TABLE 5.1-6 EXISTING CONDITIONS ADJACENT TO PROJECT AREA

NO.	ITEMS	CONDITIONS	DESCRIPTION
1	Number of ships	Approx. 100	Small type of fishing boat
2	Number of families	Approx. 50	Simple frame house for fishermen etc.
3	Type of shops	Small restaurants	Permanent construction, wooden made,
		Small food shops	Permanent construction, wooden made,
		Small daily use commodities shop	Permanent construction, wooden made,
		Open air shop	Without building
		soft drink shop	
		fish shop	Purchasing shrimps from fishermen
		fruit shop	
		daily use commodities	
4	Factories	Ship build factory	For small type of fishing boats, including repair works,
		Nursery building for fish	Exported to Hong kong,
5	Public facilities	wooden made jetty	
		slipway	
6	Government building	Immigration police	Small type of building, one room
7	Power supply system	Available, used for lighting system, etc.	Temporary wiring, private power source

TABLE 5.2.1 DATA OF IMPORTED OIL FROM SIHANOUKVILLE

YEAR	QUANTITY	NOTES
1990	17,776	unit : ton
1991	1,095	
1992	5,112	
1993	23,119	
1994	34,904	
1995	53,899	
	source : Sihanoukville Port	

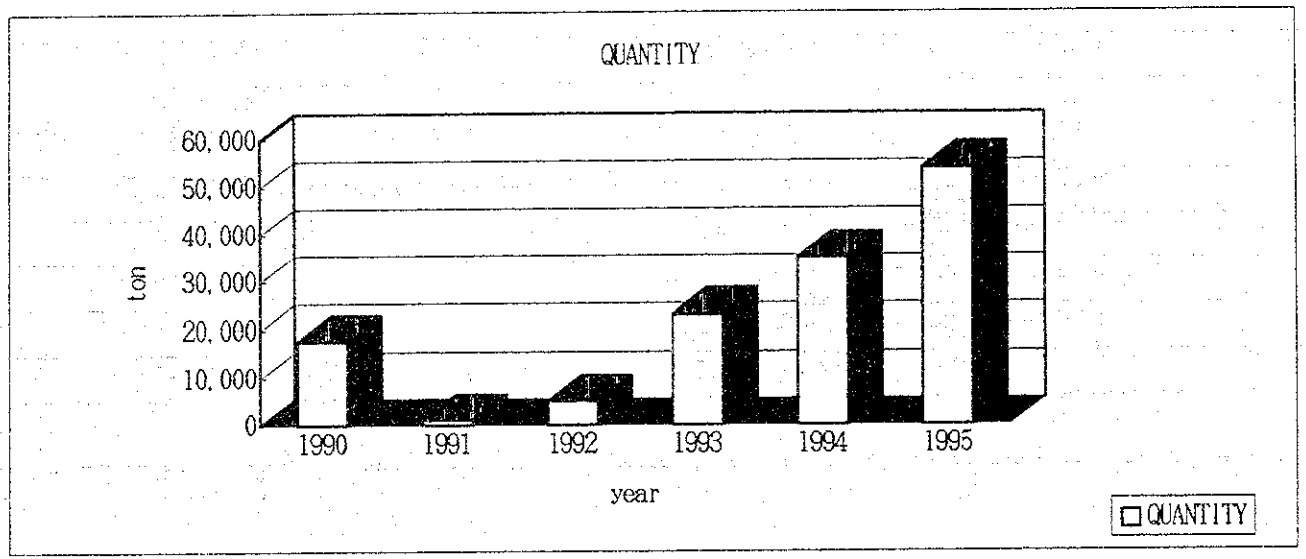


TABLE 5.2-2 SOURCES AND DISPOSAL METHODS OF WASTE OIL

Source of waste oil	Ships in which waste oil is produced	Definition	Disposal methods
Bilge	Every ship	Is oily mixture collected in the bottom of ship. Refers to mixed water of lub, oil or fuel oil in the engine room and sea water.	1. For almost every ship, bilge is collected as collect oil and treated at a waste oil disposal facility. In large ships, however, bilge is burned at an incinerator on the ship. 2. Bilge is treated directly at a waste oil disposal facility.
Ballast	Tankers, fishing boats	Refers to water loaded in the ballast tank or exclusive tank to stabilize a ship. Ballast water loaded in the exclusive tank on in the tank well cleaned is called clean ballast, and ballast water in tank being dirty is called dirty ballast.	(Coasting tankers) Ballast water is directly treated at a waste water disposal facility. (Ocean going tankers) Ballast water is usually collected as slop oil and added to cargo oil, therefore no disposal is required (is called Load on Top method). (Fishing boats) 1. Ballast water is collected as collect oil using an oil separator on the ship. 2. Ballast water is directly treated at a waste oil facility.
Tank cleaning water	Tankers	Is produced when cargo oil and fuel oil tanks are cleaned, and when another cargo oil is to be loaded and tanks are repaired.	Tank cleaning water is directly treated at a waste oil disposal facility. For ocean going tankers, cargo oil tanks are cleaned during a sail, and the tank cleaning water is collected as slop oil and treated by Load on Top method.
Collect oil	Every ship	Refers to collected oil produced when bilge water is treated at an oil separator on the ship.	The collect oil is directly treated at a waste oil disposal facility. For large ships, however, this collect oil is burned at an incinerator on the ship.
Slop oil	Tankers	Refers to oil produced by the difference of the specific gravities of water and oil, when dirty ballast water and tank cleaning water are collected and left still in a slop tank in the ship.	The slop oil is directly treated at a waste oil disposal facility, For ocean going tankers, the slop oil is produced by Load on Top method.
Sludge	Every ship	Refers to oily dirt mixture remained on the bottom of tanks in the ship.	The sludge is burned at an incinerator on the ship. It is treated at a waste oil disposal facility.

Note : Load on Top method. In this method, ballast water is not thrown overboard, but treated by a suitable equipment in the ship. That is, the sea water in ballast water is separated and thrown overboard as much as possible, and then the remaining oil containing a slight water is collected in a specific tank (a slop tank).
This slop oil is added to cargo oil at the next oil loading.

TABLE 5.2-3 KIND OF SOLID WASTE

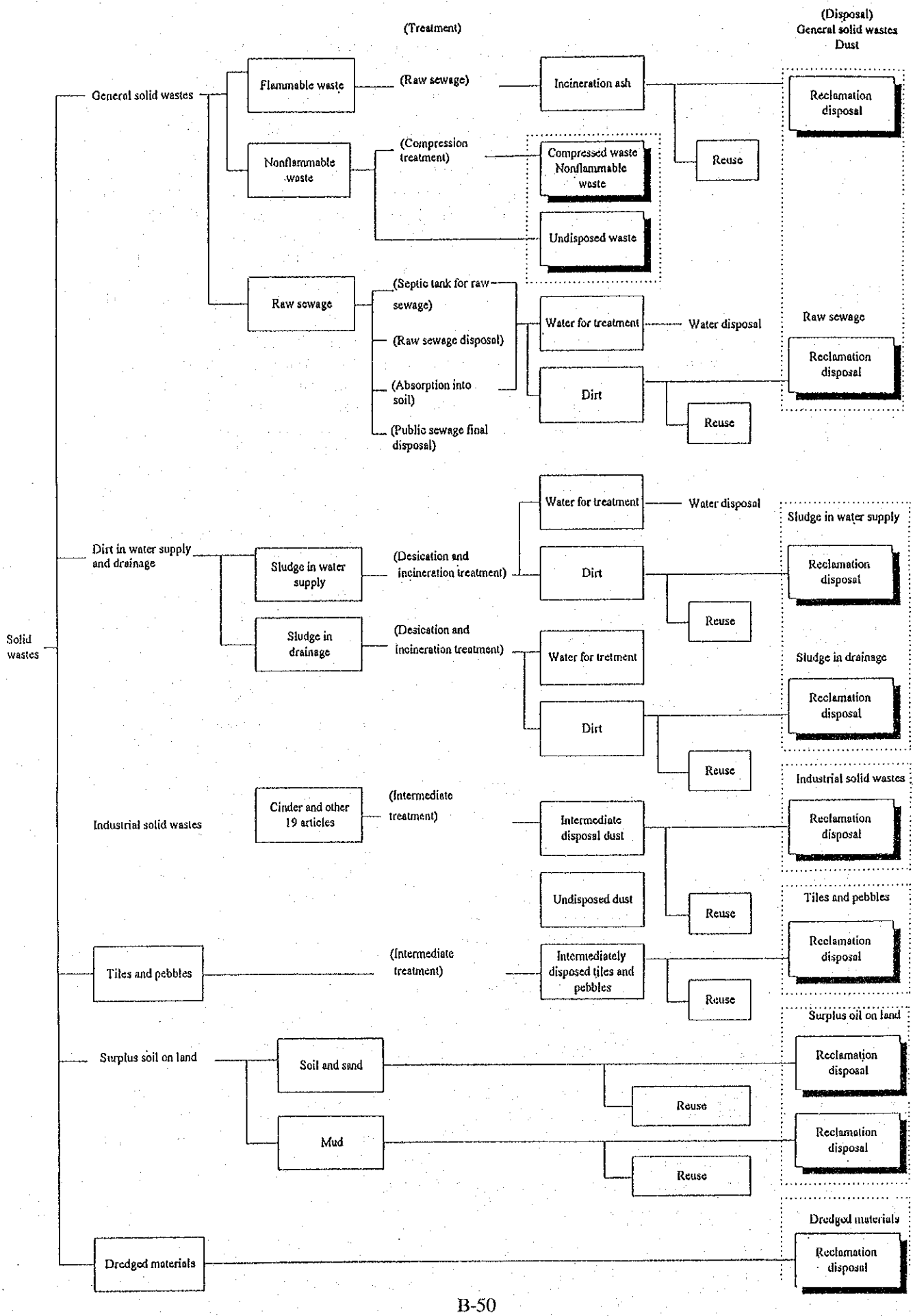


Table 5.2-4 Summary of Chemical Test Results of Sea Water Samples

TEST	TEST METHOD	CHEMICAL TEST RESULTS (mg/l)													
		St. 1	St. 2	St. 3	St. 4		St. 5	St. 6		St. 7		St. 8		St. 9	St. 10
		Surface	Surface	Surface	Surface	Middle	Surface	Surface	Middle	Surface	Middle	Surface	Middle	Surface	Surface
pH	-	6.62	6.61	6.60	6.60	6.60	6.56	6.53	6.53	6.13	6.13	6.57	6.57	6.64	6.65
Total Suspended Solids (SS)	APHA 2540 D	40	40	50	40	45	55	45	35	35	35	25	30	40	25
Chemical Oxygen Demand (COD)	(*)	0.5	0.5	0.6	0.2	0.4	0.1	0.2	0.4	0.3	0.2	0.2	0.1	0.1	0.2
Dissolved Oxygen (DO)	APHA 4500-OC	4.7	5.6	5.0	5.8	5.4	5.2	5.9	5.1	5.2	5.4	5.0	5.4	5.1	5.6
Oil & Grease (n-hexane soluble matter)	APHA 5520 B	6	11	10	N.D.	11	N.D.	13	18	N.D.	7	N.D.	8	11	22
Total Coniform at 35°C/ 24hrs (n-hexane solube matter)	APHA 9222 B	40	2	8	6	4	470	28	22	<2	140	410	<2	600	<2
Total Nitrogen (T-N)	APHA 4500	0.66	1.0	0.65	0.68	0.69	0.77	0.73	0.55	0.67	0.52	0.69	0.67	0.52	0.25
Total Phosphorus (T-P)	(*)	0.03	N.D.	N.D.	N.D.	0.02	0.02	0.02	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	<0.01
Total Mercury (T-Hg)	APHA 3500-Hg B	0.004	0.002	0.003	N.D.	0.003	N.D.	0.002	N.D.	0.002	0.002	N.D.	N.D.	N.D.	0.002
R-Hg	APHA 3500-Hg B	0.002	N.D.	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Cadmium (Cd)	APHA 3500-Cd B	0.002	N.D.	0.002	N.D.	0.002	N.D.	0.002	0.002	0.002	0.002	N.D.	0.002	N.D.	0.002
Cyanide (CN)	APHA 4500-CN F	0.07	0.04	0.09	0.03	0.04	0.04	0.04	0.04	0.03	0.04	0.07	0.09	0.04	0.09
Or-P	(*)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	<0.01
Lead (Pb)	APHA 350-Pb B	0.27	0.19	0.14	0.22	0.21	0.08	0.15	0.29	0.16	0.23	0.21	0.2	N.D.	0.22
Chromium (Cr)	APHA 3500-Cr B	0.03	0.03	N.D.	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.05	0.02
Arsenic (As)	APHA 3500-As B	0.003	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.002	N.D.	N.D.
Polychlorinated Biphenyls (PCB)	APHA 4500-OC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

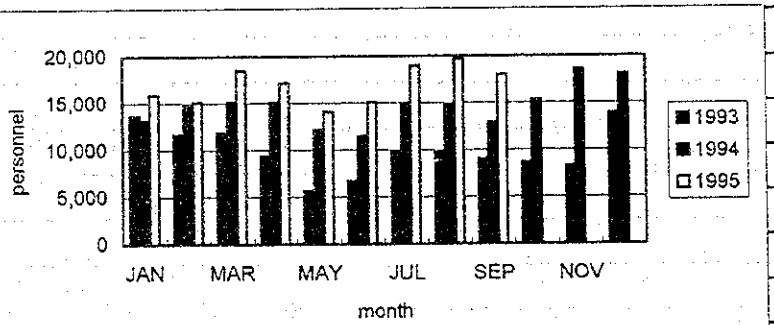
Note : (*) : - A Manual on Chemical Analysis of Coastal Water adn Bottom Sediment by Primary Production Department/Marine Fisheries Research Department, Singapore 1984.

Table 5.2-5 Summary of Chemical Test Results of Seabed Soil Samples

TEST	TEST METHOD	CHEMICAL TEST RESULTS (mg/kg)									
		St. 1	St. 2	St. 3	St. 4	St. 5	St. 6	St. 7	St. 8	St. 9	St. 10
pH value (1:2.5) (Soil:Water Extract)	(**)	7.5	8.0	7.9	7.6	100% of Shell Fragment	8.7	8.1	8.2	8.0	8.2
Ignition Loss at 900°C (% wt.)	(**)	18.0	20.6	5.8	26.3	100% of Shell Fragment	16.6	9.9	17.5	4.6	4.2
Oil & Grease (n-hexane soluble matter)	EPA 9071 A	2.3	6.7	6.5	10	100% of Shell Fragment	4.3	3.5	3.1	2.8	3.5
Chemical Oxygen Demand (COD)	(*)	147.6	34.55	11.35	90.65	100% of Shell Fragment	10.5	24	59.35	1.85	14.45
Total Sulphate (T-S)	BS 1377 Part3:1990	1.03	1.13	0.23	0.80	100% of Shell Fragment	0.37	0.32	0.80	0.11	0.48
Total Nitrogen (T-N)	(**)	3900	3390	1380	4330	100% of Shell Fragment	410	1980	3460	1150	870
Total Phosphorus (T-P)	(*)	4.3	3.1	1.9	20	100% of Shell Fragment	0.3	9.0	5.6	6.8	3.3
Total Mercury (T-Hg)	EPA 3051	0.002	0.001	N.D.	0.002	100% of Shell Fragment	N.D.	0.001	0.001	N.D.	0.001
R-Hg	EPA 3051	N.D.	N.D.	N.D.	N.D.	100% of Shell Fragment	N.D.	N.D.	N.D.	N.D.	N.D.
Cadmium (Cd)	EPA 3051	1.6	1.1	0.7	1.5	100% of Shell Fragment	1.2	0.5	1.1	<0.1	<0.1
Cyanide (CN)	APHA 4500-CN F	1.12	0.6	0.78	0.72	100% of Shell Fragment	0.014	0.17	0.35	0.13	0.18
Or-P	(*)	1.2	0.3	0.6	0.8	100% of Shell Fragment	<0.1	1.6	1.3	2.1	1.2
Lead (Pb)	EPA 3051	16	12	3.6	12	100% of Shell Fragment	0.9	12	16	2.4	16
Chromium (Cr)	EPA 3051	23	22	1.5	18	100% of Shell Fragment	1.7	6.9	25	7.0	7.4
Arsenic (As)	EPA 3051	5.5	5.1	1.9	5.5	100% of Shell Fragment	2.1	2.6	3.2	1.5	1.7
Polychlorinated Biphenyls (PCB)	EPA 8270 (MOD)	N.D.	N.D.	N.D.	N.D.	100% of Shell Fragment	N.D.	N.D.	N.D.	N.D.	N.D.
Copper (Cu)	EPA 3051	49	87	6.3	18	100% of Shell Fragment	0.5	5.9	13	26	4.9
Zinc (Zn)	EPA 3051	92	56	19	70	100% of Shell Fragment	64	23	41	12	15

TABLE 5.3-1 VISITORS' ARRIVALS TO CAMBODIA BY MONTH

MONTH	YEAR			NOTES
	1993	1994	1995	
JAN	13,722	13,136	15,934	
FEB	11,638	14,847	15,107	
MAR	11,877	15,143	18,527	
APR	9,315	15,149	17,190	
MAY	5,626	12,140	14,083	
JUN	6,677	11,470	15,114	
JUL	9,847	15,030	18,975	
AUG	9,712	14,743	19,624	
SEP	8,998	12,931	18,029	
OCT	8,608	15,332	na	
NOV	8,237	18,614	na	
DEC	13,926	18,082	na	
TOTAL	118,183	176,617	152,583	



source : Ministry of Tourism, Tourist Magazine 1995

TABLE 5.3-2 TOURIST INFORMATION

ITEMS	DATA	UNIT	RATIO	NOTES
				ratio :compared with the data of 1994
Total numbers of hotel	37	nos	127%	na : not available
government facilities	2	nos	100%	
private sector	35	nos	129%	
Total numbers of room	778	nos	121%	
government facilities	31	nos	91%	
private sector	747	nos	123%	
Numbers of visitor				
delegations	12,494	p/year	na	official visiting : national & international
national	26,636	p/year	305%	
international	5,487	p/year	125%	
				source :1995 statistics of Sihanoukville

TABLE 5.4-1 POWER SUPPLY SYSTEM OF SIHANOUKVILLE

SURVEY ITEMS	DESCRIPTION
Name of authority	Sihanoukville power station
Capacity	Total : 3700 KVA, (total of equipment capacity)
	1000 KVA x 3 sets
	350 KVA x 2 sets
Voltage	6000 KVA
Start of construction	1983 (constructed by grant aid by USSR)
Start of operation	1985
Unit rate of electricity	grade 1 government facilities : 16 cent
	grade 2 family houses : 20 cent
	grade 3 private company (including hotels) : 25 cent
New project	
	1 Construction of new power plant
	PHASE 1 (completed engineering work by Ariston Eng. Co.)
	Financial source : ADB (35,000,000 $)
	Capacity : 5000 KVA (2500 KVA x 2 sets)
	Start of construction : 1997
	Start of operation : 1998
	PHASE 2 (not yet approved)
	Capacity : 5000 KVA (2500 KVA x 2 sets)
	2 Construction of new power supply cables to oil port area
	Starting date is not fixed by the authority
Other information	
	1 Existing power plant does have not sufficient capacity against the demand of electricity in the town,
	Covered only 30% of its demand.
	2 The biggest beer factory (Angkor beer) in the Sihanoukville is using own generator units for the operation.
	3 There are no power supply cable lines in the existing fishing village around project site.

SYRVEY DATA

TABLE 5.4-2 ENERGY CONSUMPTION OF SIHANOUKVILLE PORT

MONTH	ELECTRICITY CONSUMPTION (KWH/MONTH)	ELECTRICITY COST ($/MONTH)	WATER CONSUMPTION (M3/MONTH)	WATER COST ($/MONTH)	NOTES
JAN,1995	37092	5192	409	90	data : 1995 and 1996
FEB	28050	3927	502	111	
MAR	32845	4598	487	108	
APR	34054	4767	512	113	
MAY	23436	3281	448	99	
JUN	24806	3472	542	120	
JUL	27212	3809	498	110	
AUG	29744	5945	485	108	
SEP	17831	3562	578	128	
OCT	17730	3546	541	119	
NOV	16124	3224	492	110	
DEC	21378	4275	476	105	
JAN,1996	40700	7932	510	151	
FEB	38568	7563	496	147	
MAR	37769	7406	502	175	

source : Sihanoukville Port Authority

TABLE 5.4-3 FRESH WATER SUPPLY SYSTEM IN SIHANOUKVILLE

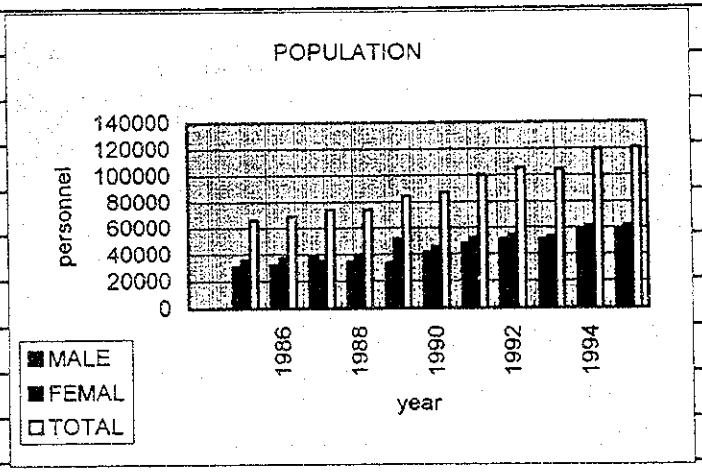
SURVEY ITEMS	DESCRIPTION
Name of authority	Sianoukville Water Supply Authority
Capacity of water supply	Max. 2000 M3/day
Production record	700450 M3/year :1995
Water sources	Natural water and 4 nos. of deep well water,(depth of well : 100 M)
Start of operation	1958-1960
Number of families and companies	Approx. 7000
Biggest consumer of water	Angkor beer factory, consumption : 1000 M3/month
Unit cost of water	grade 1 0 to 30 M3/month : 500 Riel/M3
	grade 2 31 to 500 M3/month : 700 Riel/M3
	grade 3 over 501 M3/month : 900 Riel/M3
Number of branches from main pipes	Approx. 700 nos
Extended pipeline in 1995	2050 M
Record of repaired pipeline in 1995	650 M
Specification of pump	From pond to treatment facilities : 100 M3/h, 135 m, 3 sets
New project	To resolve shortage of water, water authority planned construction of new water supply facilities
	and construction will be started 1997 financed by WDB.
	Proposed capacities of water supply : 4000 M3/day
Other information	
	1 Due to shortage of water, water authority supplied fresh water only for port office,
	not including water to be used for ship in the port.
	2 Under the operation of UNTAC,bore holes (approx. 10 to 20 m) are used for resource of water.
	3 Shallow bore holes (5 to 7 m) are used for resource of water in the fisherman's area at project site.
	4 In general, one shallow bore hole is able to cover water consumptions for two families.

TABLE 5.4-4 TELEPHONE DISTRIBUTION SYSTEM IN SIHANOUKVILLE

SURVEY ITEMS	DESCRIPTION
Name of authority	Sihanoukville Telecommunication Office, SAMART communication, etc.
Capacity	Total : 250 lines, (total of exchanger capacity)
	Existing subscribers : 200 sets
Employee	28 personnel
Start of construction	1993 (extended in 1993 by UNTAC)
Unit rate	SHV telecommunication office : admission fee : 250 $,
	Inside of Shinoukville : 20$/month
	Other area : 50 cent/minutes
New project	
	1 Installation of new telephone exchanger,
	Capacity : 1000 lines
	Start of construction : 1997
	System : TDMA system
Other information	
	1 There are no extension plan of telephone distribution cables for fishing village
	2 Government had made 10 years jointventure agreement with Indonesian company in 1995
	Cambodia government : 51%, Indonesia company : 49%
	3 Overseas telephone utilizing satellites belong to Australia
	4 Information of SAMART(private TEL company)
	Subscriber of SAMART in Cambodia : 9000 (65% of market share)
	Subscriber of SAMART in Shihanoukville : 300
	5 Other private telephone company :
	1) Motorola, 2) Camtel, 3) Shinovatra, 4) Traisailcom

TABLE 5.5-1 POPULATION IN SIHANOUKVILLE (THREE DISTRICTS)

YEAR	MALE	FEMAL	TOTAL	NOTES
1985	30,527	35,836	66,363	
1986	31,917	36,987	68,904	
1987	38,715	35,264	73,979	
1988	34,673	39,429	74,102	
1989	33,195	51,483	84,678	
1990	41,640	45,643	87,283	
1991	48,137	52,229	100,366	
1992	51,107	54,441	105,548	
1993	51,091	53,104	104,195	
1994	58,215	61,352	119,567	
1995	58,896	61,886	120,782	



source : Sihanoukville municipallity

TABLE 5.5-2 OCCUPATIONAL RATIOS IN SIHANOUKVILLE

CATEGORY	RATIO(%)	NOTES
FARMER	45	total of population in 1995 : 120782
FISHERY	15	data source : municipality
COMMERCE	25	
GOV'T STAFF	15	
		source : 1995 statistics of Sihanoukville

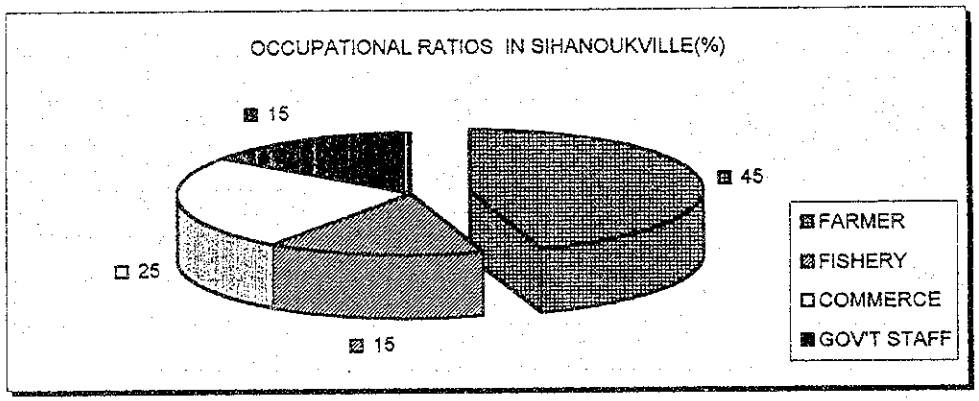


TABLE 5.5-3 MAJOR AGRICULTURAL PRODUCTS IN SIHANOUKVILLE

ITEMS	DATA	UNIT	RATIO	NOTES
Rice field area	8,807	Ha	95%	ratio :compared with the data of 1994
productivity	1.8	ton/Ha	150%	Ha : hectare
Production	16,000	ton/year	307%	
Potato (1)	155	ton/year	182%	high height
Potato (2)	36	ton/year	360%	low height
Other vegetable	150	ton/year	49%	

data source :1995 statistics of Sihanoukville

TABLE 5.5-4 STATISTICS OF FISH CAUGHT IN SIHANOUKVILLE (1)

ITEMS	DATA	UNIT	RATIO	NOTES
All kind of fresh fish	9,100	ton/year	105%	ratio : compared with the data of 1994
fresh shrimp	814	ton/year	119%	na : not available
fresh fish	7,231	ton/year	101%	
other fishery	873	ton/year	129%	
Dry fish				
pony fish	790	ton/year	200%	
other dry fish	52	ton/year	144%	
dry shrimp	13	ton/year	59%	
dry fish for animal's foods	130	ton/year	152%	
Fish oil	196,000	liter/year	100%	
Nursery of fish	67	place	na	206480 M2
private pond	31	place	na	203600 M2
government organization	36	place	na	2880 M2
				source :1995 statistics of Sihanoukville

TABLE 5.5-5 STATISTICS OF FISH CAUGHT IN SIHANOUKVILLE (2)

	CAUGHT	UNIT	NOTES
1980	500	ton	
1981	247	ton	
1982	1,002	ton	
1983	2,068	ton	
1984	1,363	ton	
1985	2,248	ton	
1986	1,202	ton	
1987	5,150	ton	
1988	7,890	ton	
1989	9,120	ton	
1990	9,300	ton	
1991	8,300	ton	
1992	8,600	ton	
1993	8,560	ton	source : Ministry of Agriculture, Forestry, and Fisheries
1994	8,700	ton	Fishery data collection . 1980 - 1994 ,Dep't of Fisheries

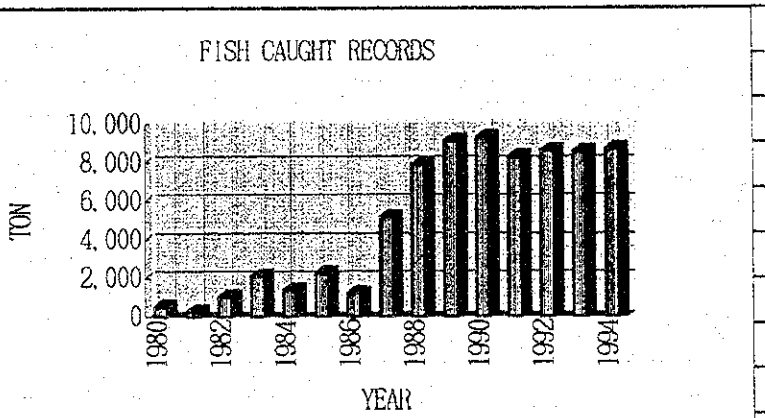


TABLE 6-1 RESULT OF IEE FOR THE PORT PROJECT

LONG TERM PLAN

NO.	ITEMS	PLAN 1 CASE H1,M1 CON. ST	PLAN 1 CASE H1,M1 OPE. ST	PLAN 1 CASE H2,M2 CON. ST	PLAN 1 CASE H2,M2 OPE. ST	PLAN 2 CASE L1 CON. ST	PLAN 2 CASE L1 OPE. ST	PLAN 2 CASE L2 CON. ST	PLAN 2 CASE L2 OPE. ST
	SOCIAL ENVIRONMENT								
1	Resettlement of inhabitants	C	C	C	C	C	C	C	C
2	Economic activities	X	X	X	X	X	X	X	X
3	Traffics and life facilities	C	C	C	C	C	C	C	C
4	Division of regional area	C	C	X	X	C	C	X	X
5	Historical and cultural heritage	X	X	X	X	X	X	X	X
6	Water right and common right	X	X	X	X	X	X	X	X
7	Hygiene and health	X	X	X	X	X	X	X	X
8	Waste and garbage	X	X	X	X	X	X	X	X
9	Risks and hazards	X	X	X	X	X	X	X	X
	NATURAL ENVIRONMENT								
10	Topography and geology	X	X	X	X	X	X	X	X
11	Soil erosion	X	X	X	X	X	X	X	X
12	Underground water	X	X	X	X	X	X	X	X
13	Hydrological regime for river and lake	C	C	C	C	X	X	X	X
14	Coastal zone	C	X	C	X	C	X	C	X
15	Ecology, fauna, flora	B	X	B	X	B	X	B	X
16	Meteorology	X	X	X	X	X	X	X	X
17	Landscape	X	X	X	X	X	X	X	X
	POLLUTANT								
18	Air pollution	X	X	X	X	X	X	X	X
19	Water pollution	B	X	B	X	B	X	B	X
20	Soil contamination	X	X	X	X	X	X	X	X
21	Noise and vibration	X	X	X	X	X	X	X	X
22	Land subsidence	X	X	X	X	X	X	X	X
23	Offensive odor	X	X	X	X	X	X	X	X

NOTES:
A : Relatively high magnitude of impact is expected
B : Relatively medium magnitude of impact is expected
C : Relatively low magnitude of impact is expected
X : No effect is expected
CON.ST. : Construction Stage
OPE. ST. : Operation Stage

Explanation of each plan shall be referred to Section -5 of Interim Report
"Matrix of Element for Environmental Impact" shall be referred to Fig.13

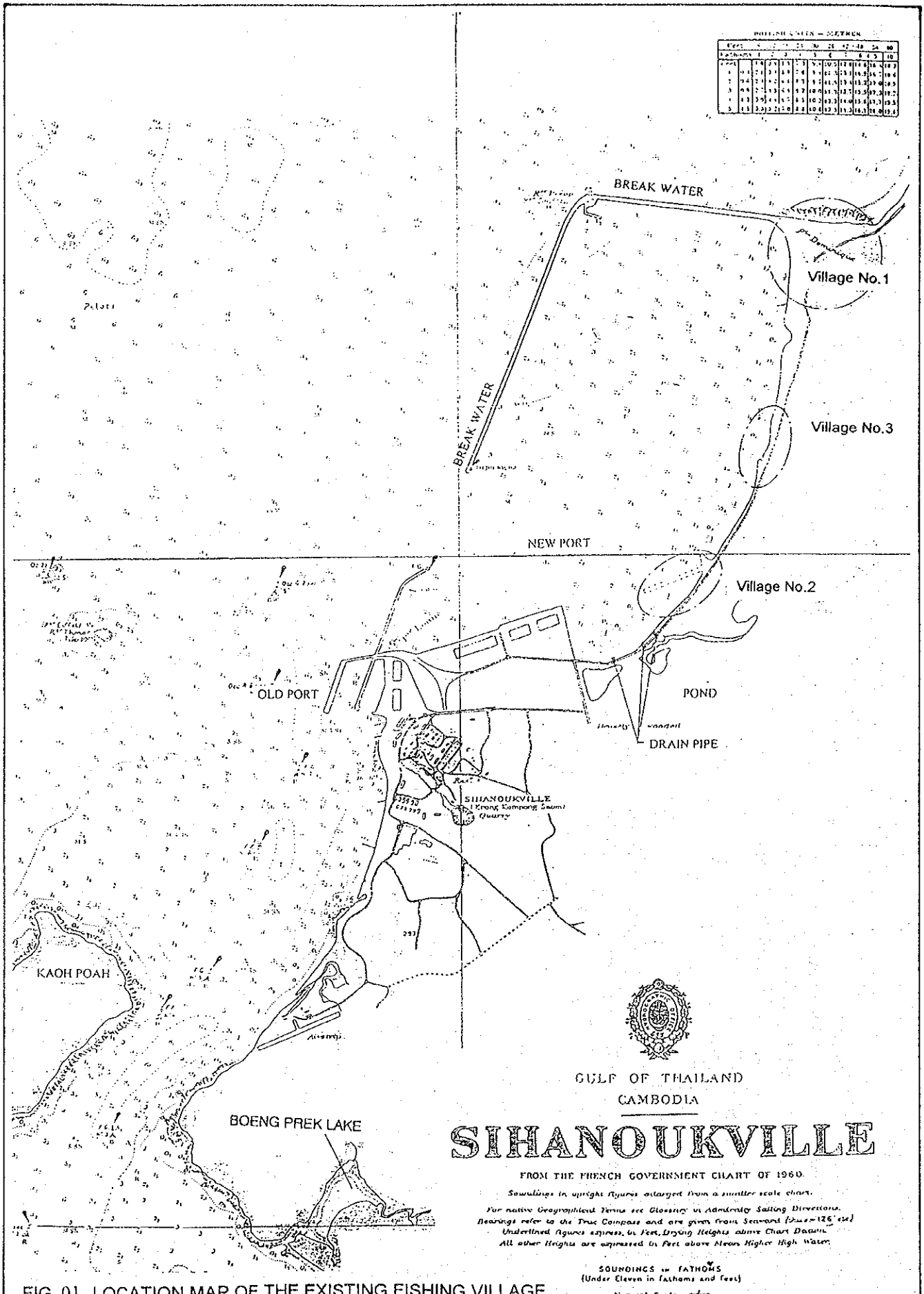


FIG. 01 LOCATION MAP OF THE EXISTING FISHING VILLAGE

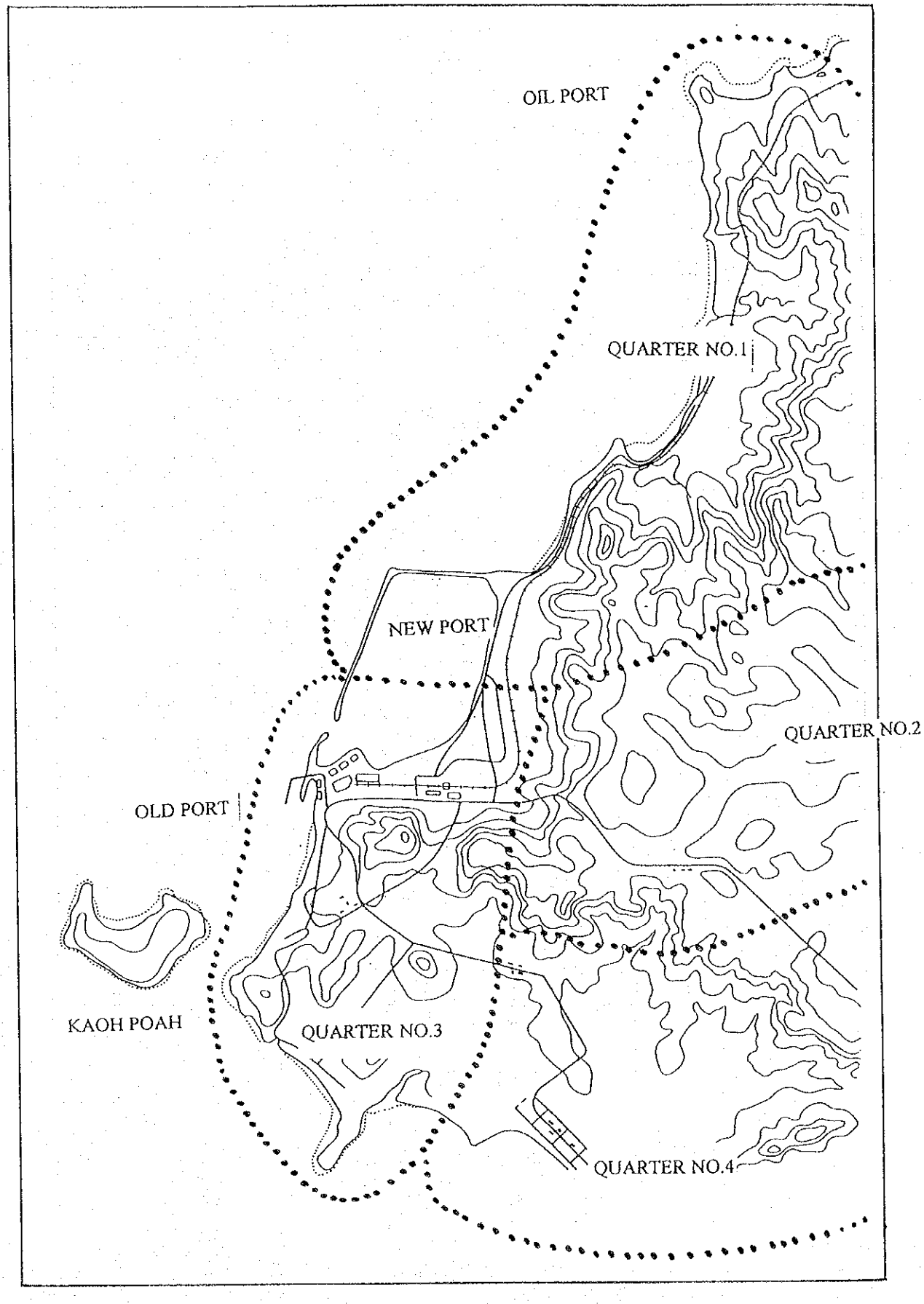


FIG. 02 BORDERLINE OF QUARTER IN SIHANOUKVILLE

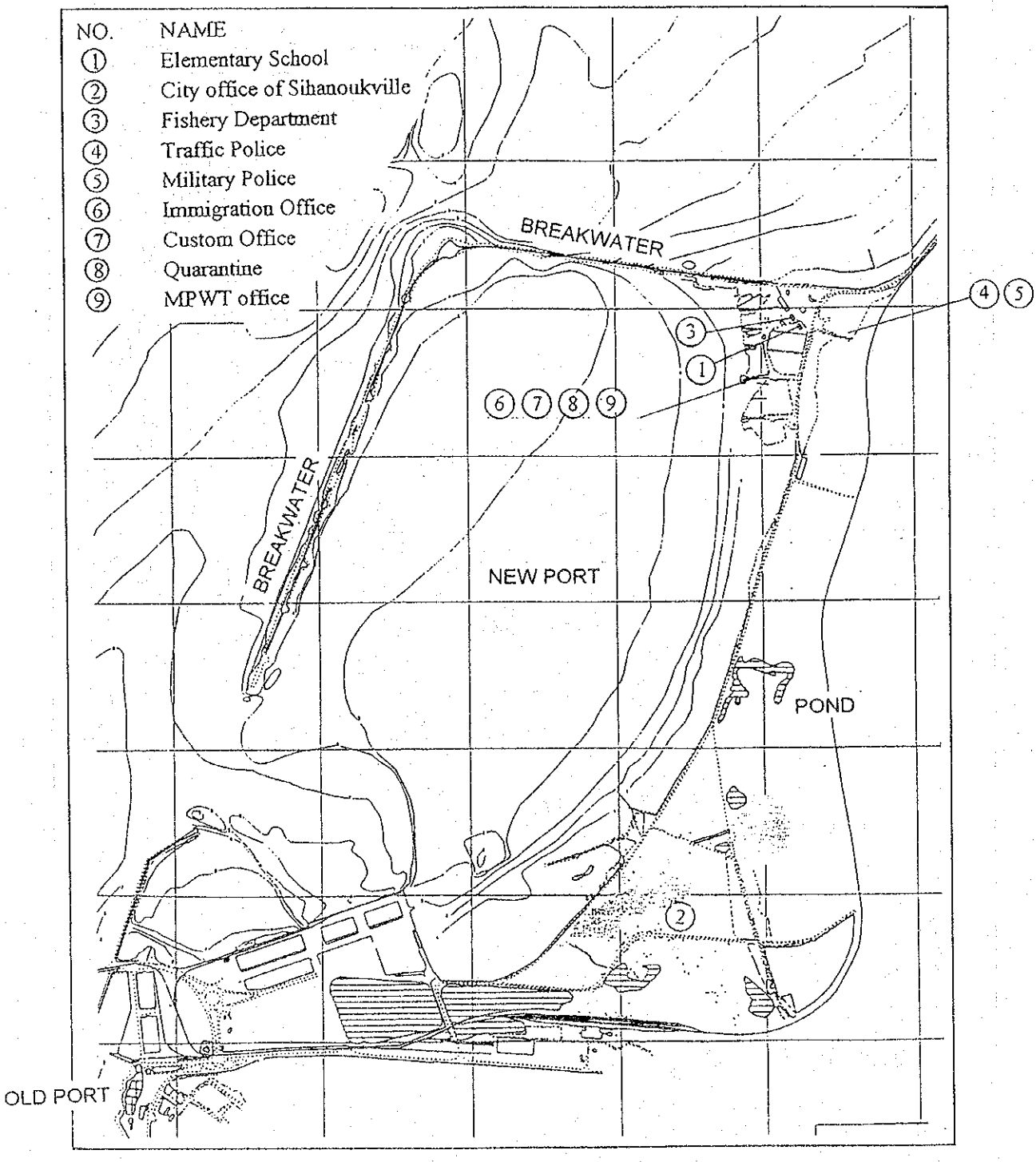


FIG. 03 LOCATION OF GOVERNMENT OFFICES

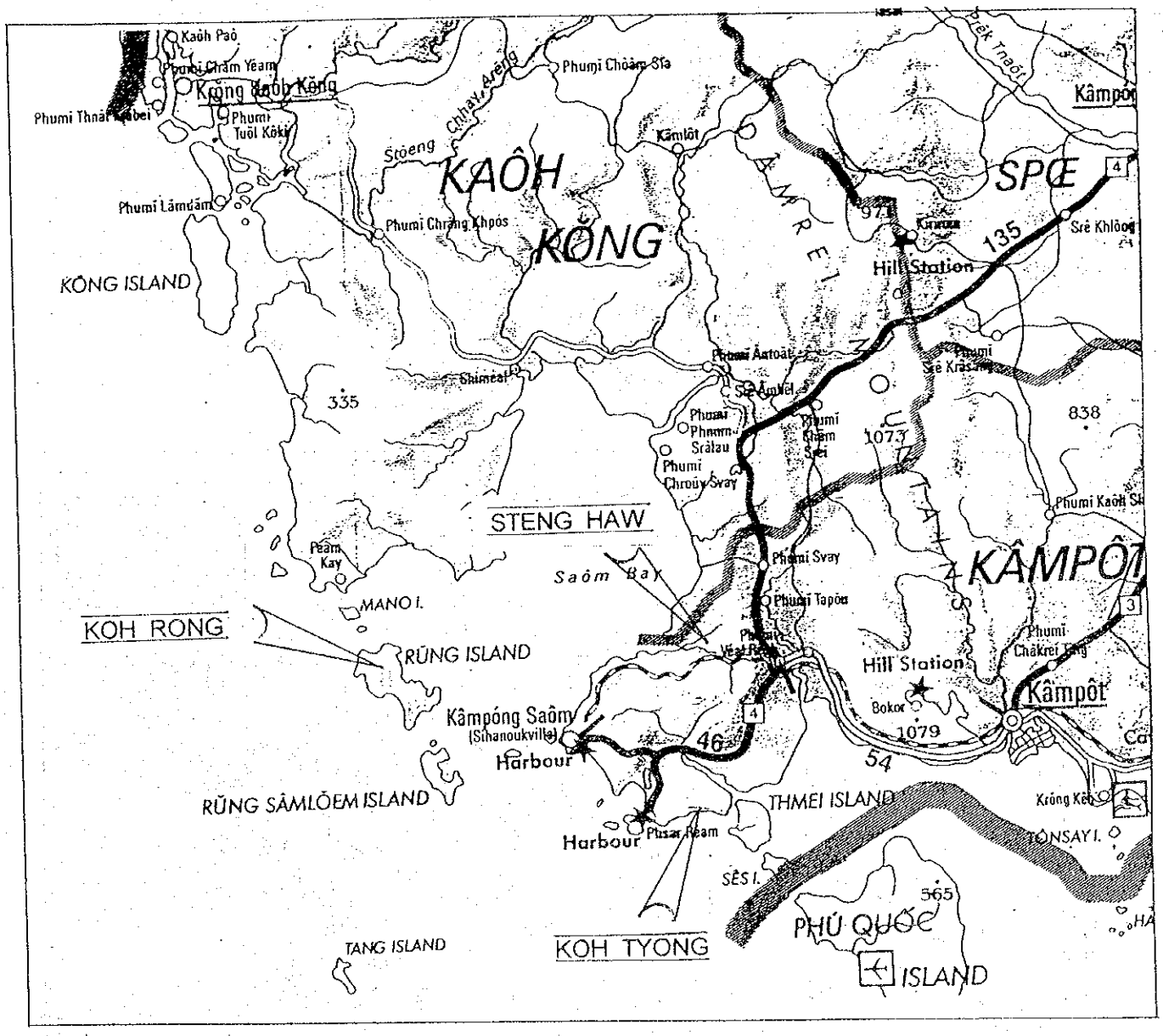


FIG. 04 PROPOSED LOCATION FOR RESETTLEMENT

LEGEND

FISHING PORT AREA : approx. 100 ships

FAMILY HOUSE : approx. 70 houses

SHIP BUILD FACTORY

SMALL SHOP (including food shop)

IMMIGRATION POLICE

NURSERY BUILDING OF FISH

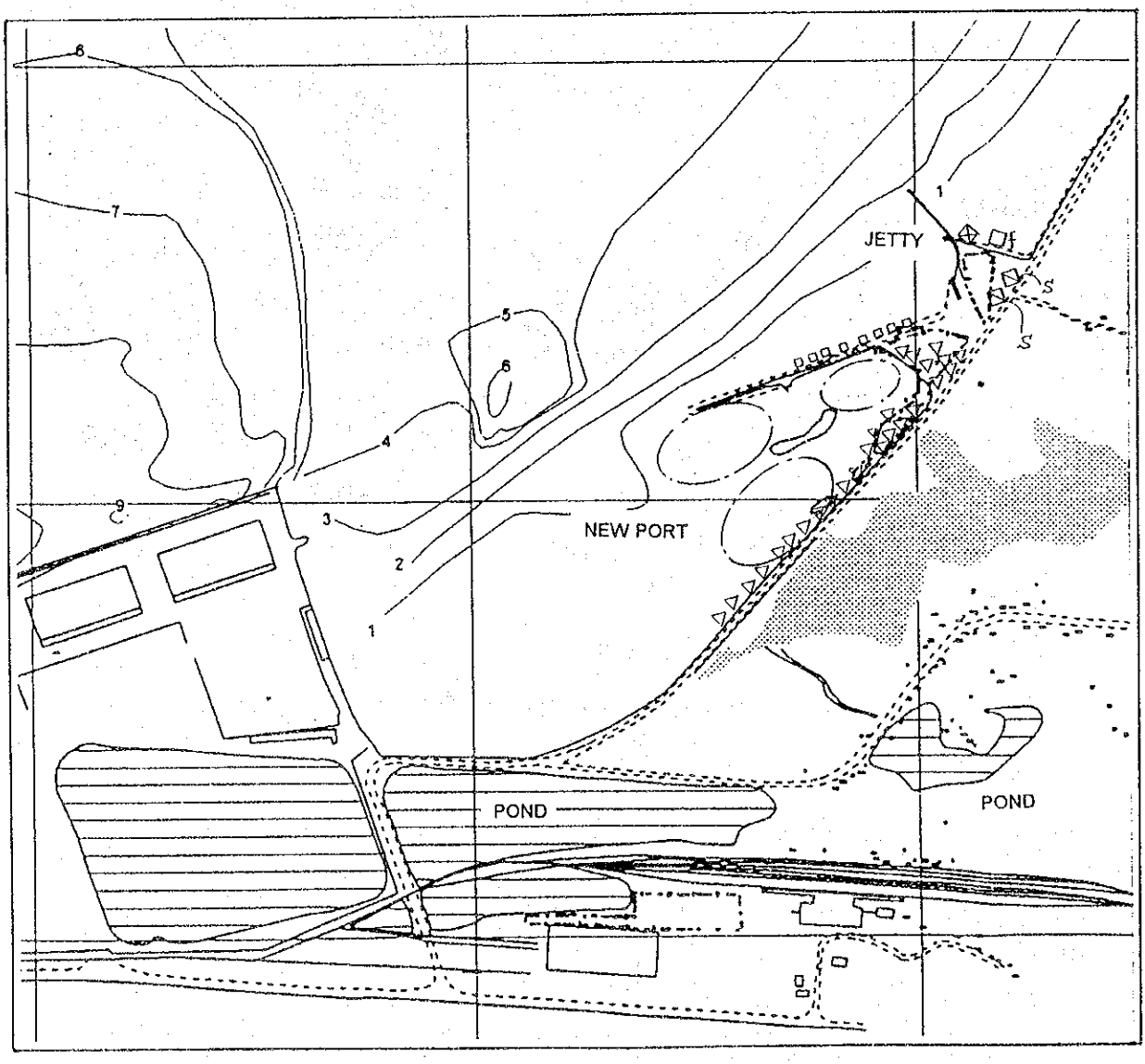


FIG. 05 SITE PLAN OF FISHING PORT (QUARTER NO.3)

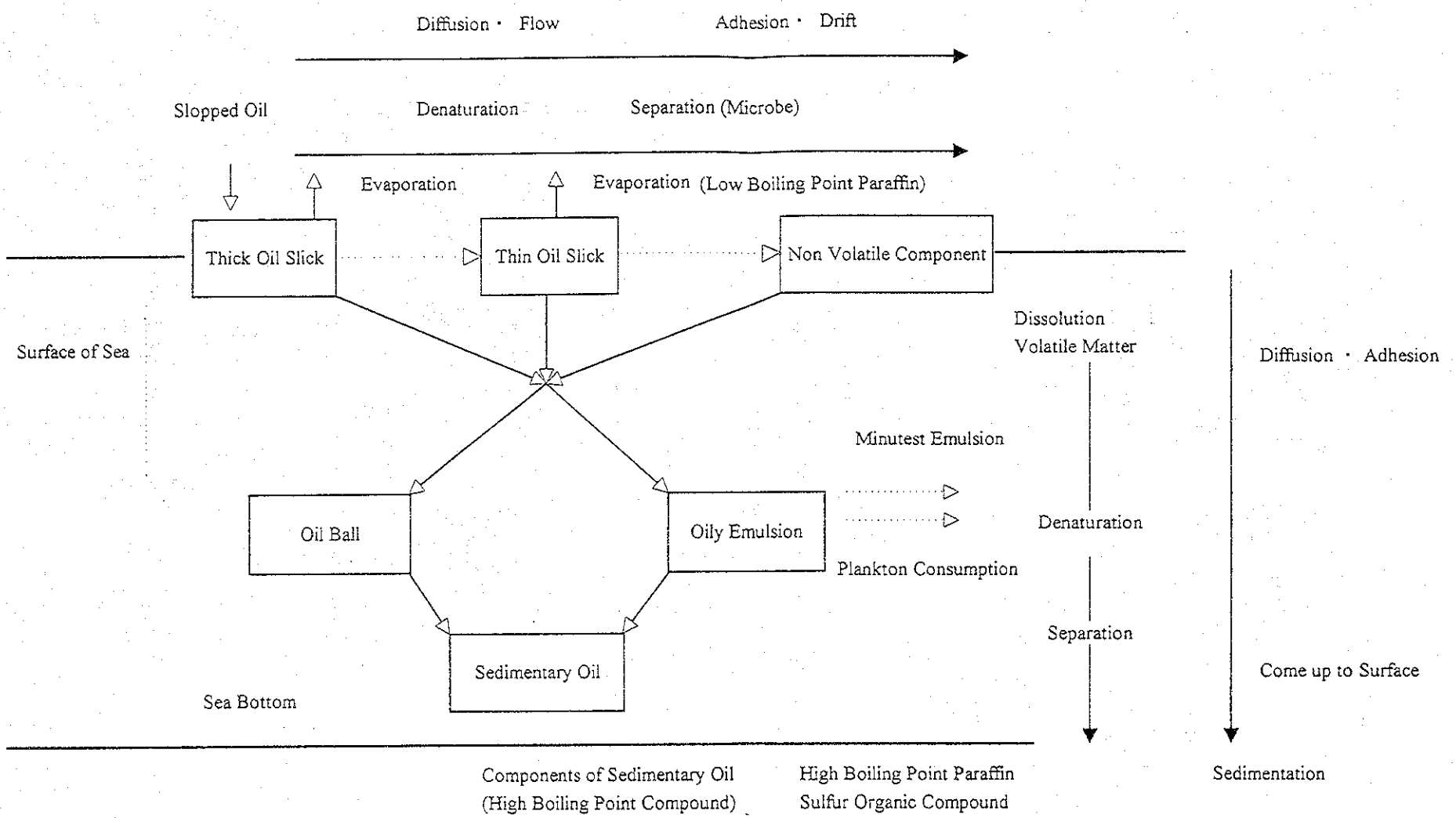
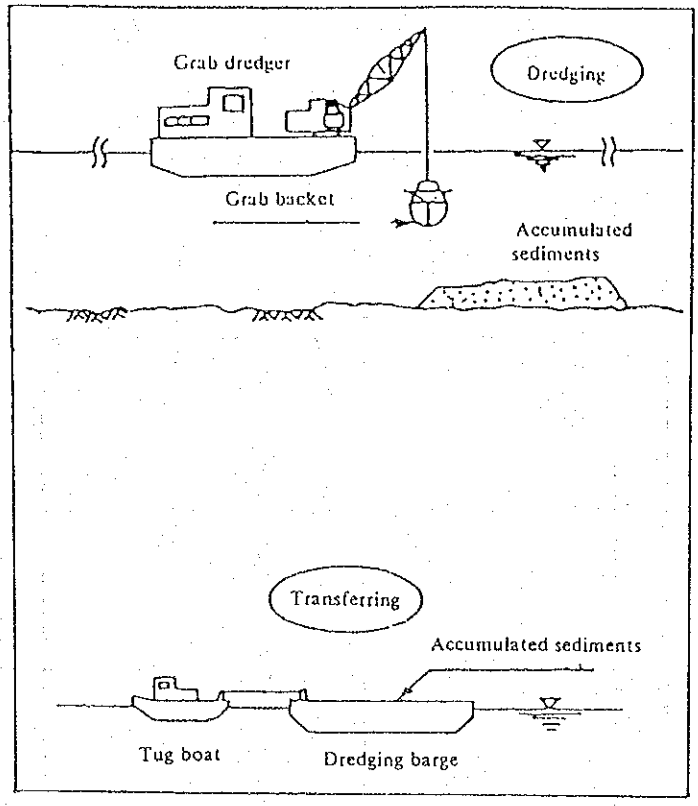


FIG. 06 CONDITIONS OF SLOPPED OIL IN THE OCEAN

By grab dredger



By drag suction dredger

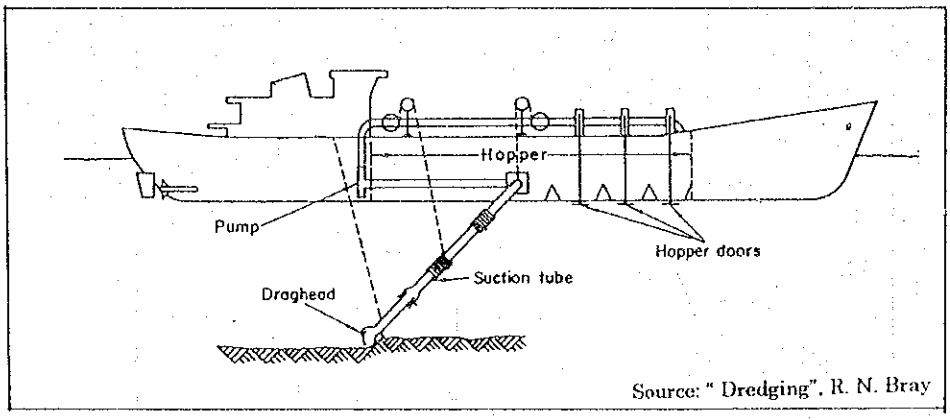


FIG. 07 DREDGING AND DISPOSING OF ACCUMULATED SEDIMENT

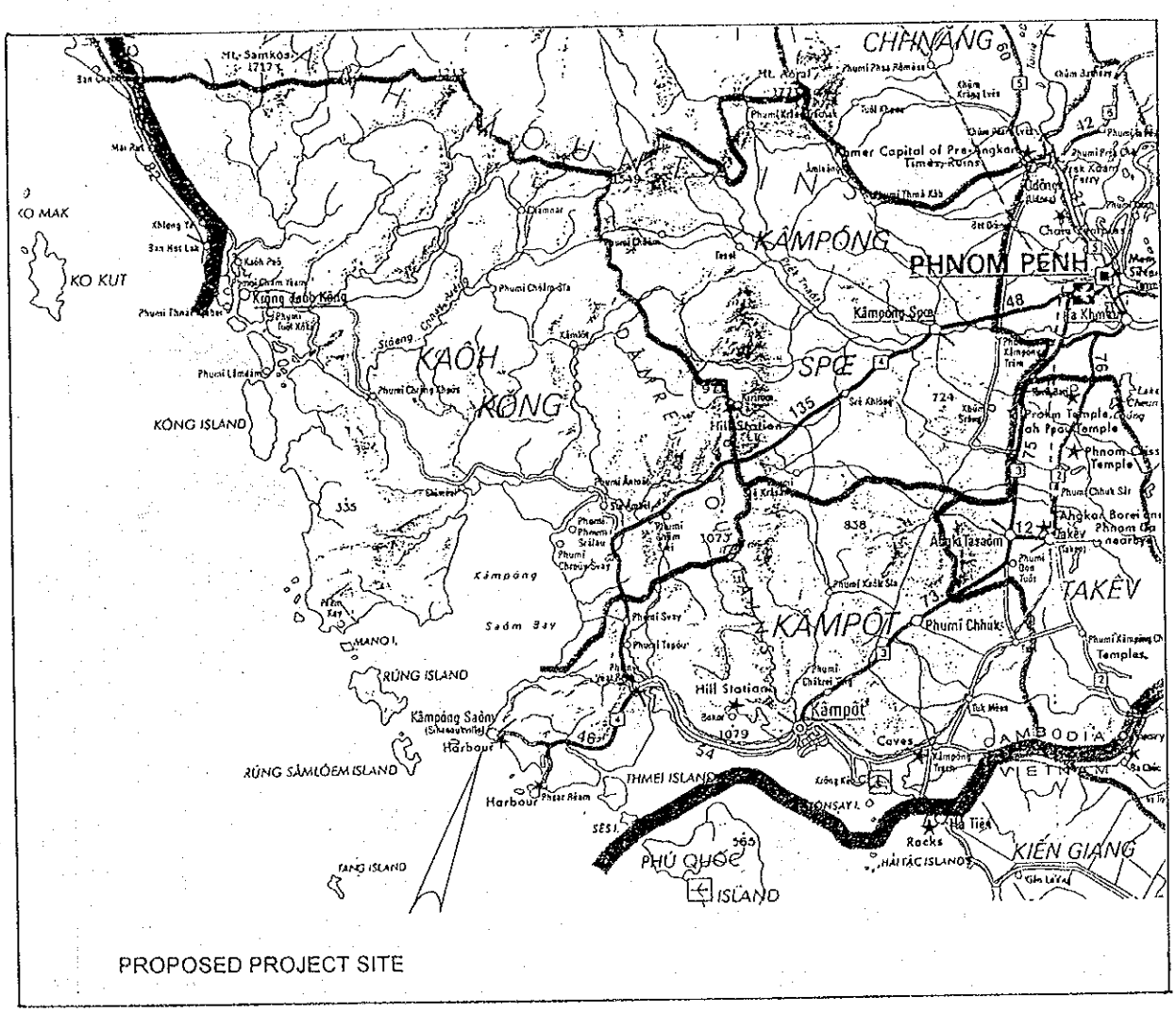


FIG. 08 ROUTE FOR RAILROAD AND NATIONAL ROUTE NO.4

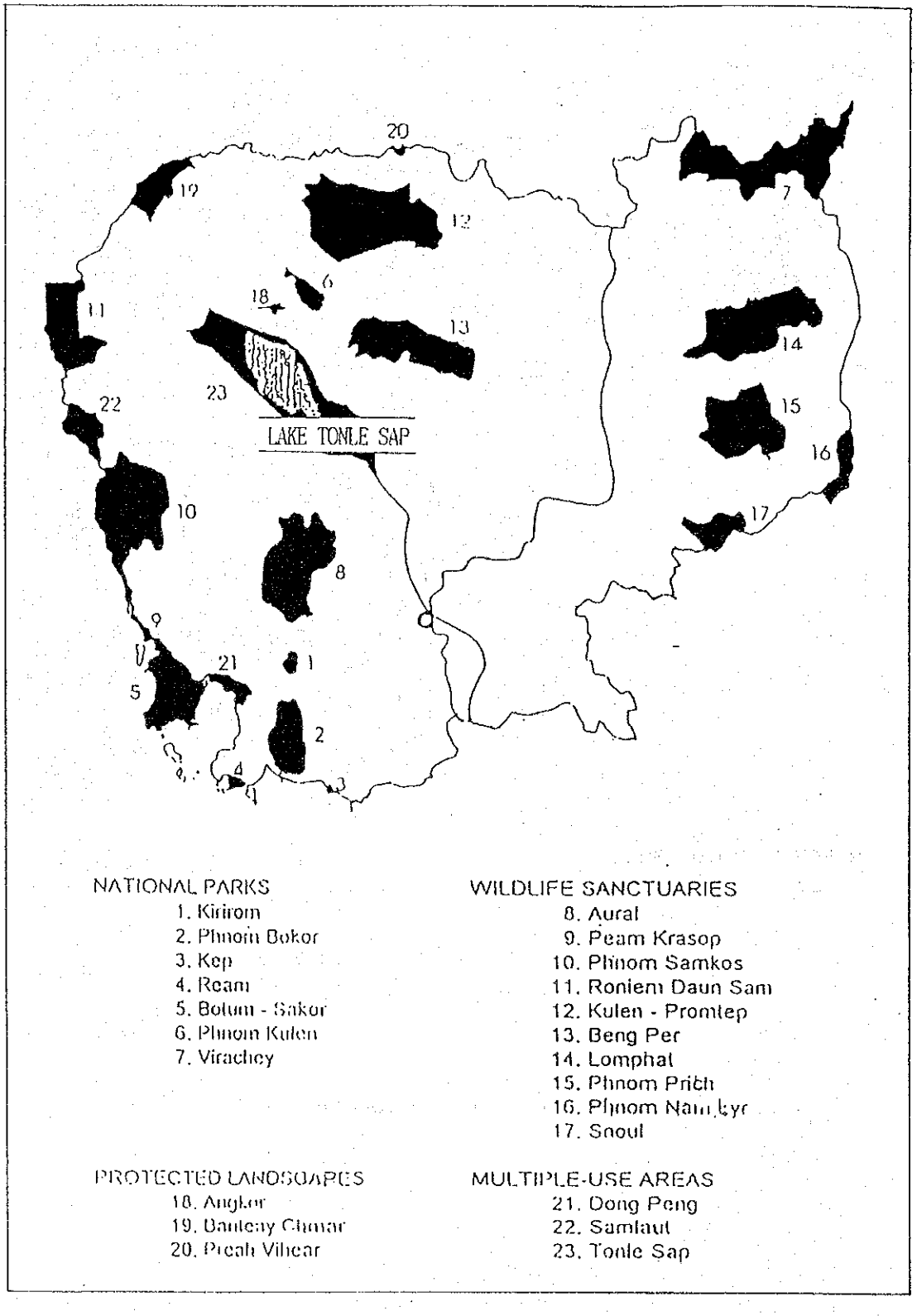


FIG. 09 AREAS DESIGNATED AS PROTECTED AREAS

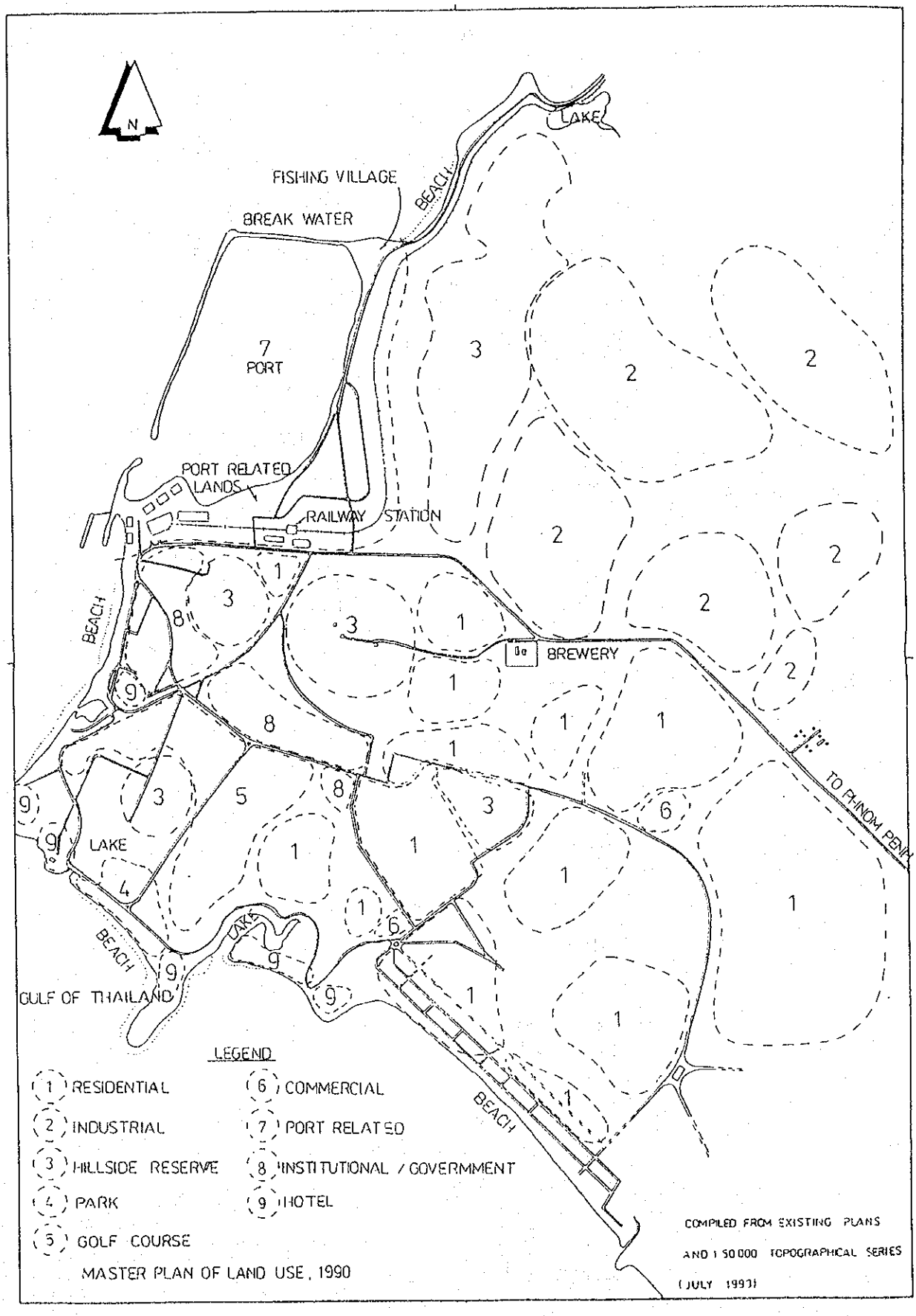


FIG. 10 MASTER PLAN OF LAND USE, 1990

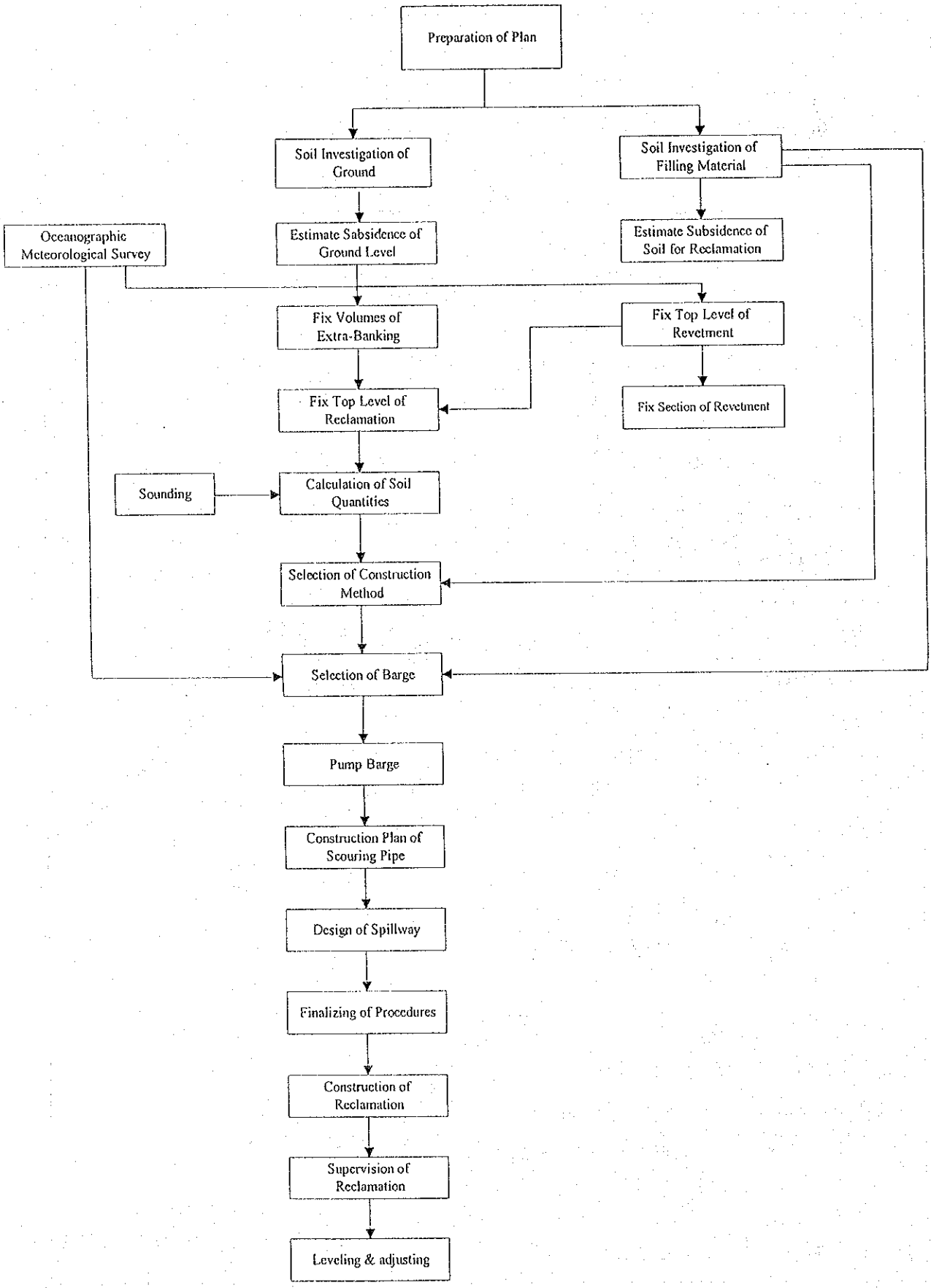


FIG. 11 WORK PROCEDURES OF RECLAMATION

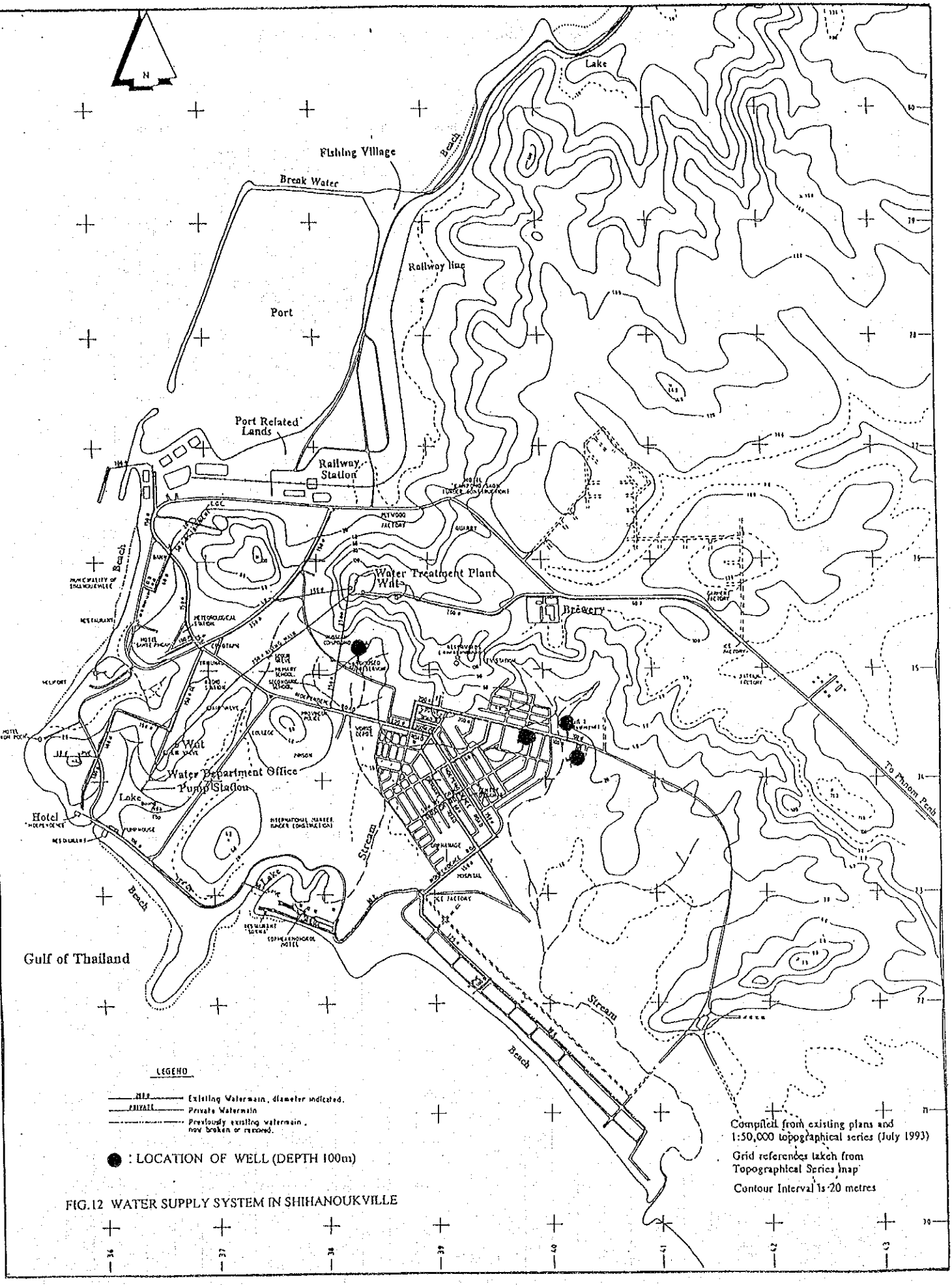


FIG.12 WATER SUPPLY SYSTEM IN SHIHANOUKVILLE

FIG 13-1 Matrix of Element for Environmental Impact

Element of Environmental Impact / Type of Environmental Event		1.Change of Nature								2.Construction				3.Structure						4.Trans-portation		5.Operation				
		1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	5.1	5.2	5.3	5.4	5.5
		Drainage outlets	River Improvement	Reclamation	Dredging : Channel	Dredging : Port	Cutting & Excavation	Banking	Quarry	Excavation	Piling	Concrete Work	Paving	Landscaping	Building	Road	Port Facilities	Revetment	BreakWater	Inland	Marine	Exhaust Gas	Waste Water	Waste & Garbage	Noise & Vibration	Pumping of Ground water
1.Topography	1.1 Topography	X	X	X			X	X	X	X					X	X	X									X
	1.2 Soil Condition						X	X	X					X			X									
2.Climate	2.1 Temperature																									
	2.2 Sunshin																									
	2.3 Wind Direction and Velocity				X	X																				
3.Water	3.1 Surface Water	X	X	X	X	X	X	X	X				X	X	X	X	X	X					X			
	3.2 Ground Water	X	X										X	X												X
	3.3 Sea Water	X	X	X	X	X											X		X				X			
	3.4 Water Quality	X	X	X	X	X			X										X				X	X		
	3.5 Water Temperature				X	X																	X			
4.Atomosphere	4.1 Quality																					X				
	4.2 Noise & Vibration					X	X	X			X									X					X	
5.Biology	5.1 Natural Flora	X			X	X													X			X				X
	5.2 Artificial Forest																									
	5.3 Terrestrial Biology		X	X																		X				X
	5.4 Hydrobios	X	X	X	X	X																				
	5.5 Natural Monument																									
	5.6 Ecosystem	X	X	X	X	X	X	X	X					X				X	X		X	X	X	X	X	X
6.Landscope	6.1 Mountains						X		X				X											X		
	6.2 Hills						X		X				X											X		
	6.3 Rural																							X		
	6.4 Urban												X											X		
	6.5 River , Lake and Pond		X	X																			X			
	6.6 Coast	X	X	X	X	X	X	X		X				X		X		X					X	X		
7.Natural Phenomena	7.1 Local Weather																									
	7.2 Rainfall /Deluge		X	X		X	X		X			X	X	X	X	X		X					X			
	7.3 Stream/Outflow of soil		X	X	X	X							X					X					X			
	7.4 Ground Water/ground																									X
	7.5 Ground/ vibration										X									X					X	
8.Cultural Assets	8.1 Ruins and Relics																									
	8.2 Buried cultural Assets																									

FIG 13-2 Matrix of Element for Environmental Impact

Element of Environmental Impact / Type of Environmental Event		1.Change of Nature								2.Construction				3.Structure						4.Trans-portation		5.Operation				
		1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	5.1	5.2	5.3	5.4	5.5
		Change of Channels	River Improvement	Reclamation	Dredging : Channel	Dredging : Port	Cutting & Excavation	Banking	Quarry	Excavation	Piling	Concrete Work	Paving	Landscaping	Building	Road	Port Facilities	Revetment	Break Water	Inland	Marine	Exhaust Gas	Waste Water	Waste & Garbage	Noise & Vibration	Pumping of Ground water
9.Inhabitants	9.1 Living Condition										X					X		X		X	X		X	X		
	9.2 Economic Activity				X	X														X	X					
10.Industry	10.1 Condition of Employment									X	X	X	X							X	X					
	10.2 Local Industry, etc.									X	X	X	X							X	X					
11.Utilization of Sea Area	11.1 Port	X		X	X	X																				
	11.2 Fishing Area																				X					
	11.3 Tourism																			X	X					
12.Utilization of Water	12.1 Agricultural Water																									
	12.2 Waterworks														X		X						X			X
	12.3 Industrial Water																									
	12.4 Others																									
13.Infrastructure, etc.	13.1 Electricity														X		X									
	13.2 Road & Traffics																			X						
	13.3 Other Transportation																				X					
	13.4 Waterworks														X		X									
	13.5 Sewageworks														X								X			X
	13.6 Park & Green													X												
	13.7 Disposal Facility of Solid Waste																							X		

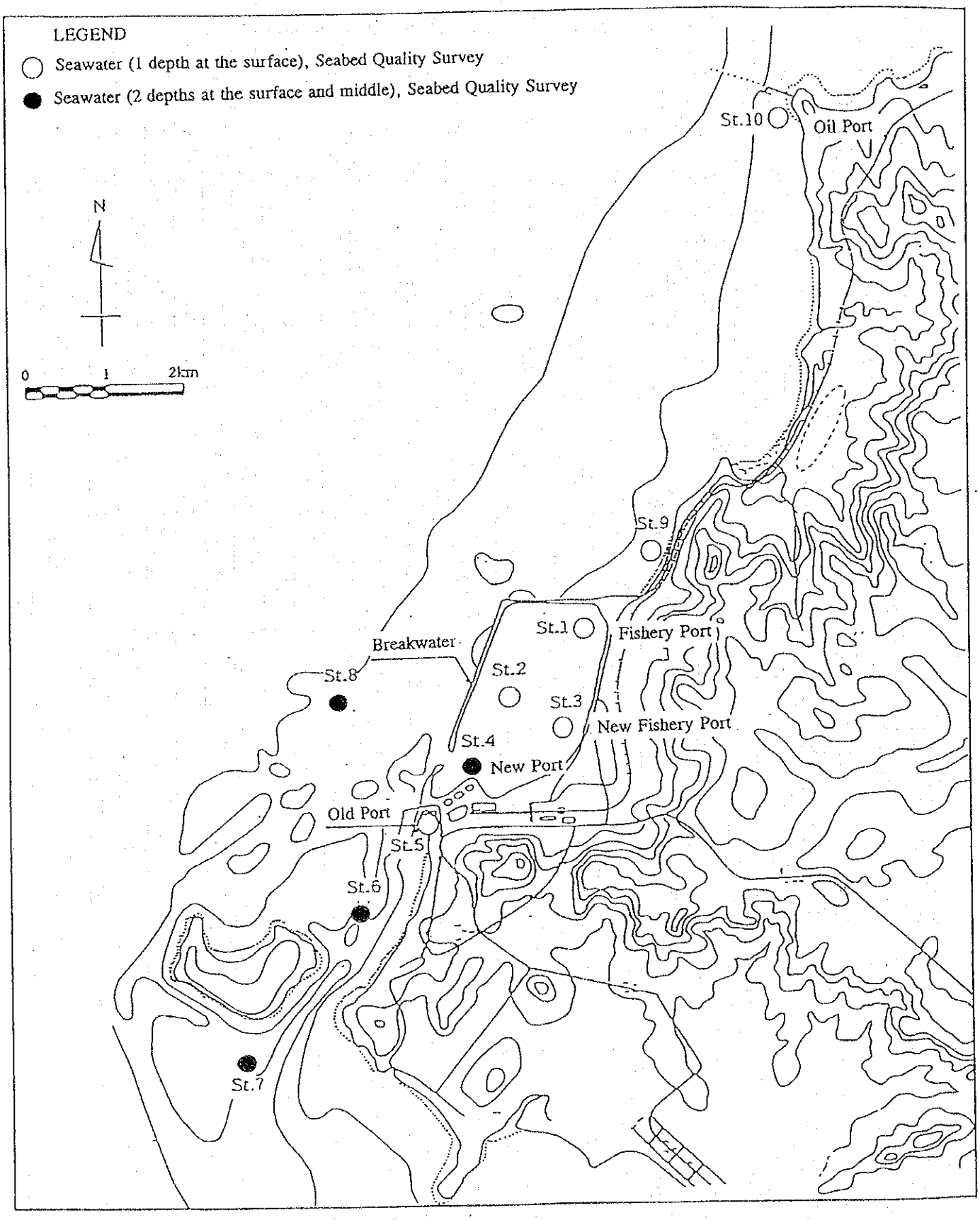


FIG. 14 LOCATION MAP OF SEAWATER AND SEABED QUALITY SURVEY