付　表

表

表－1	タイの主要経済指標
－2	タイの国際収支
－3	第6次経済社会開発計画のマクロ経済指標
－4	タイ経済に占める農林水産業の位置
－5	タイ輸出に占める農林水産品の位置
－6	気象観測資料
－7	タイの農業
－8	タイの農家戸数、農業人口
－9	タイの農地面積規模
－10	タイの農業人口1人当たり所得
－11	タイの農業人口1人当たり地域別所得
－12	南北ランシット地区耕地面積及び作物生産額
－13	ランシット水路チュラロンコン水位記録
－14	ランシット水路水質測定記録
－15	ランシット水路横断橋梁諸元
－16	ＲＩＤ保有浚渫機械リスト
－17	ランシット水路浚渫記録

表－1　　タイの主要経済指標

	1982年	1983年	1984年	1985年	1986年	1987年
実質GDP成長率(%)	4.1	7.3	7.1	3.5	4.7	7.1
消費者物価上昇率(%)	5.2	3.8	0.9	2.4	1.9	2.5
卸売物価上昇率(%)	0.9	2.0	△3.1	△0.1	△0.9	11.3
外貨準備高(100万$)	2,652	2,555	2,689	3,004	3,776	5,212
デッドサービスレシオ	16.6	19.5	19.9	21.9	20.1	17.0
うち民間(%)	7.7	9.2	9.8	10.9	9.3	7.5
公的(%)	8.9	10.3	10.1	11.0	10.8	9.5
対外債務残高(10億$)	8.3	9.5	10.79	12.8	14.1	15.1
うち民間(%)	2.3	2.7	3.4	3.4	3.1	2.9
公的(%)	6.0	6.9	7.4	9.4	11.0	12.9
財政　歳入	116.1	143.6	148.1	160.6	169.9	202.0
歳出	157.2	166.5	181.3	200.0	204.3	212.0
財政収支	△41.0	△23.7	△34.0	△39.4	△34.4	△10.0
(10億バーツ)						

(資料)　タイ中央銀行及びNESDB

表－2　　タイの国際収支

(10億バーツ)

	1982年	1983年	1984年	1985年	1986年	1987年
輸　出	157.2	145.1	173.6	191.7	231.5	298.2
(前年比 %)	(4.6)	(△7.7)	(19.9)	(10.7)	(20.7)	(28.8)
輸　入	193.3	234.3	243.2	253.4	245.9	343.9
(前年比 %)	(△10.5)	(21.2)	(4.1)	(4.6)	(△3.0)	(39.9)
貿易収支	△36.1	△89.2	△69.6	△61.7	△14.4	△44.8
経常収支	△23.1	△66.1	△49.2	△41.9	6.5	△15
総合収支	3.3	△18.1	10.6	12.5	33.6	18.2
バーツ価	22.98	22.98	23.61	27.13	26.35	25.71
(年平均 B/$)						

(資料)　タイ中央銀行及びNESDB

(注)　輸出入は再輸出等を含まない。

表－３　　第６次経済社会開発計画のマクロ経済指標

Category	Fifth Plan Targets (1982-1986)	Sixth Plan Targets (1987-1991)
1. Trade Deficit (current prices)		
1.1. Average value per year (million baht)	55,600	35,900
1.2. Trade deficit/GDP (%)	5.8	2.7
2. Current Account Deficit (current prices)		
2.1. Average value per year (million baht)	36,000	11,800
2.2. Current account deficit/GDP (%)	3.8	0.9
3. Export of Goods and Services		
3.1. Value growth rate (%)	9.8	9.9
3.2. Volume growth rate (%)	8.4	7.4
4. Export of Goods		
4.1. Value growth rate (%)	8.4	10.7
4.2. Volume growth rate (%)	8.3	8.1
4.3. Average value per year (million baht)	177,500	290,700
5. Income from Tourism (current prices)		
5.1. Value growth rate (%)	12.2	7.4
6. Import of Goods and Services		
6.1. Value growth rate (%)	3.7	9.3
6.2. Volume growth rate (%)	2.0	4.5
7. Import of Goods		
7.1. Value growth rate (%)	2.9	9.5
7.2. Volume growth rate (%)	2.9	4.6
7.3. Average value per year (million baht)	233,100	326,700
8. Economic Growth (%/yr at constant prices)		
8.1. Agriculture	2.1	2.9
8.2. Manufacturing	5.1	6.6
8.3. Mining	6.1	6.4
8.4. GDP	4.4	5.0
9. Government Revenue/GDP (%)	14.8	15.8
10. Population Growth Rate (%)	1.7*1	1.3*2
10.1. Municipal districts	(2.7)	(2.5)
10.2. Sanitary districts	(2.1)	(2.4)
10.3. Villages	(1.4)	(0.8)
11. Inflation Rate (%)	2.9	2.3
12. Per Capita Income (baht)	21,395*1	27,783*2

Note: *1 ... In 1986, *2 ... In 1991

Source: National Economic and Social Development Board

表－４　　タイ経済に占める農林水産業の位置

（単位：百万バーツ）

	1981	1982	1983	1984	1985	1986	1987
総生産額（GDP）(A)	760,195	820,002	910,054	973,412	1,014,399	1,099,541	1,223,218
農林水産業(B)	162,987	156,839	185,628	175,190	169,895	184,770	195,059
ウエイト（B/A）	21.44%	19.13%	20.40%	18.00%	16.75%	16.80%	15.95%
農業	105,828	100,065	121,030	113,069	105,221	108,585	113,610
畜産業	15,828	13,999	18,985	16,883	14,995	19,911	23,396
水産業	10,617	10,984	12,365	11,339	12,763	15,823	14,538
林業	9,560	8,654	9,046	9,212	8,962	9,067	9,361
農業サービス	6,681	7,006	6,175	6,791	7,438	7,125	7,207
一次加工品	14,556	16,131	18,027	17,896	20,516	24,259	26,947

（出所）ＮＥＳＤＢ．社会経済開発庁

表－５　　タイ輸出に占める農林水産品の位置

（単位：百万バーツ）

	1982	1983	1984	1985	1986	1987
総輸出 (A)	159,728	146,472	175,237	193,366	233,383	299,853
農林水産品(B)	80,888	74,818	87,080	84,353	94,870	102,241
ウエイト（B/A）	50.64%	51.08%	49.69%	43.62%	40.65%	34.10%
農産品	73,150	66,484	78,292	73,398	79,397	83,259
水産品	7,636	8,225	8,684	10,590	14,853	18,163
林産品	102	109	104	365	620	819

（出所）Bank of Thailand（タイ中央銀行）

表－6　　気象観測資料

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Pressure (+1000 or 900 mbs.)													
Mean	12.47	10.99	09.96	08.40	06.85	06.34	06.46	06.51	07.56	09.75	11.60	12.63	09.13
Ext. Max.	26.50	20.96	20.97	17.74	14.06	13.00	13.34	13.50	14.38	18.02	20.38	21.32	26.50
Ext. Min.	04.42	02.27	02.08	99.66	99.40	97.76	98.78	99.36	98.20	01.22	04.60	03.87	97.76
Mean daily range	4.81	4.80	4.85	4.83	4.46	3.80	3.75	3.93	4.39	4.43	4.28	4.51	4.40
Temperature (℃)													
Mean	25.6	27.2	28.6	29.6	29.3	28.7	28.1	27.9	27.6	27.5	26.7	25.5	27.7
Mean Max.	31.9	32.8	33.9	34.9	34.2	33.1	32.6	32.4	32.0	31.8	31.5	31.4	32.7
Mean Min.	20.6	23.1	24.8	25.9	25.6	25.3	24.9	24.8	24.5	24.3	23.0	20.9	24.0
Ext. Max.	35.7	36.6	39.8	40.0	39.5	37.7	37.8	36.3	36.0	35.3	35.1	35.2	40.0
Ext. Min.	11.5	14.9	16.5	19.9	21.1	21.7	22.2	21.2	21.6	18.3	14.2	10.5	10.5
Relative Humidity (%)													
Mean	72.1	75.7	76.0	76.0	78.4	78.5	79.3	80.2	82.8	82.2	77.5	72.5	77.6
Mean Max.	90.6	92.2	91.6	90.7	92.2	91.5	91.8	93.2	94.8	94.3	92.5	90.0	92.1
Mean Min.	48.6	53.4	55.2	55.8	60.1	62.3	63.5	63.9	66.0	65.6	59.4	52.1	58.8
Ext. Min.	27.0	17.0	23.0	28.0	30.0	38.0	43.0	47.0	49.0	36.0	36.0	31.0	17.0
Dew Point (℃)													
Mean	19.6	22.1	23.6	24.5	24.8	24.2	23.9	23.9	24.2	23.9	22.1	19.7	23.0
Evaporation (mm)													
Mean - Pan	135.9	141.1	182.1	187.5	171.4	150.1	147.9	147.1	130.4	127.9	125.8	133.3	1780.5
Cloudiness (0 - 10)													
Mean	5.9	6.5	6.8	7.0	8.2	8.5	8.6	8.9	9.0	8.2	6.8	5.9	7.5
Sunshine Duration (hr.)													
Mean	216.6	252.5	270.0	256.0	222.4	178.5	169.1	159.4	152.6	202.0	242.6	266.1	2647.8
Visibility (km)													
0700 L.T.S.	5.2	4.9	5.9	7.5	8.6	8.7	8.4	8.1	8.0	8.0	8.1	7.5	7.4
Mean	9.6	9.2	9.4	10.7	11.9	12.1	11.9	11.6	8.6	11.4	11.7	11.2	10.8
Wind (knots)													
Prevailing wind	NE	S	S	S	S	S	SW	SW	SW	SW	NE	NE	-
Mean wind speed	2.6	4.1	5.0	4.6	3.8	3.8	3.5	3.6	2.7	2.3	2.3	2.4	-
Max. wind speed	31 NNW	37 N	48 ENE	52 E, ESE	41 SSW	41 W	41 W,S NW,WNW	43 E	44 SSW	40 NE	37 SE ESE	31 SE NNE	52 E, ESE
Rainfall (mm)													
Mean	9.3	29.1	26.2	66.4	189.9	156.1	158.7	204.6	339.4	239.3	48.3	9.7	1477.0
Mean rainy days	1.3	2.9	3.0	6.4	15.7	16.7	18.1	20.6	21.5	17.0	5.9	1.3	130.4
Greatest in 24 hr.	39.3	73.0	88.4	89.7	124.2	167.3	108.6	97.8	153.7	123.2	81.2	32.0	167.3
Day/Year	31/61	11/64	30/82	29/57	15/66	13/79	28/76	26/71	23/68	5/60	2/69	8/72	13/79
Number of days with													
Haze	19.1	15.9	16.3	9.3	2.9	1.3	0.8	0.8	1.0	2.2	6.3	11.8	87.7
Fog	3.5	1.2	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.3	0.7	6.4
Hail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thunderstorm	0.5	0.8	2.4	8.1	15.8	9.7	10.3	11.0	16.3	14.7	3.7	0.7	94.0
Squall	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2

Remarks :　Evaporation 1965 - 1985

表－7　　タイの農業

（単位：千ライ）

	1975年	1980	1982	1983	1984	1985
A 国土面積	((100.0%)1 320,697	(100.0) 320,697	(100.0) 320,697	(100.0) 320,697	(100.0) 320,697	(100.0) 320,697
B 森林面積	(40.8) 130,762	(32.2) 103,419	(30.5) 97,875	(30.0) 96,267	(29.5) 94,695	(29.0) 93,158
C 農地面積	(35.0) 112,211	(37.1) 118,999	(38.5) 123,587	(38.7) 124,230	(39.1) 125,314	(40.1) 128,603
(1)稲作地	(22.2) 71,239	(22.9) 73,563	(22.8) 73,222	(23.0) 73,635	(23.0) 73,909	(23.0) 73,902
(2)畑作地	(6.2) 19,953	(8.0) 25,758	(9.1) 29,285	(9.2) 29,428	(9.4) 30,033	(9.9) 31,605
(3)樹園地	(3.2) 10,413	(3.4) 11,142	(3.7) 11,873	(3.7) 11,906	(3.8) 12,059	(4.2) 13,464
(4)野菜・花き地	(0.1) 358	(0.1) 314	(0.1) 342	(0.1) 343	(0.1) 410	(0.1) 474
(5)草地	(0.2) 487	(0.2) 523	(0.2) 766	(0.2) 766	(0.2) 753	(0.3) 848
(6)遊休地	(1.4) 4,552	(1.0) 3,064	(1.2) 3,881	(1.2) 3,911	(1.1) 3,653	(1.2) 3,750
(7)その他	(0.7) 2,372	(0.7) 2,113	(0.5) 1,638	(0.5) 1,652	(0.5) 1,725	(0.5) 1,531
(8)農家宅地	(0.9) 2,837	(0.8) 2,521	(0.8) 2,579	(0.8) 2,590	(0.9) 2,772	(0.9) 3,031
D 分類不能地	(24.2) 77,723	(30.6) 98,279	(30.9) 99,235	(31.2) 100,199	(31.4) 100,688	(30.8) 98,935

（注）1.資料：農業協同組合省
2.1ライ＝0.16 *ha*
3.タイ国の国土面積は日本の1.4倍

表－8　　タイの農家戸数、農業人口

	1975	1980	1984	1985	1986
・総　戸　数　（千戸）		7,743	8,918	9,601	9,424
農　家　数　（千戸）	4,120	4,468	4,740	4,878	NA
ウエイト　（％）		57.70	53.15	50.81	-
・総　人　口　（千人）		47,723	51,871	52,829	53,638
農業人口　（千人）		31,922	33,539	33,896	34,261
ウエイト　（％）		66.89	64.66	64.16	63.87
・総労働人口　（千人）		26,958	29,523	30,085	30,552
農業労働人口（千人）		17,233	18,253	18,454	18,658
ウエイト　（％）		63.92	61.83	61.34	61.07

（出所）1.所帯数は内務省地方行政局
2.人口及び労働人口は農業農協省農業経済局

表－9　　タイの農地面積規模

（１９７８年農業センサス）

規　　模	*ha*　換　算	経営者件数	比　　率
１０ライ未満	1.6 *ha* 未満	1,122,901	27.8
10～19.9	1.6～3.2	1,065,069	26.4
20～29.9	3.2～4.8	718,176	17.8
30～39.9	4.8～6.4	461,705	11.5
40～49.9	6.4～8.0	233,166	5.8
50～59.9	8.0～9.6	165,367	4.1
60～79.9	9.6～12.8	85,531	2.1
80～99.9	12.8～16.0	109,304	2.7
100～139.9	16.0～22.4	40,157	1.0
140～179.9	22.4～28.8	9,570	0.2
180～249.9	28.8～40.0	5,065	0.1
250以上	40 *ha* 以上	3,416	0.1
合　　計		4,018,427	100.0

出所：1978 Agricultural Census Report, Thailand
office of prime minister

表－10　　タイの農業人口１人当たり所得

（単位：バーツ）

Year	農業人口 一人当たり所得	非農業人口 一人当たり所得	比率
1982	5,743	38,357	1：6.68
1983	6,159	40,628	1：6.60
1984	5,703	43,508	1：7.63
1985	5,267	45,572	1：8.65
1986	5,343	47,237	1：8.84

（出所）：Office of Agricultural Economics,Office of the National Economic and Social Development Board

表－11　　タイの農業人口１人当たり地域別所得

年	Northeast	North	Central	South	全国平均
1982	3,143	5,750	9,574	7,312	5,743
1983	3,829	6,064	8,907	8,825	6,159
1984	3,184	5,702	8,956	8,360	5,703
1985	3,023	5,423	7,922	8,112	5,267
1986	3,122	5,243	7,214	8,977	5,343

（出所）：Office of Agricultural Economics,Office of the National Economic and Social Development Board

表-12　南、北ランシット地区耕地面積及び作物生産量

地区名	1981			1986		
	Planted Area (ha)	Production (ton)	Yield (kg/ha)	Planted Area (ha)	Production (ton)	Yield (kg/ha)
(雨期水稲)						
北ランシット	54,575	120,394	2,206	40,981	125,947	3,073
南ランシット	71,372	151,224	2,119	63,342	157,884	2,493
(乾期水稲)						
北ランシット	32,205	148,543	4,612	26,595	107,127	4,028
南ランシット	'28,211	107,621	3,815	23,103	81,998	3,549

畑作物(1981)

	Maize	Cassava	Sugar-cane	Mungbean	Sorghum	Soybeans	Ground-nuts	Total
北ランシット	-	-	-	107	-	-	-	107
南ランシット	142	9,697	1,131	37	-	62	68	11,137

畑作物(1986)

	Maize	Cassava	Sugar-cane	Mungbean	Sorghum	Soybeans	Ground-nuts	Total
北ランシット	-	-	-	96	-	-	-	96
南ランシット	526	7,430	835	9	25	155	37	9,017

表-13 ランシット水路チュラロンコン水位記録

(unit:M,S,L)

	(1987)					(1988)			
	Maximum		Minimum			Maximum		Minimum	
Mon	In	Out	In	Out	Mon	In	Out	In	Out
1	1.25	1.40	0.69	−0.10	1	1.21	1.30	0.52	0.01
2	1.04	1.25	0.22	0.20	2	1.02	1.18	0.47	−0.16
3	0.96	1.05	0.47	−0.23	3	1.07	1.18	0.45	−0.17
4	0.87	0.94	0.39	−0.15	4	1.14	1.27	0.48	−0.17
5	1.04	1.03	0.54	−0.35	5	1.39	1.25	0.75	−0.15
6	1.15	1.13	0.62	−0.62	6	1.50	1.30	0.62	−0.40
7	0.89	0.84	0.21	−0.59	7	1.38	1.07	0.53	−0.60
8	0.86	1.06	0.31	−0.37	8	1.28	1.21	0.75	0.06
9	1.81	1.79	0.31	−0.50	9	1.68	1.66	0.90	0.07
10	1.86	1.85	1.70	0.49	10	2.02	2.06	1.29	0.62
11	2.00	1.43	1.80	0.43	11	2.03	2.07	1.32	0.42
12	1.84	1.68	1.19	0.32	12	1.93	1.68	1.05	0.38

Note: In: Water Level at Inside of Chulalongkorn Locks
Out: Water Level at Outside of Chulalongkorn Locks

表-14　ランシット水路水質測定記録

No.	Location of Sampling	L (km)	PH	DO (mg/l)	BOD (mg/l)	COD (mg/l)	TKN (mg/l)	TP (mg/l)
1.	Chao Phra ya		6.3	3.0	1.0	13.8	0.56	ND
2.	Klong 1~2	7	6.4	0.6	1.9	16.2	1.37	0.04
3.	K.3~K.4	15	6.4	0.3	1.8	15.2	0.98	0.02
4.	K.7~K.8	25	6.4	2.3	1.4	18.9	0.66	ND
5.	K.10~K.11	34	6.5	2.4	1.6	16.9	0.59	ND
6.	K.12~K.13	41	6.5	2.4	1.0	5.7	0.48	0.04
7.	K.9		6.6	0.8	1.6	15.2	0.59	0.02
8.	K.13		6.8	6.2	2.0	12.5	0.68	0.02
	基準値(日本)		6~8	2.0<	10>	10>	-	0.02

Note: Location of Sampling　Location of Sampling on the Rangsit Canal
DO:　溶存酸素
BOD:　生物化学的酸素消費量(Biochemical Oxygen Demand)
COD:　化学的酸素消費量(Chemical Oxygen Demand)

表-15 ランシット水路横断橋梁諸元

No.	Crossing Structure	Distance l. km	Distance L. km	Bridge M.	Bridge H. m	Bridge B. m	Reference Chao Phraya Riv.
1		3.5	3.5	C	6.5	8.0	
2		2.5	6.0	C	6.5	8.0	
3	Railway	1.0	7.0	S	5.5	7.2	
	Navigation Locks	0.5	7.5				
4		0.2	7.7	W	6.5		
5	Highway	0.8	8.5	C	7.0	13.0	
6	Highway	0.0	8.5	S	4.8	13.0	
	Klong 1	0.7	9.2				
7		0.2	9.4	C	5.8	8.0	
8		0.3	9.7	C	6.1	8.0	
9		1.0	10.7	C	6.6	8.0	
10		0.5	11.2	C	6.3	8.0	
	Klong 2	0.3	11.5				
11		0.2	11.7	C	6.8	8.0	
12		0.3	12.0	C	6.3	8.0	
13		0.2	12.2	C	6.4	8.0	
14		0.3	12.5	C	5.4	8.0	
15		0.3	12.8	C	7.0	8.0	
16		0.2	13.0	C	6.4	8.0	
	Klong 3	0.9	13.9				
17		0.2	14.1	W	5.7	8.0	
18		0.2	14.3	C	5.8	8.0	
19		0.4	14.7	C	5.9	8.0	
20		0.6	15.3	W	2.9	8.0	To be destroyed
	Klong 4	1.3	16.6			7.0	
21		0.1	16.7	C	6.2	8.0	
22		0.1	16.7	W	5.5	8.0	
23		2.2	18.9	W	5.6	8.0	Φ100 pipe for temple
	Klong 5	0.2	19.1				

(Continued)

No.	Crossing Structure	Distance l. km	Distance L. km	Bridge M.	Bridge H. m	Bridge B. m	Reference Chao phraya Riv.
24		0.9	20.0	C	5.7	8.0	
25		0.4	20.4	C	6.2	8.0	
26		1.0	21.4	W	5.4	7.0	under repair work
27		0.3	21.7	C	5.4	10.0	
	Klong 6	0.1	21.8				
28		0.3	22.1	W	5.3	7.5	
29		1.3	23.4	W	5.4	8.0	to temple, many weeds
30		0.6	24.0	C	5.8	8.0	
	Klong 7	0.6	24.6				
31		0.2	24.8	W	5.6	8.5	
	Klong 8	2.4	27.2				
32		0.1	27.3	W	5.9	8.0	
	Regulator	0.7	28.0			7.0	removable gate
	Klong 9	1.8	29.8				
33		0.3	30.1	W		7.5	many weeds
34		1.4	31.5	C		-	under construction,weeds
	Klong 10	0.9	32.4				
35		0.2	32.6	W	6.5	8.0	
36		2.3	34.9	C	6.3	10.0	
37		0.0	34.9	W	6.2	8.0	
	Klong 11	0.1	35.0				
38		0.5	35.5	C	5.8	8.0	to temple
39		1.7	37.2	C	5.8	8.0	
	Klong 12	0.4	37.6				
40		0.1	37.7	W	5.5	7.5	
41		1.2	38.9	C	6.0	10.0	
42		0.7	39.6	W	6.2	7.5	
	Klong 13	0.5	40.1				

(Continued)

No.	Crossing Structure	Distance ℓ km	Distance L km	Bridge M.	Bridge H. m	Bridge B. m	Reference
							Chao Phraya Riv.
43		0.0	40.1	C	7.5	10.0	Automatic Gage (JICA)
44		0.9	41.0	C	6.8	8.0	many weeds
	Klong 14	1.6	42.7				
45		1.3	44.0	W	6.0	7.0	
	Klong 15	2.1	46.1				Dredgers base
46		1.4	47.5	C	6.9	8.0	
	Klong 16	0.5	48.0				
47		0.5	48.5	C	5.5	10.0	
48		4.4	52.9	C	6.0	8.0	many weeds
	Navigation Locks	0.1	53.0				
49		0.3	53.8	W	5.0	7.0	to temple
			54.0				Nakon Nayok Riv.

Note:
- No. .... No. of bridge on the Rangsit Canal
- ℓ. .... Distance Between Structures
- L. .... Accumulated Distance
- M. .... Material of bridge (C=Concrete, W=Wood, S=Steel)
- H. .... Height of bridge above Mean Sea Level
- B. .... span of pier

表－16　　ＲＩＤ保有浚渫機械リスト

Thai Calender 2532 = A.D. 1989

DREDGER No.	TYPE of DREDGER	MANUFACTURER	B.E.of PURCHASE	CAPACITY M^3/MONTH	DIMENSIONS WIDTHxLENGTHxHEIGHT m x m x m	TOTAL ENGINE CAP. (Hp)
1	MULTI-BUCKET DREDGER	WARF GOSTO, HOLLAND.	2448	17,000	5.21x28.35x4.71	170
2	SUCTION PIPE DREDGER ⌀ 14"	RID.	2529	38,000		480
3	MULTI-BUCKET DREDGER	WARF GOSTO, HOLLAND.	2449	17,000	5.21x28.35x4.71	170
5	SUCTION PIPE DREDGER ⌀ 12"	RID.	-	-		300
6	SUCTION PIPE DREDGER ⌀ 12"	RID.	2506	28,000	5.65x15.50x14.00	340
7	MULTI-BUCKET DREDGER	RID.	2504	20,000	5.50x17.47x7.00	205
9	SUCTION PIPE DREDGER ⌀ 12"	BUCYRUS CO., U.S.A.	2461	24,000	5.80x27.45x7.60	250
11	SHOVEL DREDGER	FLEMING & FURGUSON PAISIEY, SCOTLAND	2474	32,000	11.92x29.80X4.60	240
12	MULTI-BUCKET DREDGER	RID.	2493	7,000	4.42x9.00x3.00	56
14	MULTI-BUCKET DREDGER	CARL B.HOFFMANN., DENMARK	2493	7,000	3.58x8.45x3.10	56
15	MULTI-BUCKET DREDGER	CARL B.HOFFMANN., DENMARK	2493	7,000	3.58x8.45x3.10	56
16	MULTI-BUCKET DREDGER	CARL B.HOFFMANN., DENMARK	2493	7,000	3.58x8.45x3.10	56
17	MULTI-BUCKET DREDGER	CARL B.HOFFMANN., DENMARK	2493	7,000	3.58x8.45x3.10	56
18	MULTI-BUCKET DREDGER	CARL B.HOFFMANN., DENMARK	2493	7,000	3.58x8.45x3.10	56
19	SHOVEL DREDGER	FLEMING & FURGUSON PAISIEY, SCOTLAND	2495	32,000	11.92x29.80x4.60	324
20	SHOVEL DREDGER	FLEMING & FURGUSON PAISIEY, SCOTLAND	2495	32,000	11.92x29.80x4.60	324
21	MULTI-BUCKET DREDGER	B.F. De GROOT., HOLLAND	2498	20,000	5.00x12.00x7.00	139
22	MULTI-BUCKET DREDGER	B.F. De GROOT., HOLLAND	2498	20,000	5.00x12.00x7.00	139
23	SUCTION PIPE DREDGER ⌀ 12"	ORENSTEIN KOPPEL & LUEBECKER., GERMANY.	2496	30,000	5.49x15.50x3.23	250
24	SUCTION PIPE DREDGER ⌀ 12"	ORENSTEIN KOPPEL & LUEBECKER., GERMANY.	2496	30,000	5.49x15.50x3.23	250
25	SUCTION PIPE DREDGER ⌀ 16"	RID.	2502	35,000	9.29x27.35x6.34	595
26	SUCTION PIPE DREDGER ⌀ 16"	RID.	2504	35,000	9.29x27.35x6.34	595
27	SUCTION PIPE DREDGER ⌀ 12"	ELLICOTT. U.S.A.	2504	30,000	4.87x12.80x4.60	390
28	SUCTION PIPE DREDGER ⌀ 12"	ELLICOTT. U.S.A.	2505	30,000	4.87x12.00x4.60	390
29	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
30	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
31	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
32	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
33	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
34	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
35	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
36	SUCTION PIPE DREDGER ⌀ 14"	AMMCO. U.S.A.	2507	35,000	5.52x12.20x6.43	454
37	SUCTION PIPE DREDGER ⌀ 12"	AMMCO. U.S.A.	2511	35,000	5.44x13.65x6.10	335

Thai Calender 2532 = A.D.1989

DREDGER No.	TYPE of DREDGER	MANUFACTURER	B.E.of PURCHASE	CAPACITY M³/MONTH	DIMENSIONS WIDTHxLENGTHx HEIGHT m x m x m	TOTAL ENGINE CAP. (Hp)
38	SUCTION PIPE DREDGER ⌀ 12"	AMMCO. U.S.A.	2511	35,000	5.44x13.65x6.10	335
39	SUCTION PIPE DREDGER ⌀ 12"	AMMCO. U.S.A.	2511	35,000	5.44x13.65x6.10	335
40	SUCTION PIPE DREDGER ⌀ 12"	AMMCO. U.S.A.	2511	35,000	5.44x13.65x6.10	335
41	SUCTION PIPE DREDGER ⌀ 20"	I.H.C. HOLLAND.	2511	67,000	9.50x44.50x6.40	2,500
42	SUCTION PIPE DREDGER ⌀ 14"	DIXIE DREDGE. U.S.A.	2512	35,000	4.50x15.25x6.40	335
43	SUCTION PIPE DREDGER ⌀ 14"	DIXIE DREDGE. U.S.A.	2512	35,000	4.50x15.25x6.40	335
44	SUCTION PIPE DREDGER ⌀ 14"	DIXIE DREDGE. U.S.A.	2512	35,000	4.50x15.25x6.40	335
45	SUCTION PIPE DREDGER ⌀ 14"	DIXIE DREDGE. U.S.A.	2512	35,000	4.50x15.25x6.40	335
46	SUCTION PIPE DREDGER ⌀ 14"	D.M.I. U.S.A.	2518	38,000	4.50x15.25x6.40	335
47	SUCTION PIPE DREDGER ⌀ 14"	D.M.I. U.S.A.	2518	38,000	4.50x15.25x6.40	335
48	SUCTION PIPE DREDGER ⌀ 8"	MUD-CAT. U.S.A.	2519	6,000	4.87x12.80x4.60	175
49	SUCTION PIPE DREDGER ⌀ 8"	MUD-CAT. U.S.A.	2519	6,000	4.87x12.80x4.60	175
50	SUCTION PIPE DREDGER ⌀ 6"	KURIMOTO. JAPAN.	2520	7,000	4.87x12.80x4.60	180
51	SUCTION PIPE DREDGER ⌀ 6"	KURIMOTO. JAPAN.	2520	7,000	4.87x12.80x4.60	180
52	SUCTION PIPE DREDGER ⌀ 6"	RID.	2526	24,000	4.87x12.80x4.60	300
53	BACKHOE DREDGER 3/4 CU.YARD	RID.	2532	20,000	5.00x11.95x2.00	115
54	BACKHOE DREDGER 3/4 CU.YARD	RID.	2532	20,000	5.00x11.95x2.00	115
55	SUCTION PIPE ⌀ 14"	KURIMOTO. JAPAN.	2528	38,000	4.50x15.25x6.40	576
56	SUCTION PIPE ⌀ 14"	KURIMOTO. JAPAN.	2528	38,000	4.50x15.25x6.40	576
57	BACKHOE DREDGER 400 LITE	CONVER B.V. NETHERLAND	2529	11,000	2.50x7.00x2.00	65
58	BACKHOE DREDGER 400 LITE	CONVER B.V. NETHERLAND	2529	11,000	2.50x7.00x2.00	65
59	BACKHOE DREDGER 3/4 CU.YARD	KATO JAPAN	2530	20,000	5.00x11.95x2.00	98
60	BACKHOE DREDGER 3/4 CU.YARD	KATO JAPAN	2530	20,000	5.00x11.95x2.00	98
61	SUCTION PIPE DREDGER ⌀ 8"	KURIMOTO. JAPAN.	2530	15,000	4.87x12.80x4.60	330
62	SUCTION PIPE DREDGER ⌀ 8"	KURIMOTO. JAPAN.	2530	15,000	4.87x12.80x4.60	330
63	SUCTION PIPE DREDGER ⌀ 8"	KURIMOTO. JAPAN.	2530	15,000	4.87x12.80x4.60	330
64	BACKHOE DREDGER 3/4 CU.YARD	CATERPILLAR. BELGIUM	2530	20,000	5.00x11.95x4.60	115
	TOTAL OF DREDGER 60 SETS		TOTAL CAPACITY		1,508,000 m³/MONTH 15,000,000 m³/YEAR	
11.1	WATER HYACINTH REMOVER	AQUAMARINE H-650 HARVESTER U.S.A.	2518	1,800 TONS/MONTH		
11.2	WATER HYACINTH REMOVER	AQUAMARINE AQUATRIO H-650 U.S.A.	2522	1,800 TONS/MONTH		
11.3	WATER HYACINTH REMOVER	AQUAMARINE AQUATRIO H-650 U.S.A.	2522	1,800 TONS/MONTH		
11.4	-	AQUAHARVESTER MITSUI JAPAN	2528	-		
11.5	CUTTER BOAT	RID.	2530	-		

表－17　　ランシット水路浚渫記録

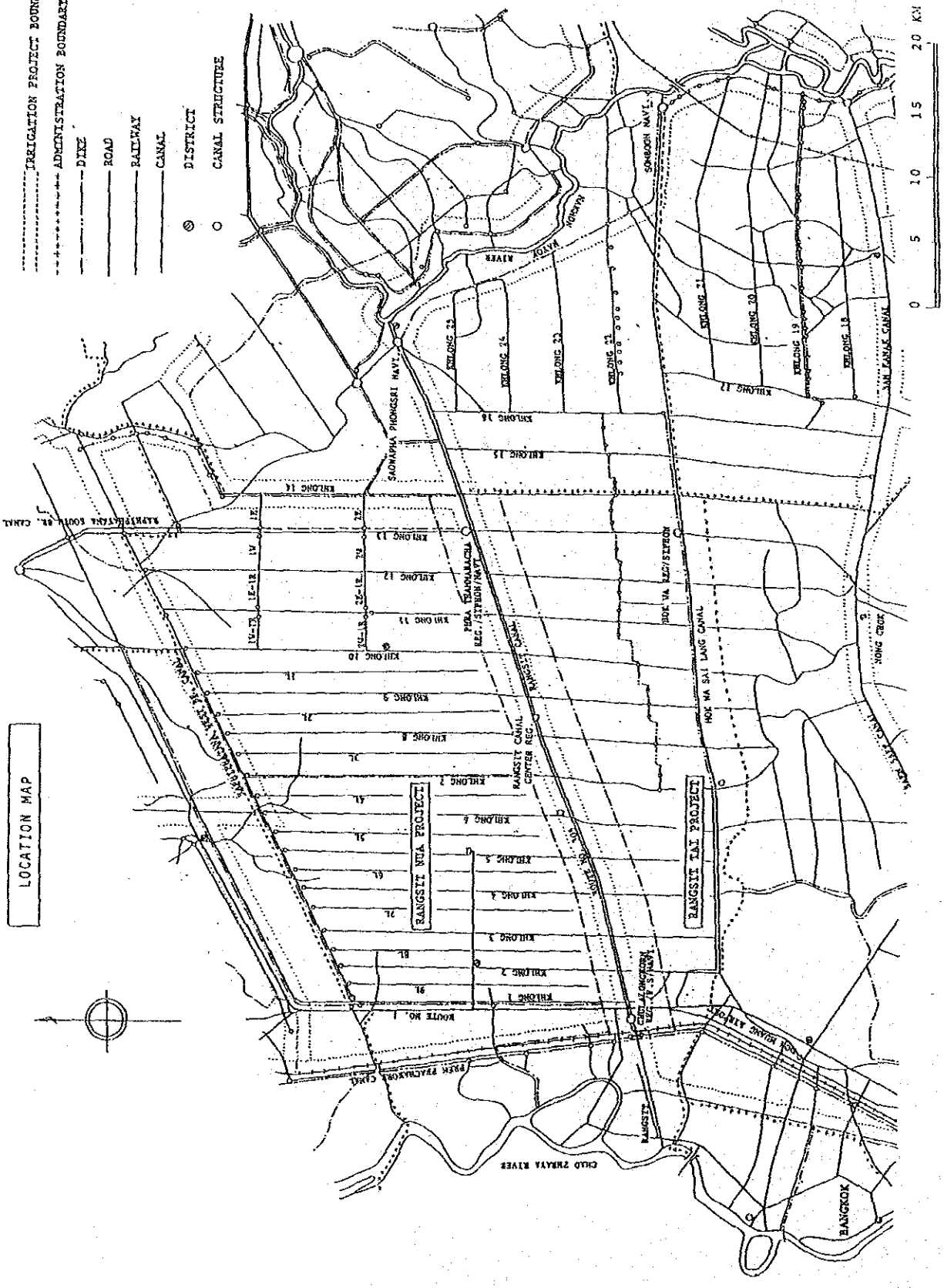
Canal	Section	Location		Length	Quantity	Period		Equipment
		From	To			From	To	
	(km)	(km)	(km)	(km)	(m^3)			
Rangsit	6.17	20.10	21.73	1.63	169,000	24/11/81	24/8/82	Bucket Dredger(W:5.5xL:17.47x H:7.0m) (1960)
		22.20	23.44	1.24				
		23.48	23.77	0.29				
		24.00	27.10	3.01				
	4.38	17.36	17.92	0.56	146,000	3/3/82	31/8/82	Bucket Dredger(W:5.0xL:12.0X H:7.0m) (1954)
		18.18	20.00	1.82				
		27.06	27.51	0.45				
		28.02	29.57	1.55				
	9.56	29.57	37.58	8.01	201,000	3/3/82	24/8/83	Bucket Dredger(-ditto-)
		37.65	39.20	1.55				
	4.62	11.82	16.2	4.62	95,000	9/1/83	31/8/83	Suction Pipe Dredger (ø 300 mm) (W:5.49xL:15.5xH:3.23 m)(1952)
	13.50	39.28	39.88	0.60	292,000	1/11/82	28/7/83	Suction Pipe Dredger (ø 400 mm) (W:9.29xL:27.35H:6.34 m)(1958)
		39.93	40.41	0.48				
		z0.49	40.66	0.17				
		40.74	41.63	0.89				
		41.72	44.28	2.56				
		44.40	53.20	8.80				
Total	33.61				903,000			

付　図

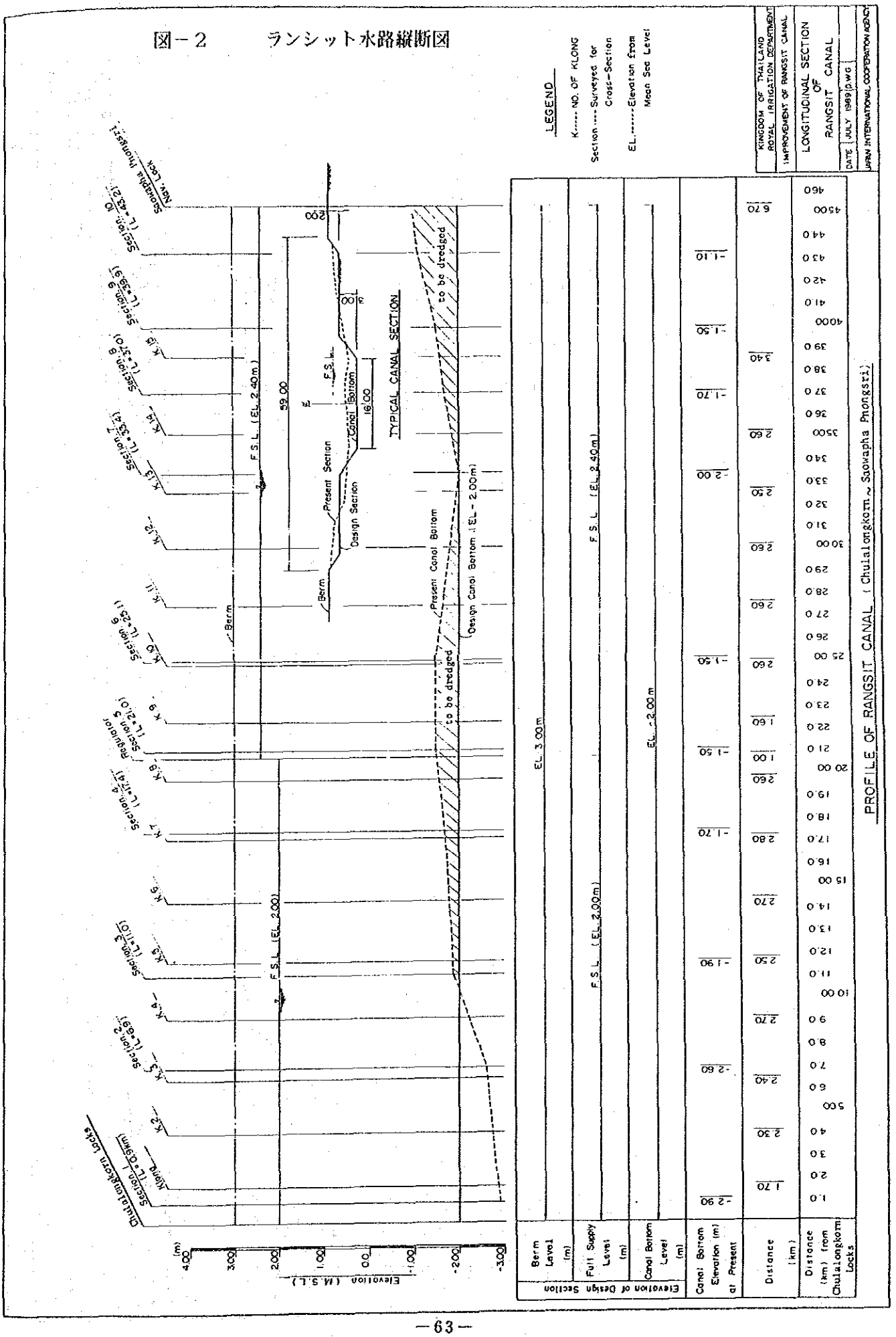
図

図－1　ランシット地区平面図
－2　ランシット水路縦断図
－3　ランシット水路横断図
－4　ランシット水路横断面位置図
－5　ランシット水路横断構造物（橋梁等）位置
－6　ＲＩＤ組織図
－7　ＭＥＤ組織図
－8　ランシット水路改修班（ＰＩＲＣ）組織図
－9　ＭＥＤ浚渫部管轄区域
－10　バックホー浚渫船概略図
－11　非航土運船概略図
－12　引き船概略図
－13　水路浚渫作業システム
－14　実施スケジュール

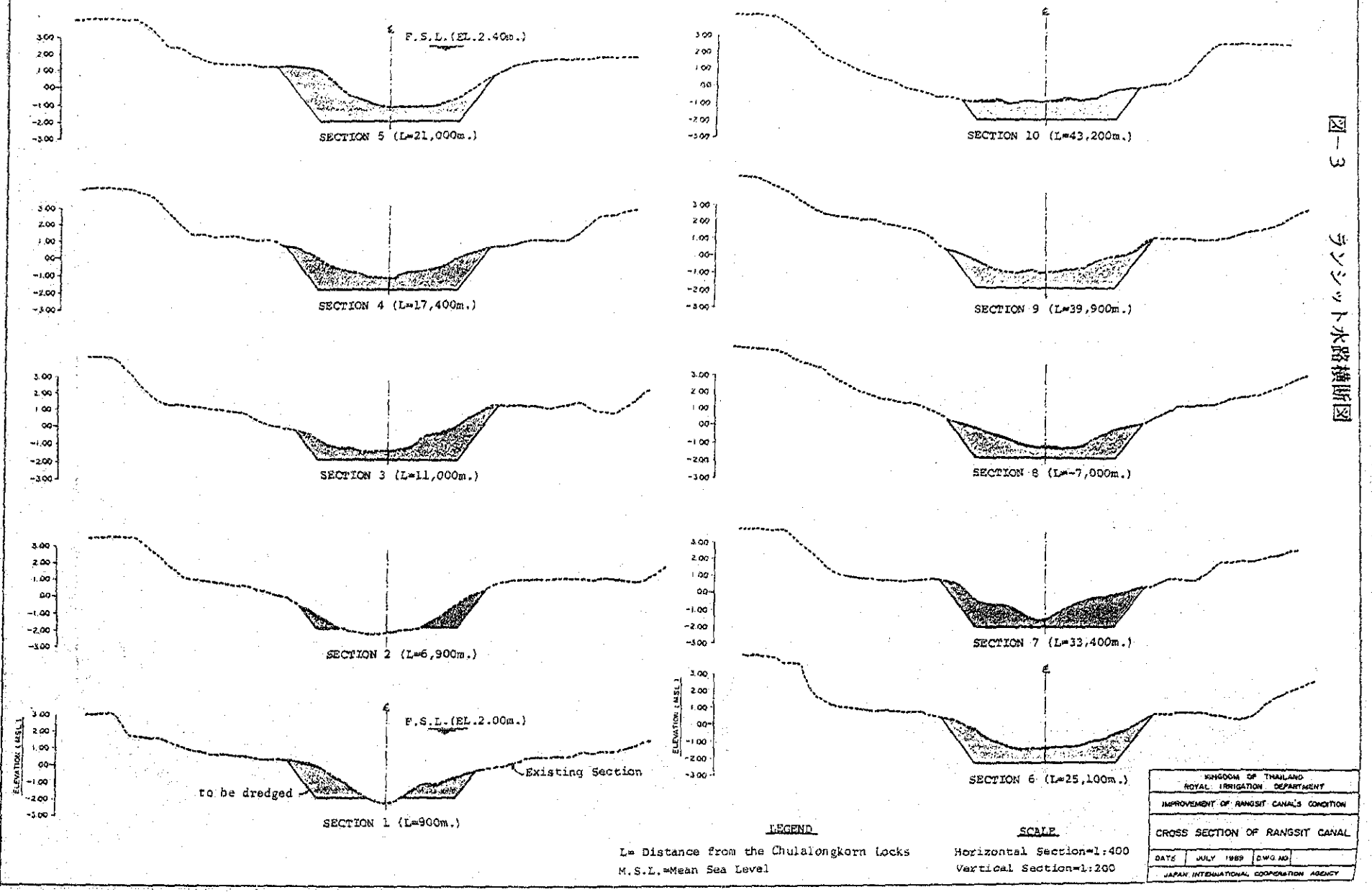
図－1　　ランシット地区平面図



図－2　　ランシット水路縦断図



図－3　ランシット水路横断図



図－4　　ランシット水路横断面位置図

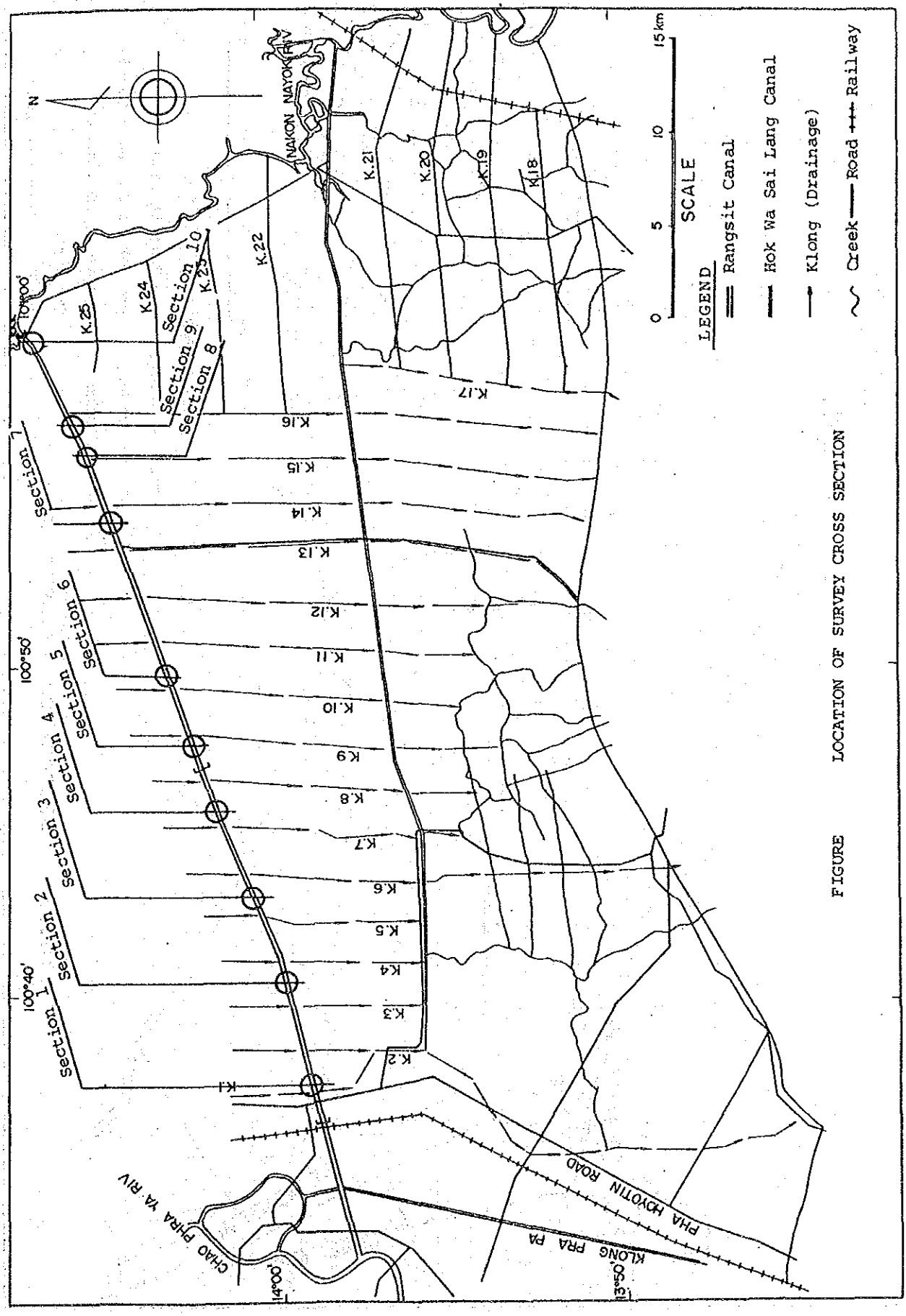
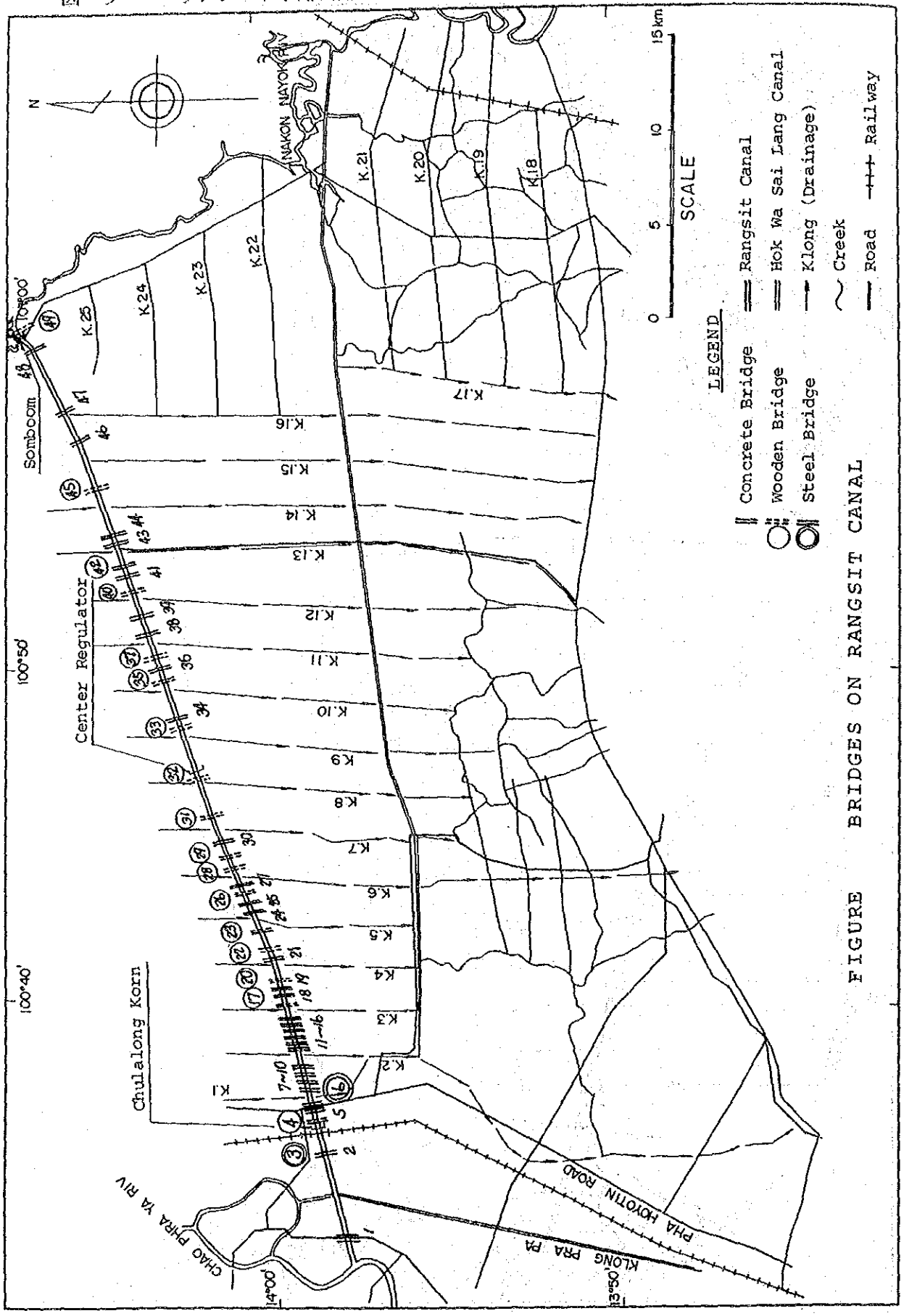
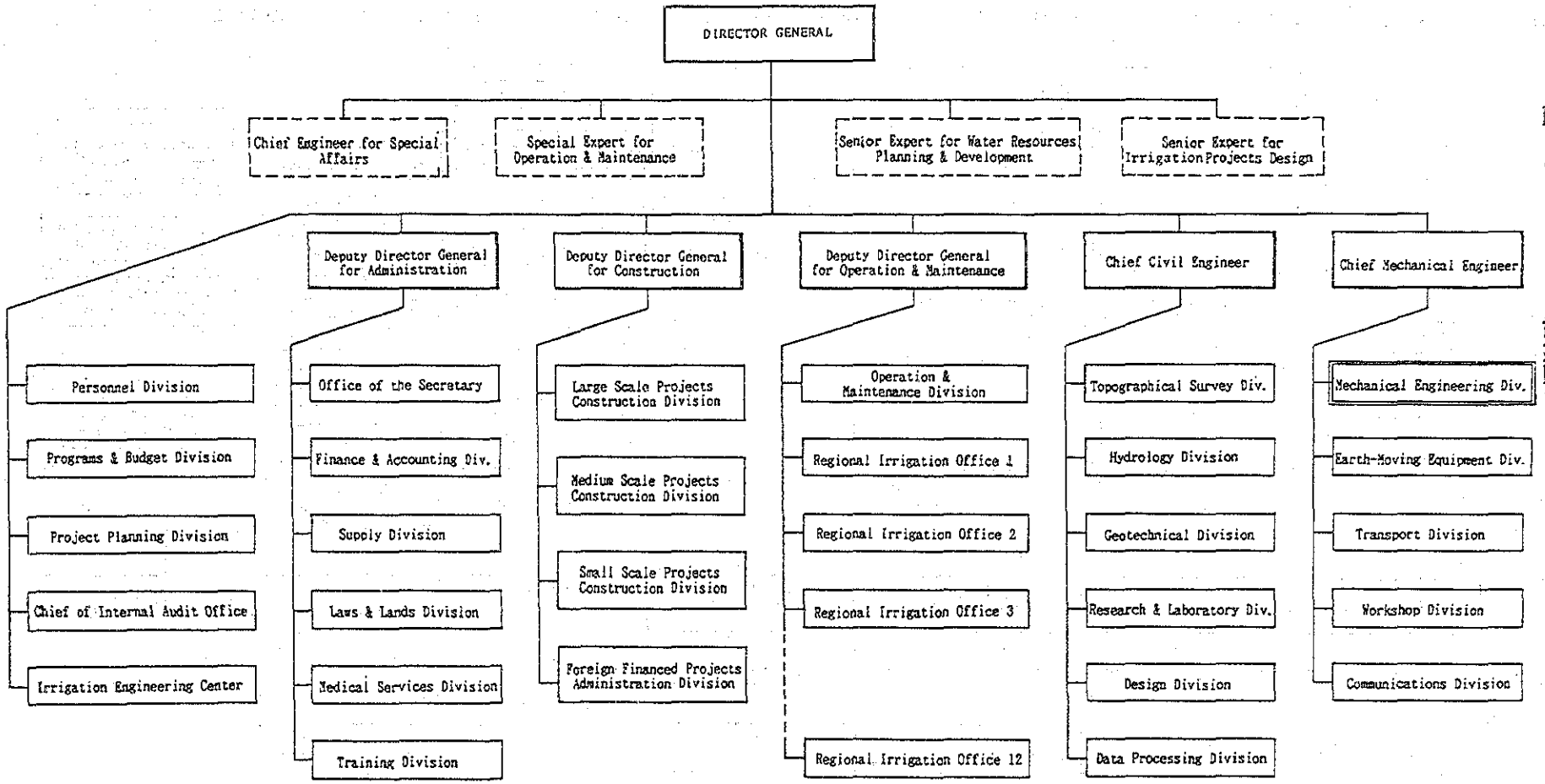


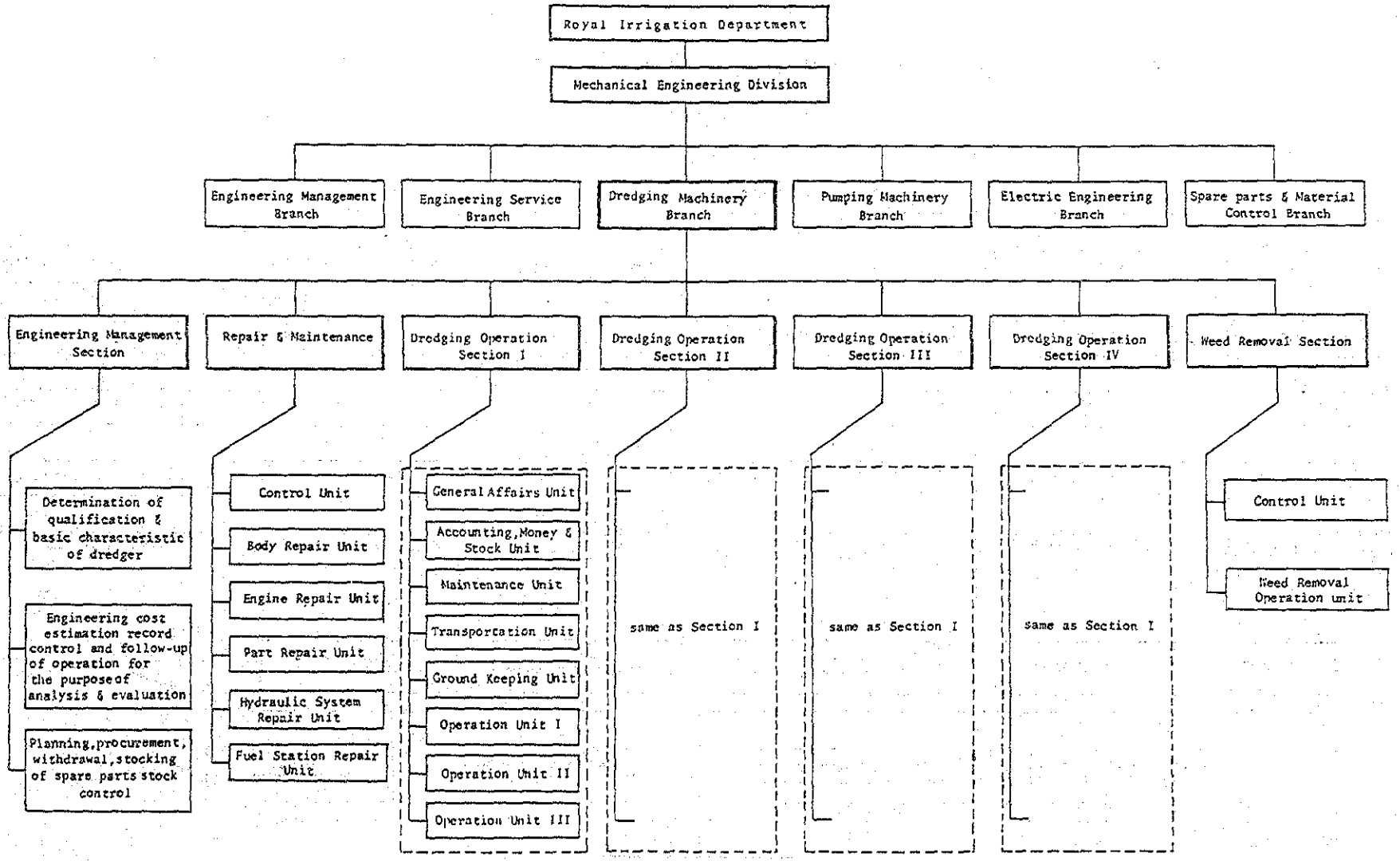
FIGURE　LOCATION OF SURVEY CROSS SECTION

図－5　　ランシット水路横断構造物（橋梁等）位置



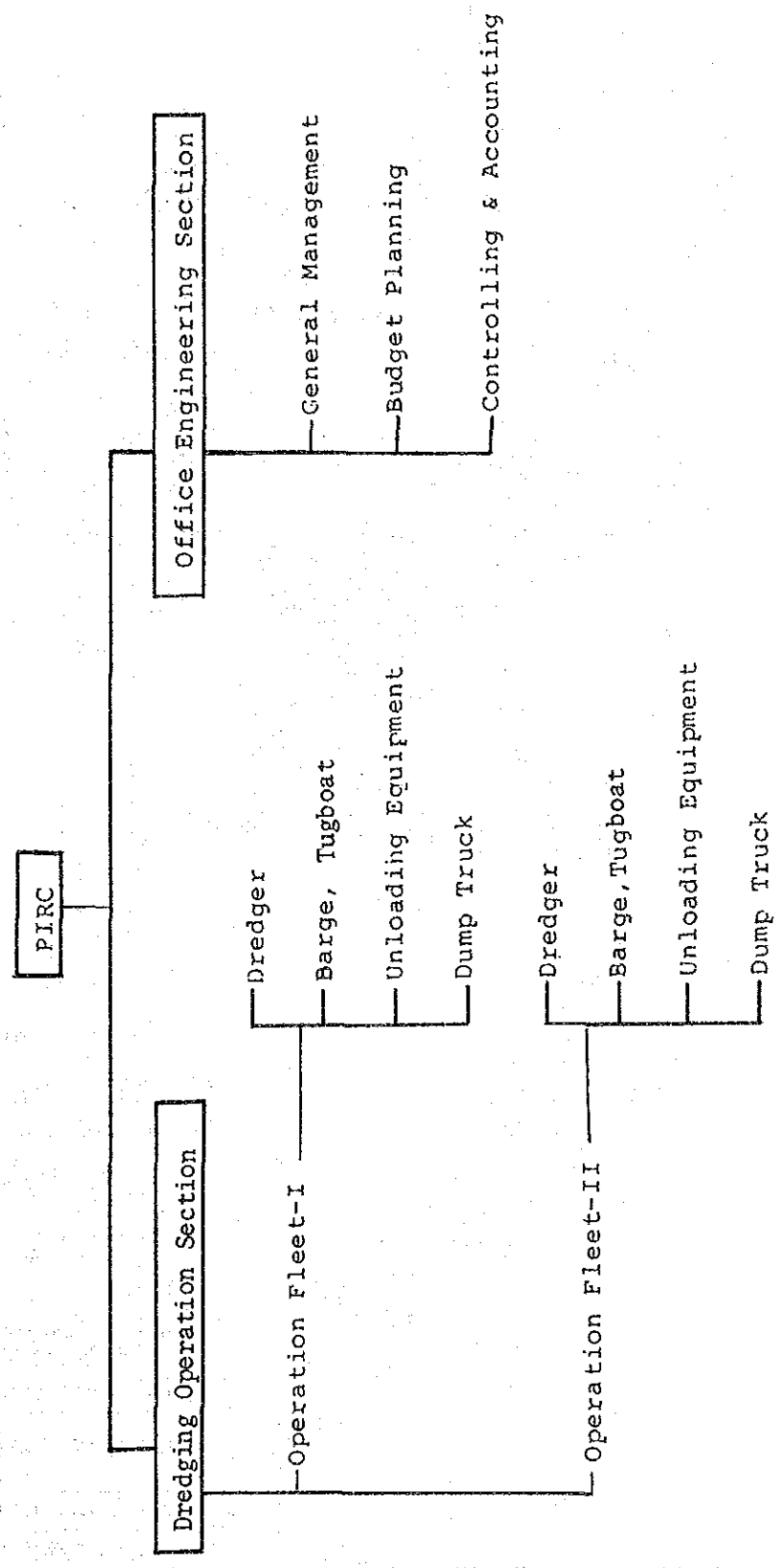


ORGANIZATION OF ROYAL IRRIGATION DEPARTMENT



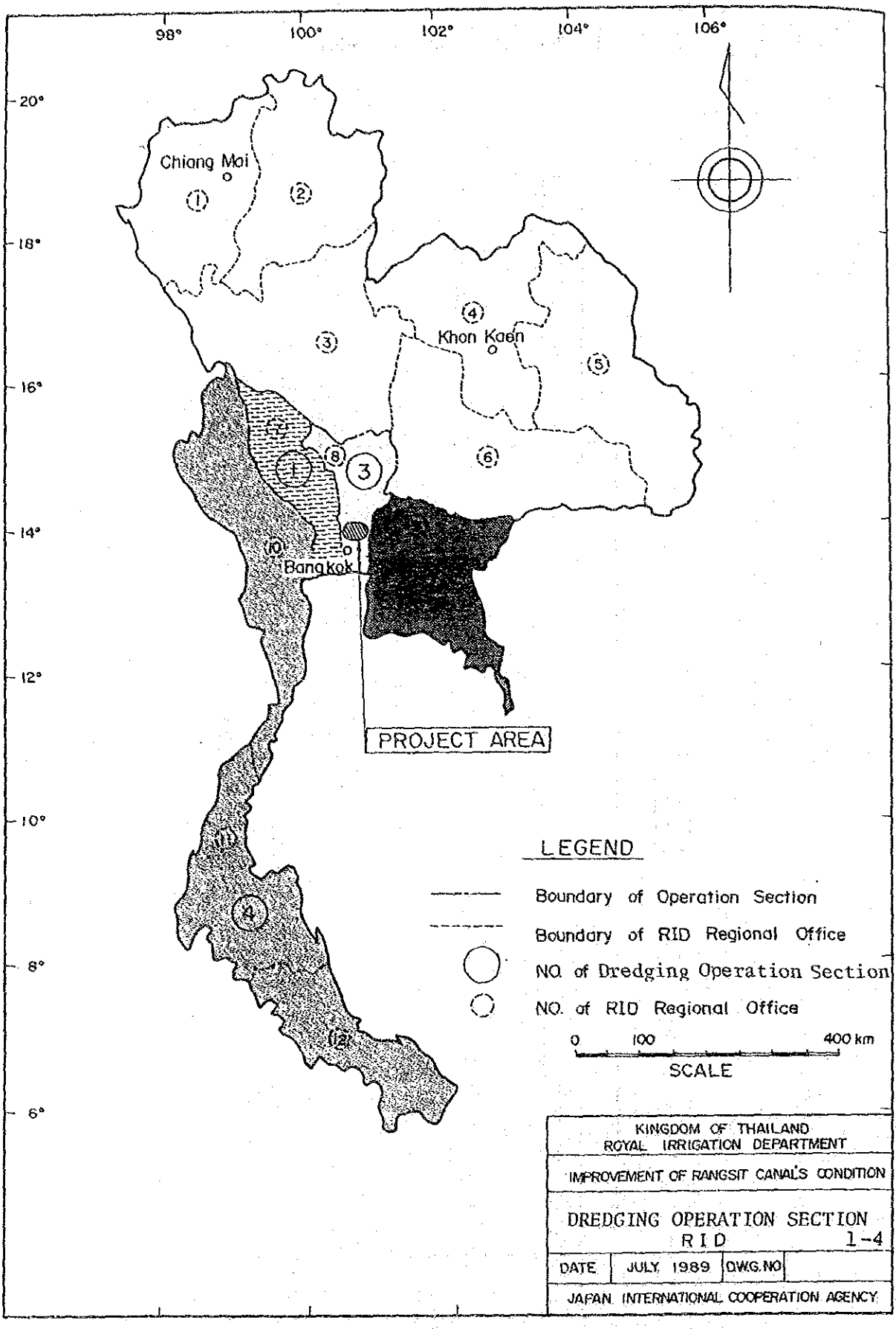
ORGANIZATION OF DREDGING OPERATION SECTION
MECHANICAL ENGINEERING DIVISION , RID

図－8　　ランシット水路改修班（ＰＩＲＣ）組織図

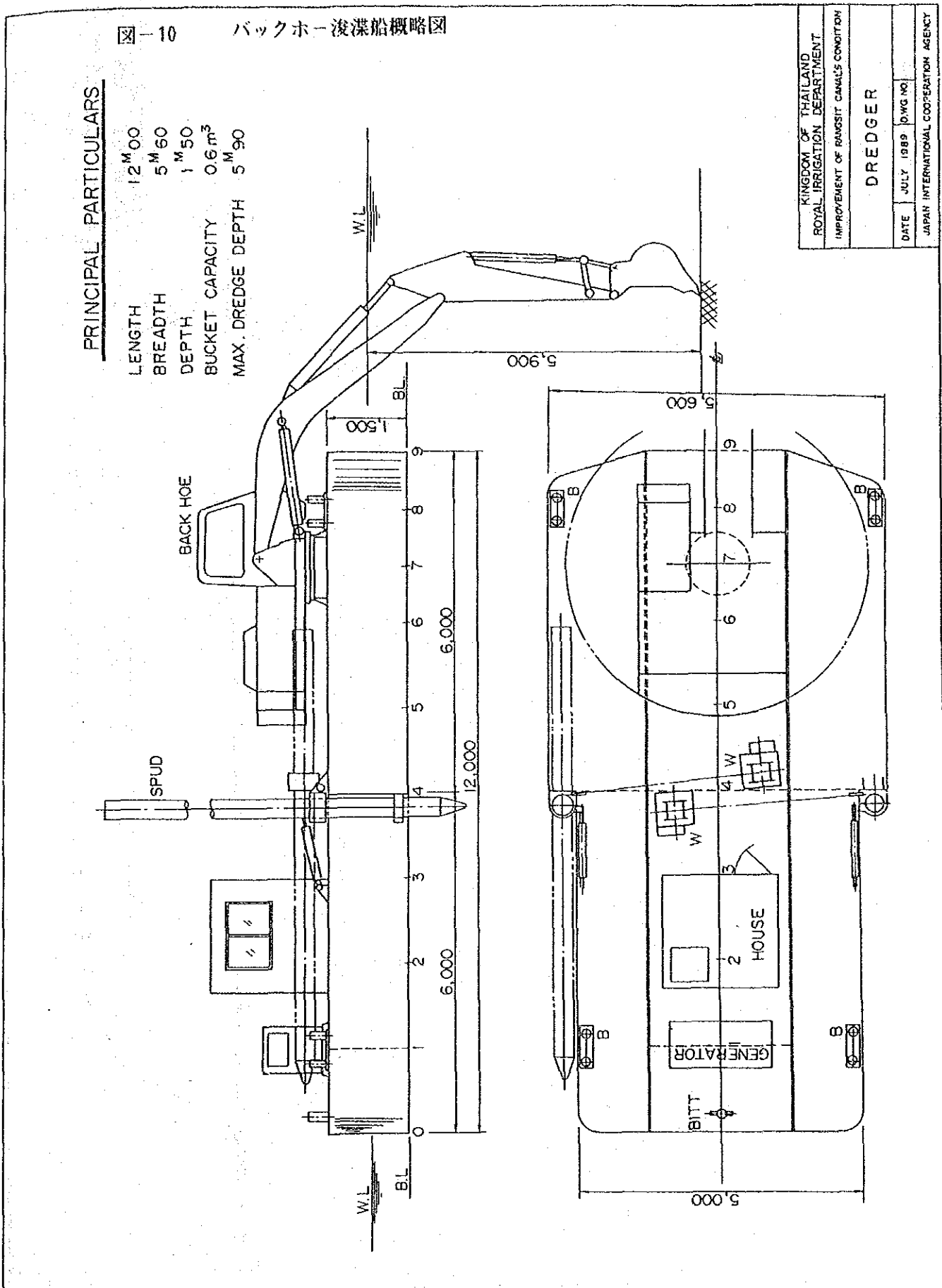


Note: PIRC: Project on the Improvement of Rangsit Canal

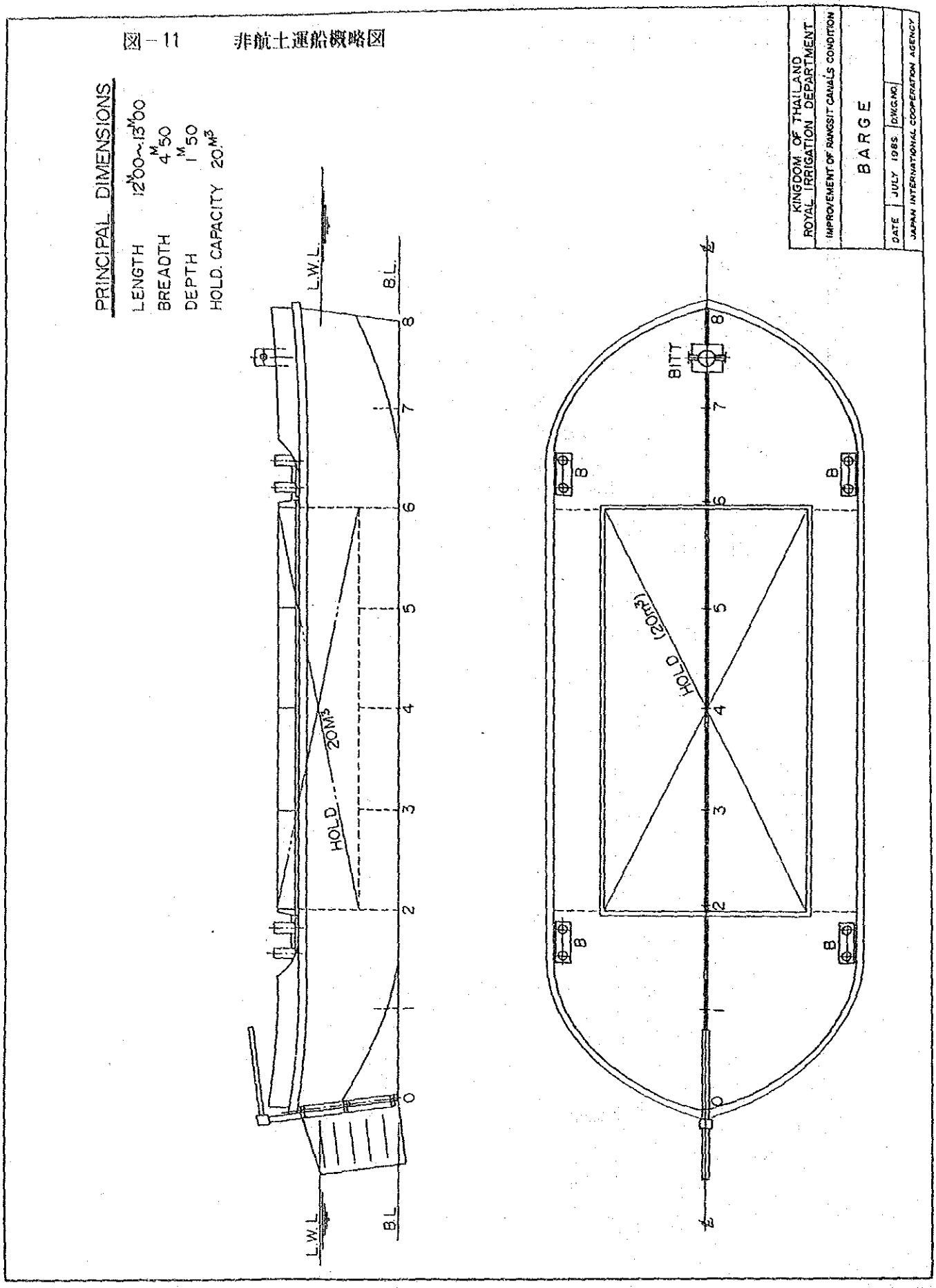
図－9　　ＭＥＤ浚渫部管轄区域



図－10　バックホー浚渫船概略図

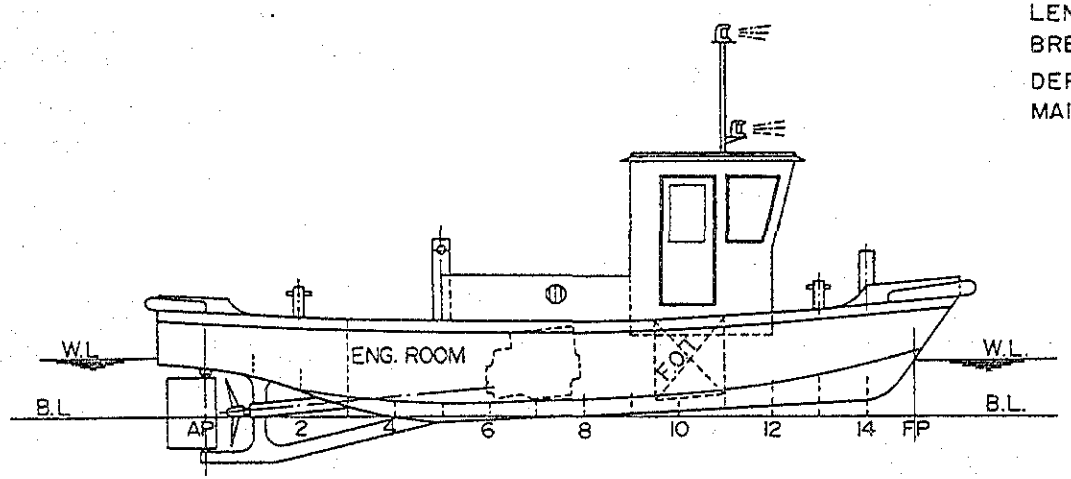


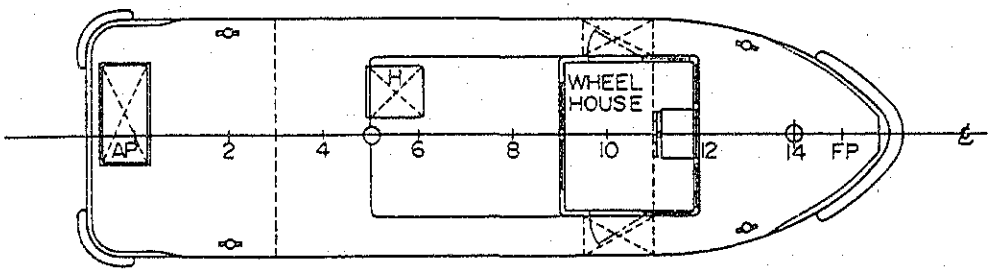
図－11　　非航土運船概略図



PRINCIPAL PARTICULARS

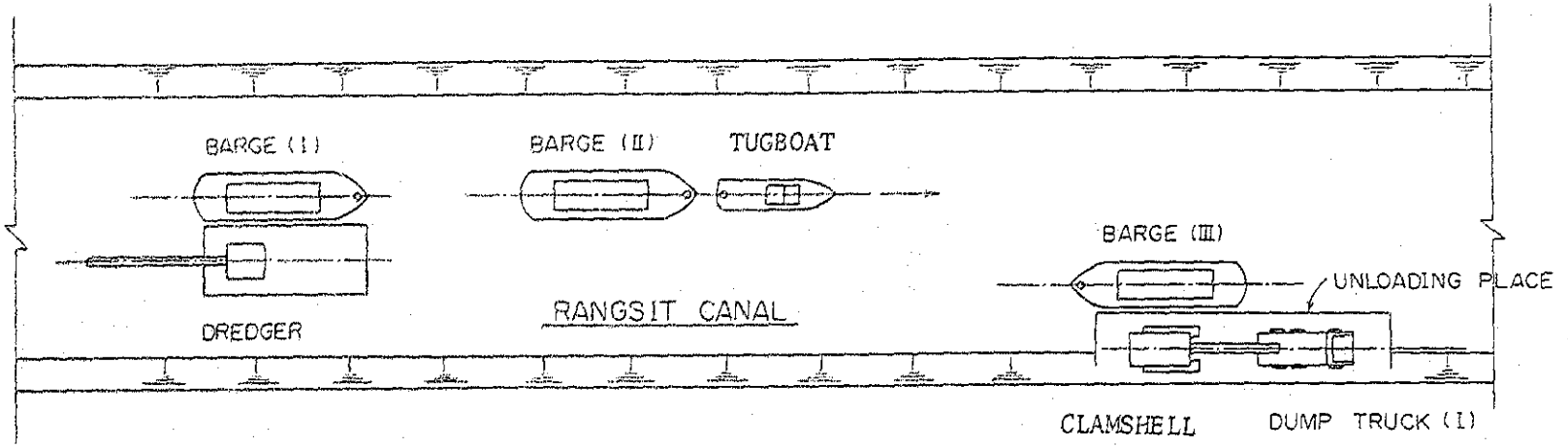
LENGTH (O.A)	$7^{M}500 \sim 9^{M}000$
BREADTH	$2^{M}500 \sim 3^{M}000$
DEPTH	$1^{M}000 \sim 1^{M}500$
MAIN ENGINE (abt)	150^{PS} x 1 SET



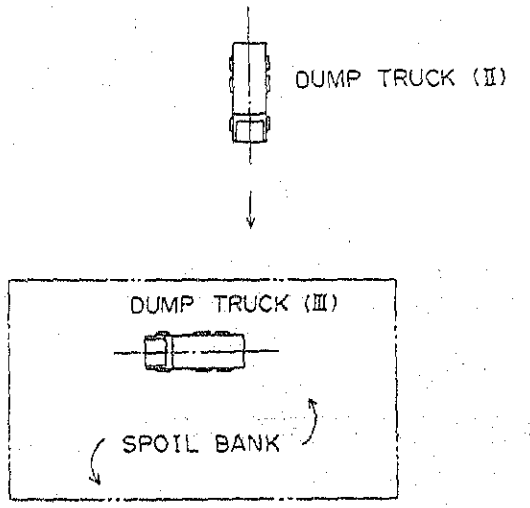


KINGDOM OF THAILAND ROYAL IRRIGATION DEPARTMENT			
IMPROVEMENT OF RANGSIT CANALS CONDITION			
TUG BOAT			
DATE	JULY 1989	D.W.G.NO.	
JAPAN INTERNATIONAL COOPERATION AGENCY			

DREDGING SYSTEM

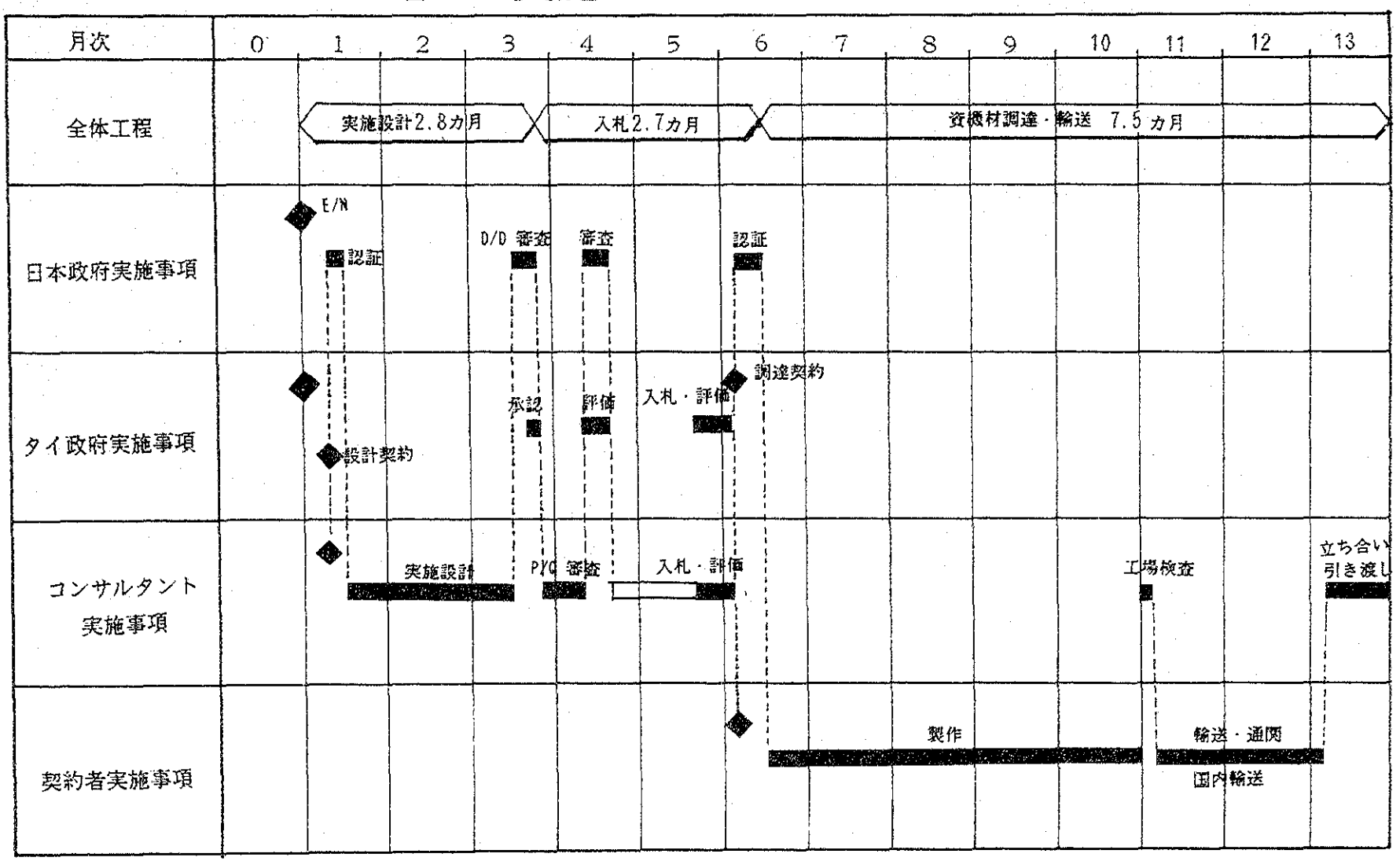


EQUIPMENT OF FLEET	NUMBER OF UNITS
1) DREDGER	1
2) BARGE	3
3) TUGBOAT	1
4) CLAMSHELL	1
5) DUMP TRUCK	3



図－13　水路浚渫作業システム

図－14　実施スケジュール



付属資料

資料編

1．　調査団の構成
1－1　基本設計調査団
1－2　ドラフト・ファイナルレポート説明

2．　調査日程
2－1　調査日程（自1989.3.19 －　至1989.4.8.）
2－2　調査日程（自1989.6. 4 －　至1989.6.10）

3．　調査協力者
3－1　調査協力者（自1989.3.19 －　至1989.4.8.）
3－2　調査協力者（自1989.6. 4 －　至1989.6.10）

4．　ＲＩＤとの協議議事録
4－1　協議議事録（1989.3.27）
4－2　協議議事録（1989.6. 8）

1．　調査団の構成

1－1　基本設計調査団

団　長	大内晃	外務省経済協力局 無償資金協力課
水利用計画	中島信義	農用地開発公団工務部 開発課長
水路改修	井上幸一	㈱三祐コンサルタンツ
浚　渫	久米孝雄	〃
取水施設	渡辺真道	〃

1－2　ドラフトファイナル・レポート説明

団長	松田教男	国際協力事業団・無償資金協力業務部 業務第1課
水路改修	井上幸一	㈱三祐コンサルタンツ
取水施設	渡辺真道	〃

2-1 調査日程 (自 1989.3.19－至 1989.4.8)

Month	Date	Day	Trip	Member of Party	Remarks
Mar.	19	Sun.	Trip		Tokyo-BKK
	20	Mon.	BKK		
			JICA Office	Mr, ENDO	Courtesy Call
				Mr. YAMASHITA	
			Embassy	Mr. HIRASHIMA (First Secretary	
			RID	Mr. NIT Kesjumbol (Chief of Mech. Engineering Division, RID)	
				Mr. SUTHI Songvoravit (Chief of PPS-1, RID)	
	21	Tue	Field Survey	Mr. PRECHA Kanjananuson (Mech. Eng. Dredger, MED,RID)	Rangsit
				Mr. VISOOT Kungsamant (Dredge branch MED, RID)	
				Mr. YONGYUTH Yonpian (Dredge Branch MED,RID)	
				Mr. KUSOL Utasshawa (PPD-1, RID)	
				Mr. YAMASHITA	
				Mr. MATSUO (Colombo Plan Expert)	
	22	Wed	Workshop RID	Mr. BANCHONG Vadhan, (Expert of Workshop Division, RID)	Chulalong Korn
				Mr. PRECHA	
				Mr. VISOOT	
				Mr. KUSOL	
	23	Thu	RID	Mr. NIT	Meeting
				Mr. PRAYUT Chuen (Director, MED, RID)	
				Mr. KID Seiyaramya (Chief, MED,RID)	
				Mr. SUCHI	
				Mrs. SAEWANEE Thamnsara (Weed Control and research Branch, Research & Labo. Div.RID)	

Month	Date	Day	Trip	Member of Party	Remarks
Mar.	23	Thu	RID	Mr. NIPAT Plana yovit(Project manager Rangsit O/M Div. RID) Mr. PRECHA Mr. THANOW Klajayai(Water Control, O/M Div. RID) Mr. VISOOT Mr. MATSUO , Mr. ARAKI	
	24	Fri	RID	Mr. NIT Mr. SUTHI Mr. PRAYUT Mr. YONGYUTH Mr. NIPAT Mr. PRECHA Mr. THANOM Mr, VISOOT	Meeting on Minutes of Dis.
	25	Sat.	Field	Mr. PRECHA Mr. VISOOT Mr. KUSOL Mr. MATSUO	San Song Canal
	26	Sun	BKK		Staff Meeting
	27	Mon	RID	Mr. NIT Mr. SUTHI Mr. PRAYUT Mr. YONGYUTH Mrs. SAEWANEE Mr. NIPAT Mr. PRECHA Mr. THANOM Mr. VISOOT Mr. MATSUO. Mr. ARAKI	Sign of Minutes
			Jap. Embassy	Mr. HIRASHIMA	
			JICA, BKK	Mr. YAMASHITA	

Month	Date	Day	Trip	Member of Party	Remarks
	28	Tue	Trip	(Team Leader, Mr. NAKAJIMA)	BKK-Tokyo
			Pakkret	Mr. PRAYUT	Meeting
				Mr. YONGYUTH	
				Mr. NIPAT	
				Mr. PRECHA	
			Pakkret	Mr. VISOOT	
	29	Wed			
	}				
Apr.	6	Thu	Rangsit,	Mr. NIPAT	Field Survey and
				Mr. VISOOT	Meeting
				Mr. PRECHA	
				Mr. SUTHI	
				Mr. PRAYUT	
				Mr. YONGYUTH	
	7	Fri	RID	Mr. NIT	Courtesy Call
			JICA	Mr. YAMASHITA	
				Mr. MATSUO	
	8	Sat	Trip		BKK-Tokyo

2－2　調査日程　（自 1989.6. 4－至 1989.6.10）

Month	Date	Day	Trip	Member of Party	Remarks
June	4	Sun	Tokyo-BKK		Trip
	5	Mon		Mr. YAMASHITA (JICA)	Courtesy call
				Mr. HIRASHIMA (Embassy)	
				Mr. NIT (Chief of MED,RID)	
				Mr. SUTHI (Chief of PPS-1,RID)	
	6	Tue		Mr. NIT (RID)	Explanation of Report
				Mr. SUTHI (-do-)	
				Mr. PRAYUT (-do-)	
				Mr. YONGYUTH (-do-)	
				Mr. PRECHA (-do-)	
				Mr. VISOOT (-do-)	
				Mrs. SAEWANEE (-do-)	
				Mr. ARAKI (Colombo Plan Expert)	
	7	Wed		Mr. NIT (RID)	Meeting on Minutes of Discussions
				Mr. SUTHI (-do-)	
				Mr. ARAKI (CPE)	
	8	Thu		Mr. NIT (RID)	Signing of Minutes
				Mr. SUTHI (RID)	
				Mr. ARAKI (CPE)	
	9	Fri		Mr. YAMASHITA (JICA)	Courtesy call
				Mr. HIRASHIMA (Embassy)	
	10	Sat	BKK-Tokyo		Trip

3－1　調査協力者　（ 自 1989.3.19－至 1989.4.8 ）

1, RID

Mr. Nit Kesjumbol	Chief of Mechanical Engineering Division, RID
Mr. Suthi Songvoravit	Chief of Project Planning Section-1, RID
Mr. Prayut Chuensamran	Director, Mechanical Engineering Division,RID
Mr. Yongyuth Yonpian	Chief of Dredging Branch, Mechanical Engineering Division, RID
Mr. Banchong Vadhanaphong	Hydropower Pump Expert, Workshop Division,RID
Mr. Pracha Kanjananuson	Manager, Dredge Operation Section-III, Mechanical Engineering Division,RID
Mr. Visoot Kungsamant	Engineer, Dredge Operation Section-III, Mechanical Engineering Division, RID
Mr. Kusol Utasshawa	Engineer, Project Planning Section-I, RID
Mrs. Saewanee Thamnsara	Weed Control & Research Branch, Research & Laboratory Division, RID
Mr. Nipat Planayovit	Project Manager Rangsit, O/M Division, RID
Mr. Thanom Klajlayai	Water Control, O/M Division, RID

2．在タイ国日本国大使館

平　島　和　男	一等書記官

3．専　門　家

松　尾　和　重	JICA専門家
荒　木　文　雄	〃

4．JICA

山　下　恭　徳	JICAタイ事務所員

3－2　調査協力者　（　自 1989.6. 4－至 1989.6.10）

1. RID

Mr. Nit Kesjumbol	Chief of Mechanical Engineering Division, RID.
Mr. Suthi Songvoravit	Chief of Project Planning Section-1, RID.
Mr. Prayut Chuensamran	Director, Mechanical Engineering Division, RID.
Mr. Yongyuth Yonpian	Chief of Dredging Branch, Mechanical Engineering Division,RID.
Mr. Precha Kanjananuson	Manager, Dredge Operation Section-III MED, RID.
Mr. Visoot Kungsamaut	Engineer, Dredge Operation Section-III MED, RID.
Mrs. Saewanee Thamnsara	Weed Control & Research Branch, Research and Laboratory Division, RID.

2．在タイ国日本国大使館

平　島　和　男	一等書記官

3．JICA

山　下　恭　徳	JICAタイ事務所員

4．専　門　家

松　尾　和　重	JICA専門家
荒　木　文　雄	〃

4-1　RIDとの協議事項　(1989.3.27)

MINIUTES OF DISCUSSIONS
ON
THE PROJECT FOR THE IMPROVEMENT OF RANGSIT CANAL'S CONDITION
IN
THE KINGDOM OF THAILAND

In response to the request made by the Government of the Kingdom of Thailand for a Grant Aid on the Project for the Improvement of Rangsit Canal's Condition (hereinafter referred to as "the Project"), the Government of Japan decided to conduct a basic design study on the Project and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Thailand the Basic Design Study Team (hereinafter referred to as "the Team") headed by Mr. Akira OUCHI, Official, Grand Aid Division, Ministry of Foreign Affairs, to carry out the study from March 19 to April 8, 1989.

The Team had a series of discussions on the Project with the officials concerned of the Government of Thailand.

As a result of the study, both parties have agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Bangkok, March 27, 1989

Akira OUCHI
Leader of the Basic Design Study Team,
The Japan International Cooperation Agency

Nit Kesjumbol
Chief Mechanical Engineer,
Royal Irrigation Department

ATTACHMENT

1. Objective

The objective of the Project is to improve Rangsit Canal's condition in order to distribute irrigation water smoothly in the area and to drain easily out of the area by supplying necessary equipment.

2. Executing Agency

The Royal Irrigation Department (hereinafter referred to as "RID") which is the implementing agency of the Government of Thailand, is responsible for the administration and execution of the Project.

3. Understanding of Japan's Grant Aid System

The Thai side has understood Japan's Grant Aid system explained by the Team.

4. Request by the Government of Thailand

The Team will convey to the Government of Japan the desire of the Government of Thailand that the former takes necessary measures to co-operate by providing equipment shown in Annex I within the scope of Japanese Economic Cooperation Program in grand form.

5. Measures to be taken by the Government of Thailand

The Government of Thailand will take the necessary measures listed in Annex II on condition that a Grant Aid by the Government of Japan would be extended to the Project.

ANNEX I

Major equipment requested by the Government of Thailand for the Project are as follows:

1. Dredging boats
2. Barges
3. Tug boats
4. Cranes
5. Dump trucks
6. Sheet piles, etc.

f. o.

Nil

ANNEX II

Necessary measures to be taken by the Government of Thailand:

1. To ensure prompt unloading and customs clearance at the port of disembarkation in Thailand.

2. To bear commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.

3. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contracts such facilities as may be necessary for their entry into Thailand and stay therein for the performance of their work.

4. To maintain and use properly and effectively the products purchased under Japan's Grant Aid.

5. To bear all the expenses other than those to be borne by the Grant necessary for the execution of the Project.

6. To exempt Japanese nationals involved in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Thailand with respect to the supply of the products and services under the verified contracts.

7. To ensure the necessary budget and personnel for the proper and effective operation and maintenance of the equipment provided under Japan's Grant Aid.

8. To secure the unloading place from barges and spoil bank for the removed soil and weeds.

9. To make the facilities available for the assembly of the equipment provided under Japan's Grant Aid.

4－2　ＲＩＤとの協議事項　(1989.6.8)

MINUTES OF DISCUSSION

ON

THE DRAFT FINAL REPORT OF THE BASIC DESIGN STUDY

ON

THE PROJECT FOR THE IMPROVEMENT OF RANGSIT CANAL

THE KINGDOM OF THAILAND

In response to the request made by the Government of the Kingdom of Thailand, the Government of Japan decided to conduct a basic design study on the Project for the Improvement of Rangsit Canal (hereinafter referred to as "the Project") and entrusted the study to Japan International Cooperation Agency (JICA). JICA subsequently sent a study team to Thailand from March 19 to April 8,1989.

As the result of the study, JICA prepared a draft final report and dispatched a team, headed by Mr.Norio Matsuda, First Project Management Div., Grant Aid Project management Dept., JICA from June 4 to 10,1989 for presentation and discussions thereon.

The team had a series of discussions on the Project with the officials concerned of the Government of Thailand headed by Mr.Nit Kesjumbol, Chief Mechanical Engineer, Royal Irrigation Department, Ministry of Agriculture and Cooperatives, the Kingdom of Thailand.

After clarifying contents of the report, both parties herein agreed to recommend to their respective Governments that the major points of understanding reached by and between them, attached herewith, should be examined towards materialization of the Project.

8th June, 1989

Norio Matsuda
Leader
The Study Team
JICA

Nit Kesjumbol

Nit Kesjumbpol
Chief Mechanical Engineer
RID, MOAC
The Kingdom of Thailand

Attachment - 1: Major Points of Understanding
- 2: List of Equipment and Material

ATTACHMENT - 1

MAJOR POINTS OF UNDERSTANDING

1. The Thai side agreed in principle to the basic design proposed in the Draft Final Report. The items of proposed equipment and material are shown in Attachment - 2.

2. The Thai side understood the system of Japan's Grant Aid Program and reconfirmed the measures to be taken by the Thai side towards materialization of the Project as agreed upon in the "Minutes of Discussion" concluded and signed by the both parties on March 27, 1989.

3. The Thai side shall secure budget allocation , staff appointment and operation and maintenance/repair plans required for prompt improvement of Rangsit Canal by efficient use of the granted equipment.

4. Ten (10) copies of the Final Report on the Project will be prepared by JICA and presented to the Government of Thailand by the end of July, 1989.

ATTACHMENT - 2

LIST OF EQUIPMENT AND MATERIAL

Two (2) fleets of equipment of Rangsit Irrigation and Drainage Canal, each fleet of which consists of the followings.

Per-fleet equipment

1. Backhoe dredger boat	1 unit
2. Barges	3 units
3. Tugboat	1 unit
4. Cramshell	1 unit
5. Dump trucks	3 units

Material for re-loading platform

6. Steel sheet piles