic demand on railways is drastically decreasing recently according to the reference materials. What is the government policy regarding the rail development and usage compared with other modes in the national transportation framework ?

(2)* Results of the latest traffic survey in Luzon especially "National Transport System Study", Jan. 1980

(3)* Maps of major domestic sea routes in the Philippines

4. Data/Information of each port located in the Port District of San Fernando including private and municipal ports

(1) Existing port facilities

(a) Maps and drawings

i)* Layout of the existing facilities in each port

ii)* Port plans in future in each port

iii)* Standard sectional plans of the Government Pier, the Shipside Pier and the Philex Pier in San Fernando

(2) Port activities

(a)* Origin and destination of export/import cargo traffic by commodity classification and its volume

(b)* Cargo traffic between ports and their hinterland by mode and commodity classification

(c) The definition of "berth occupancy rate" and "average tonnage handled per meter run" in "1979 Statistical Year Book, PPA"

(d) The availability of the statistics of cargo traffic in sub-ports other than Currimao, and municipal ports

(e) The reason why no cargo data is available concerning Caltex Phil. Pier of San Fernando

(3) Port management

(a) The Port Management Unit of San Fernando (PMU)

i)* Organization chart and the number of personnel of each section (staff/worker)

ii) Scope of business of the PMU

iii) The relationship between the PMU and the Ministry of Public Works and Highways for the port construction

iv)* Annual budget and its break down (for recent three years)

v)* Financial documents such as B/S, P/L and S/A (for recent two years)

(b) Relating government offices and enterprises in San Fernando

5. Natural Conditions of the Port of San Fernando

(1) Meteorological conditions

(a)* location of meteorological station near San Fernando

(b)** Content and record period of the materials of meteorological observation data as follow;

i) Weather condition

ii) Wind data

iii) Weather chart

(c)* Data on cyclon and other special meteorological phenomenon if available

(2) Hydrographical conditions

(a)* location of tide station in San Fernando

(b)** Content and record period of the materials of tidal observation data

(c)* Tidal range and tidal level of HHWL, HWL, LWL, LLWL in San Fernando

(d)* Data on storm tide if available

(e)* Current speed if available

(f)* Littoral drift if available

(3) Topographical conditions

(a)* Topographical map

(b)* Coastal topographical map (including sea area)

(4) Geological conditions

(a)* Records of soil investigation

6. Major Engineering Consultants and Surveyors to carry out the investigation works on the natural conditions in the Philippines

(1) Name and speciality

(2) Number of engineers

(3) Type of equipment for investigation and its quantities

(4)* Results and outcomes of investigation in a recent few years

(5) The method of cost estimates for the investigation work in the Philippines

7. Others

(a) City plan and land use plan in the vicinity of the Port of San Fernando

(b) Fishery activities and fishery right in the Port District of San Fernando

(e)* Current speed if available

(f)* Littoral drift if available

(3) Topographical conditions

(a)* Topographical map

(b)* Coastal topographical map (including sea area)

(4) Geological conditions

(a)* Records of soil investigation

6. Major Engineering Consultants and Surveyors to carry out the investigation works on the natural conditions in the Philippines

(1) Name and speciality

(2) Number of engineers

(3) Type of equipment for investigation and its quantities

(4)* Results and outcomes of investigation in a recent few years

(5) The method of cost estimates for the investigation work in the Philippines

7. Others

(a) City plan and land use plan in the vicinity of the Port of San Fernando

(b) Fishery activities and fishery right in the Port District of San Fernando