

***Chapter 6 Present Usage and Facilities of
Coastal Channels of CDCII***

6 Present Usage and Facilities of Coastal Channels of CDCII

6.1 Commercial Ports Channels

Only five channels and ports in the study area, Songkhla, Khanom, Tha Sala, Pak Phanang and Pattani serve cargo vessels. A total of 5,908 cargo vessels called in 1999 (see Table 6.1-1 and Figure 6.1-1). Cargo vessels of more than 5,000 GRT called at Khanom, Tha Sala, Pak Phanang and Songkhla channels. Except for Songkhla channel, however, due to the limited channel depth, most of the vessels anchor outside the channel area, and the cargos are redelivered by barges in and out of the channels.

Songkhla port, the sole international container port on the Gulf of Thailand in the Southern Thailand Region, handles 78% of total cargo volume of the study channels and ports (see Table 6.1-2). Songkhla commercial port is managed and operated by Chaophaya Terminal International Co., Ltd. and detailed cargo handling data is shown in Table 6.1-3 and Figure 6.1-2.

6.2 Fishing Ports Channels

The 32 coastal channels in CDCII managing area serve fishing vessels. A total of 9,560 vessels were registered in the study coastal provinces (see Table 6.2-1 and Figure 6.2-1). Most of fishing vessels are in the range of 1-100 GRT and less than 3 m draft. Pattani channel, with about 1,700 fishing vessels including those with 5 m of maximum draft, is mostly accommodating fishing vessels among the study channels.

According to the statistical data of fishing vessels registered in the study coastal province, the numbers of fishing vessels marginally decreased during the period of 1985-1996 (see Table 6.2-2).

Table 6.1-1 Numbers of Calls of Cargo Vessels (1999)

			NRT		1-1000	1000-3000	3001-5000	5001-7000	7001-9000	9001-60000	Total
Sichon	Coastal Vessel	Inbound	382	0	0	0	0	0	1	383	
		Outbound	357	0	0	0	0	0	0	357	
	Sea-going Vessel	Inbound	34	8	13	1	17	11	84		
		Outbound	58	8	13	1	16	12	108		
	Sub-total			831	16	26	2	33	24	932	
Nakhon Si Thammarat	Coastal Vessel	Inbound	229	37	19	0	0	0	285		
		Outbound	231	36	19	0	0	0	286		
	Sea-going Vessel	Inbound	2	16	1	0	5	1	25		
		Outbound	2	14	0	0	7	0	23		
	Sub-total			831	103	39	0	12	1	619	
Songkhla	Coastal Vessel	Inbound	764	71	21	0	0	1	857		
		Outbound	732	80	21	0	0	0	833		
	Sea-going Vessel	Inbound	1,094	285	206	47	30	42	1,704		
		Outbound	593	106	108	16	30	19	872		
	Sub-total			3,183	542	356	63	60	62	4,266	
Pattani	Coastal Vessel	Inbound	4	0	0	0	0	0	4		
		Outbound	4	0	0	0	0	0	4		
	Sea-going Vessel	Inbound	50	0	0	0	0	0	50		
		Outbound	33	0	0	0	0	0	33		
	Sub-total			91	0	0	0	0	0	91	

Source: Custom House

Note: NRT: Net Registered Tonnage

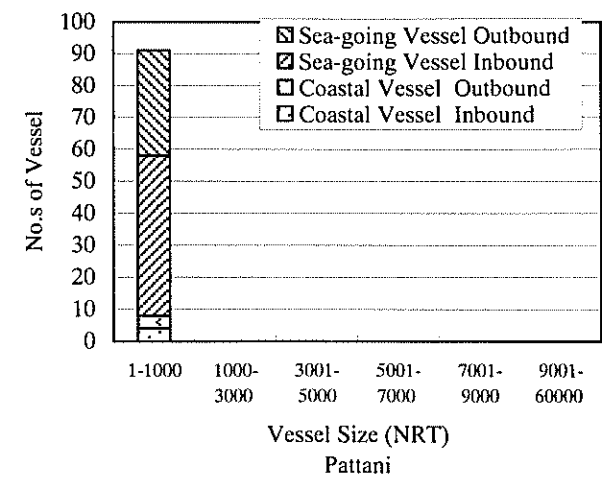
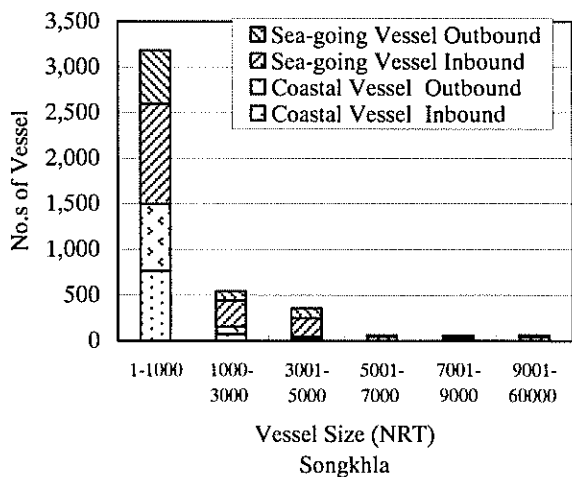
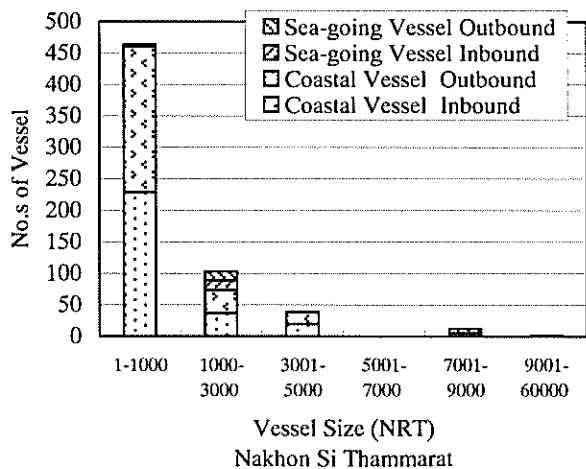
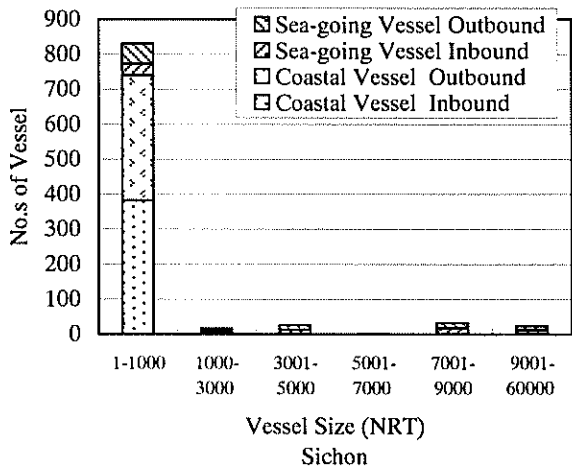


Figure 6.1-1 Vessel Size (NRT) Distribution of Cargo Vessels

Source: Custom House

Table 6.1-2 Cargo Handling Volume by Commercial Ports (1999)

Unit: ton

Cargo Commodity	Sichon				Nakhon Si Thammarat				Songkhla				Pattani				
	Coastal Vessel		Ocean-going Vessel		Coastal Vessel		Ocean-going Vessel		Coastal Vessel		Ocean-going Vessel		Coastal Vessel		Ocean-going Vessel		
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	
Gypsum/ Dolomite	0	0	0	792,630				140,692									
Crude Oil																	
Fuel	13,745	169,110	0	48,550	47,759	5,657	1,896		399,798	22,597	37,771	10,268	1,935,443	0			
Diesel					340,285	72,976			554,288	47,281	30,696	30,696	1,449,855				
Jet oil					43,089	9,040						2,014	0				
Gas									104,908	1,100	2,372	38,243					
Structure Materials									5,580	624	35,481	7,513					
Agriculture Products									254,700	0	0	111,656					
Small Fish									3,750	0	81,476	4,520			12		
Electrical Equipment											4,428	0					
Local Wood																	8
Others									0	4	15	0					
Miscellaneous	0	0	0	28,100					11,100	490	110,703	967,934					109
Sub-Total	13,745	169,110	0	869,280	431,133	87,673	1,896	140,692	1,334,124	72,096	315,224	4,515,164					109
Total	182,855		869,280		518,806		142,588		1,406,220		4,830,388			8			121
Grand-Total		1,052,135			661,394					6,236,608				8			129

Source: Custom House

Table 6.1-3 Cargo Traffic at Songkhla Port (1994-2000)

Unit: ton

Type	Commodity	1995	1996	1997	1998	1999	2000	2001 (Plan)
Import	Tuna Fish	73,872	86,572	98,062	106,750	115,650	112,328	120,000
	Equipment	22,298	25,109	24,757	27,678	13,037	27,821	21,700
	Animal Feed	34,630	20,384	1,388	20,937	20,532	-	-
	Other	59,257	60,079	43,139	35,576	34,068	115,182	89,000
	Total Import Cargo	190,057	192,144	167,346	190,941	183,287	255,331	230,700
Export	Rubber & Latex	277,676	470,267	389,514	376,635	334,946	435,150	438,500
	Wood & Furniture	17,898	39,215	60,382	50,968	160,262	190,065	210,100
	Frozen Food	83,318	79,572	92,718	106,592	119,063	101,832	109,600
	Canned Food	66,550	96,048	112,474	140,336	148,008	133,552	139,700
	Other	60,853	45,154	46,502	53,716	90,481	68,688	75,900
	Total Export Cargo	506,295	730,256	701,590	728,247	852,760	929,287	973,800
Domestic	Import Domestic	17,891	17,692	-	-	-	-	-
	Export Domestic	-	-	-	-	-	806	-
	Total Domestic Cargo	17,891	17,692	0	0	0	806	0
Grand Total		696,352	922,400	868,936	919,188	1,036,047	1,184,618	1,204,500
Growth Rate (%)		16%	32%	-6%	6%	13%	14%	2%

Total Container (TEU)	50,059	58,336	70,992	79,187	95,876	109,769	117,914
Growth Rate (%)	28%	17%	22%	12%	21%	14%	7%

Type of Vessel	1995	1996	1997	1998	1999	2000	2001 (Plan)
General Vessel	107	148	87	81	59	83	68
Container Vessel	151	183	258	375	467	398	416
Reefer Vessel	49	64	46	57	65	73	70
Bulk Carrier	0	0	0	0	0	0	0
Passenger Vessel	2	3	11	16	0	1	0
Other Vessel	11	9	7	2	1	4	0
Supply Boat	121	111	67	24	12	10	12
Barge, Lighter	21	3	13	6	4	0	0
Total	462	521	489	561	608	569	566

Source: Chaophaya Terminal International Co., Ltd.

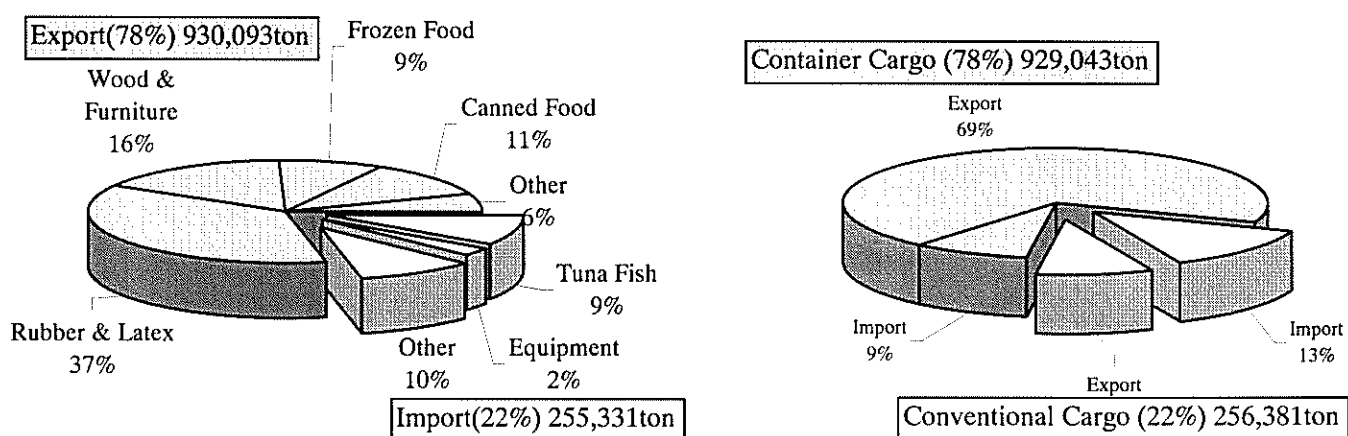


Figure 6.1-2 Cargo Volume by Commodities and Container & Conventional Cargo Volume (2000)

Source: Chaophaya Terminal International Co., Ltd.

Table 6.2-1 Fishing Vessel Registered in Study Coastal Provinces

Province	District	Draft<1m	1m≤D<2m	2m≤D<3m	3m≤D<4m	4m≤D<5m	5m≤D<6m	Total Vessels
Nakhon Si Thammarat	Muang	511	511	58	1	1	1	1,083
	Khanom	11	170	34				215
	Hua Sai	63	182	18				263
	Tha Sala	248	448	28				724
	Pak Phanang	39	661	108	25	1		834
	Sichon	59	564	112				735
	Thung Song	3	4					7
	Cha-uat		6					6
	Ron Phibun	3	9	2				14
	Chian Yai	1	12	1				14
	Chawang		1					1
	Lan Saka	1						1
	Bang Khan		2					2
	Phrom Khiri	1	1	1				3
Total	940	2,571	362	26	2	1	3,902	
Songkhla	Muang	182	942	306	32			1,462
	Ranot	307	288	18				613
	Sathing Phra	70	74	5				149
	Hat Yai	6	85	19	5	1		116
	Singhanakhon	13	98	8	1			120
	Chana	155	231	6	1			393
	Rattaphum	1	2	1				4
	Thepha	93	153	1				247
	Sadao	1	2	1				4
	Khuan Niang		1					1
	Krasae Sin	2	5					7
	Sena	1						1
	Total	831	1,881	365	39	1	0	3,117
Pattani	Muang	356	784	398	159	5	1	1,703
	Nong Chik	19	10	1				30
	Sai Buri	134	97	12	1			244
	Yaring	10	10	1				21
	Yarang	1	2					3
	Khok Pho	3	3					6
	Panare	9	7					16
	Mai Kaen	2						2
	Mayo	1	1					2
Total	535	914	412	160	5	1	2,027	
Narathiwat	Muang	155	106	2				263
	Tak Bai	135	97	4	3	2		241
	Su-ngai Kolok	1	2					3
	Su-ngai Padi	1	3					4
	Yi-ngo	1						1
	Ra-ngae	1	1					2
	Total	294	209	6	3	2	0	514
Grand Total	2,600	5,575	1,145	228	10	2	9,560	

Source: HD

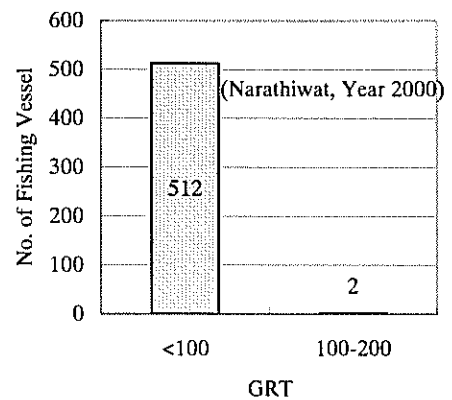
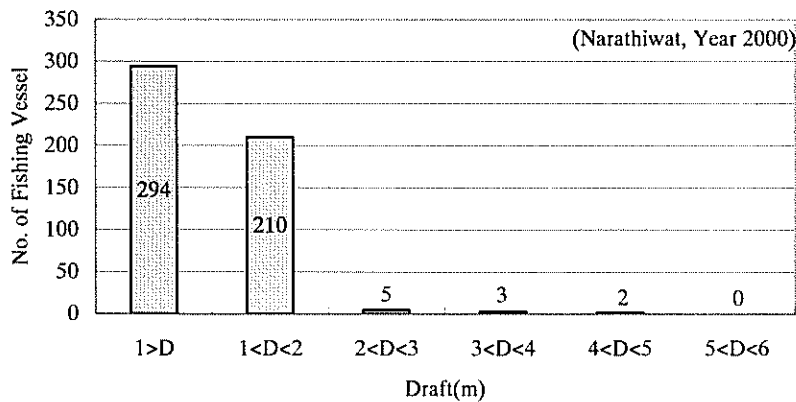
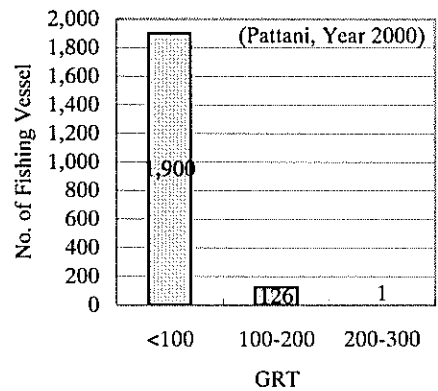
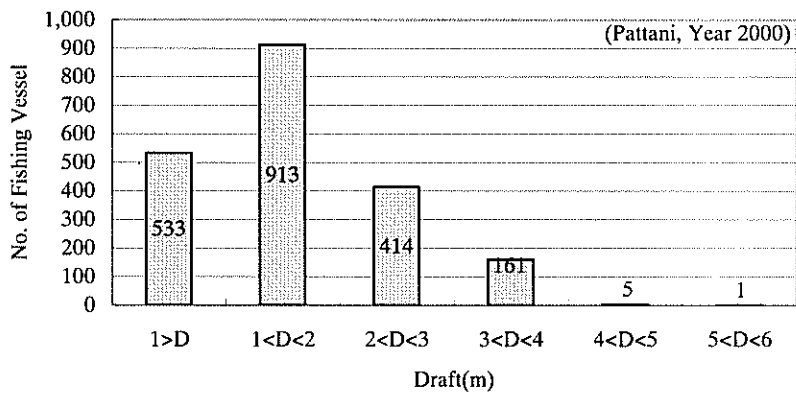
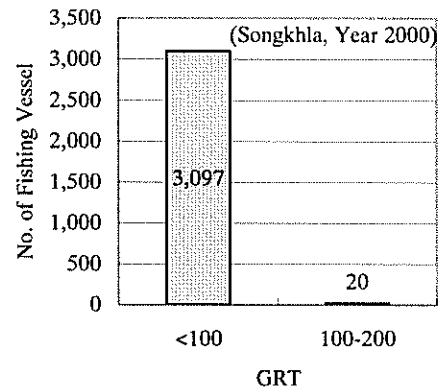
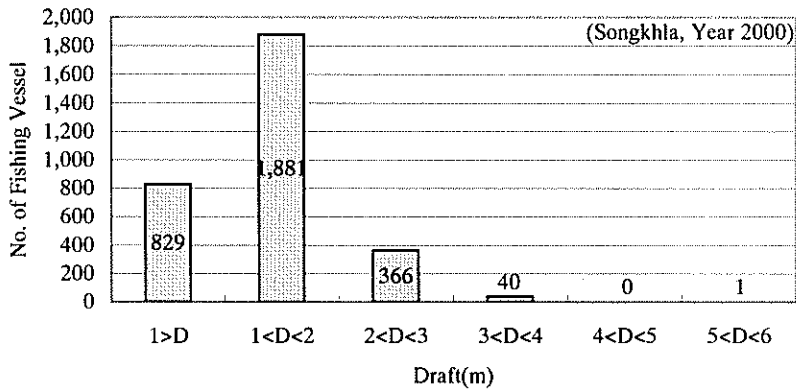
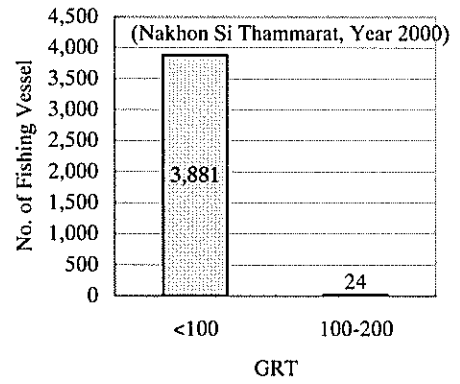
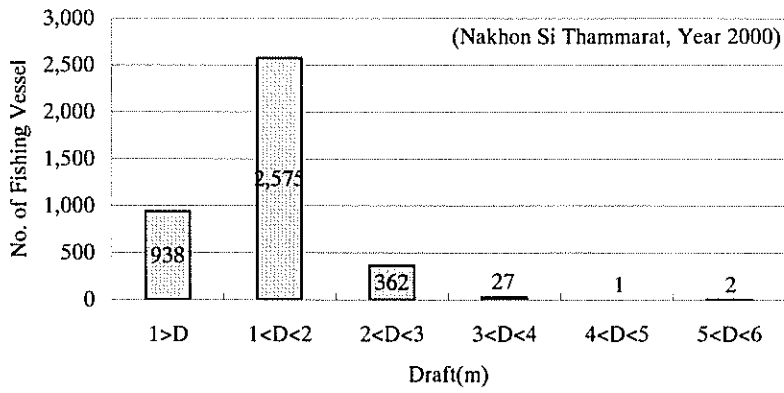


Figure 6.2-1 Distribution of Fishing Vessel Draft and GRT by Study Provinces

Source: HD

Table 6.2-2 Number of Fishing Boat Registered by Province 1989-1998

Province/year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	20,979	21,547	18,170	16,820	18,146	17,657	17,281	17,950	18,182	18,439
Trat	259	877	957	1,059	1,165	1,253	1,110	1,111	1,122	1,264
Chanthaburi	450	475	396	262	348	430	338	356	387	313
Rayong	901	975	900	821	841	834	880	880	721	777
Chonburi	843	1,067	922	1,067	861	863	810	810	825	737
Chachoengsao	286	230	162	190	144	193	192	178	223	232
Samut Prakan	1,382	1,494	1,433	1,401	1,243	1,197	1,098	1,329	1,253	1,198
Samut Sakhon	1,252	1,246	1,206	1,041	927	973	850	850	1,159	1,209
Samut Songkhram	1,301	1,252	896	830	787	866	800	1,087	968	1,088
Phetchaburi	931	1,145	946	815	1,249	1,122	1,124	1,125	816	1,042
Prachuap Khiri Khan	797	447	973	770	837	768	627	571	853	727
Chumphon	944	1,164	996	445	1,035	1,011	874	929	946	1,028
Surat Thani	1,488	1,396	1,117	1,066	1,189	1,202	1,150	1,152	1,187	1,084
Nakhon Si Thammarat	2,480	2,543	1,478	1,420	1,927	1,226	1,310	1,404	1,161	1,433
Songkhla	2,033	1,779	1,668	1,595	1,494	1,300	1,301	1,301	1,366	1,102
Pattani	991	1,128	959	918	757	824	808	808	937	814
Narathiwat	192	178	159	119	99	99	83	141	116	141
Ranong	669	674	389	455	350	294	349	398	245	538
Phangnga	833	564	478	282	468	241	447	447	1,170	596
Phuket	484	440	383	393	507	431	425	392	380	480
Krabi	258	238	93	231	185	380	452	452	331	464
Trang	793	761	698	657	694	811	830	830	619	695
Satun	1,233	1,289	806	813	801	1,133	1,252	1,252	1,255	1,302
Bangkok Metropolis	164	139	139	151	134	139	140	114	106	139
Others	15	46	16	19	104	67	31	33	36	36

Source : Thai fishing vessels statistics 1998, Department of Fisheries, Ministry of Agriculture and Cooperatives

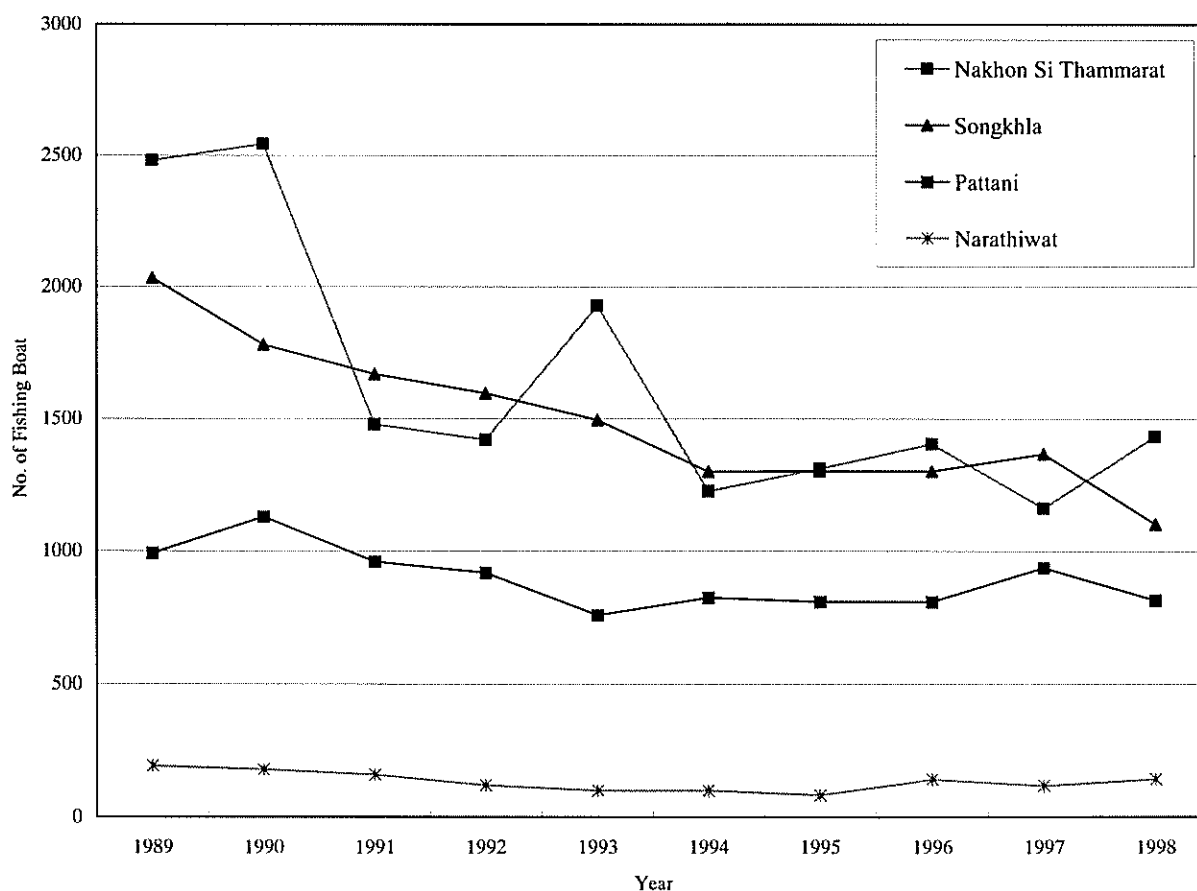


Figure 6.2-3 Number of Fishing Boats Registered

Source : Thai fishing vessels statistics 1998, Department of Fisheries, Ministry of Agriculture and Cooperatives

6.3 Channel Structures

The Harbour Department has made a great effort to maintain the channels by providing training jetties to prevent the soil sedimentation caused by sand drift. Along 14 coastal channels in the study area, training jetties have been constructed. Nine channels have groin or headland for prevention of shoreline erosion. (See Table 6.3-1 and Figures 6.3-1 to 6.3-14)

The training jetties of 13 coastal channels are of a rubble-mound type, and only one Thehpa channel has jetty of concrete sheet pile and beam structure (see Figures 6.3-15 and 6.3-16).

Table 6.3-1 Structures in Study Coastal Channels

Name	Purpose	Type, Size and Direction of Jetty	Shoreline protection	EIRR (%/year)
Sichon Sichon District Nakhon Si Thammarat	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	Single Jetty (rubble-mound) Length = 700 m Height = 7.4 m Direction = N45'E	N/A	8.4
Tha Sala Tha Sala District Nakhon Si Thammarat	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length (NE) = 360 m Length (SW) = 500 m Height = 6 m	4 Detached Breakwaters Sea wall 400 m	6.56
NamSap-Ko Fai Pakphanang Dist. Nakhon Si Thammarat	-To protect shoreline	N/A	19 T type-Groins (rubble-mound) Head length = 50 m Body length = 40-50 m 4 groins, length = 35-45 m Sea wall, length = 300 m	9.73
Na Thap Jana District Songkhla	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length (NE)= 200 m Length (SW)= 400 m Height (NE) = 5 m Height (SW)= 6 m	3 Groins Length = 150 m Spacing = 300-400 m	20.72
Sakom Jana District Songkhla	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length = 650 m Height = 7 m	4 Detached Breakwaters Sea wall 400 m	1.24
Thepha(Praput) Thepha District Songkhla	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (Sheet pile) Length (NE) = 850 m Length (SW) = 550 m Height = 7 m	4 Detached Breakwaters Sea wall 600 m	4.82
Laem Ta Chi Maung Patthani	-To prevent the sediment on a river mouth	1 Jetty (rubble-mound) Length = 320 m Height = 8 m Direction = N32'W	N/A	9.88
Panare Panare District Patthani	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length = 350 m Height = 6.14-6.34 m Direction = N44.45'E	4 Detached Breakwaters Length = 50 m Spacing = 200 m	2.84
Bang Maruat Panare District Patthani	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length (NE) = 330 m Length (SW) = 440 m Height (NE) = 6 m Height (SW) = 4.4 m	3 Detached Breakwaters Length = 50 m	5.74
Sai Buri Saiburi District Patthani	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length (NE) = 150 m Length (SW) = 800 m Height (NE) = 7.3 m Height (SW) = 7.8 m Direction = N30'W	3 Detached Breakwaters Sea wall 1000 m	27.67
Narathiwat (Bangnara) Maung Narathiwat	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length (NE)= 350 m Length (SW)= 700 m Height (NE)= 5 m Lower (SW)= 6 m direction = N18.5'E	4 Detached Breakwaters Spacing = 150 m Direction = N65'W	16.31
Tak Bai Takbai District Narathiwat	-To prevent the sediment on a river mouth -To protect fishery from wind and wave	2 Jetties (rubble-mound) Length (NE)= 450 m Length (SW)= 150 m Height (NE)= 6.5 m Height (SW) = 5 m	Sea wall 9 groins Length = 70 m Spacing = 400 m	20.67

Source: HD

Note:  : Shore Protection Structure Provided

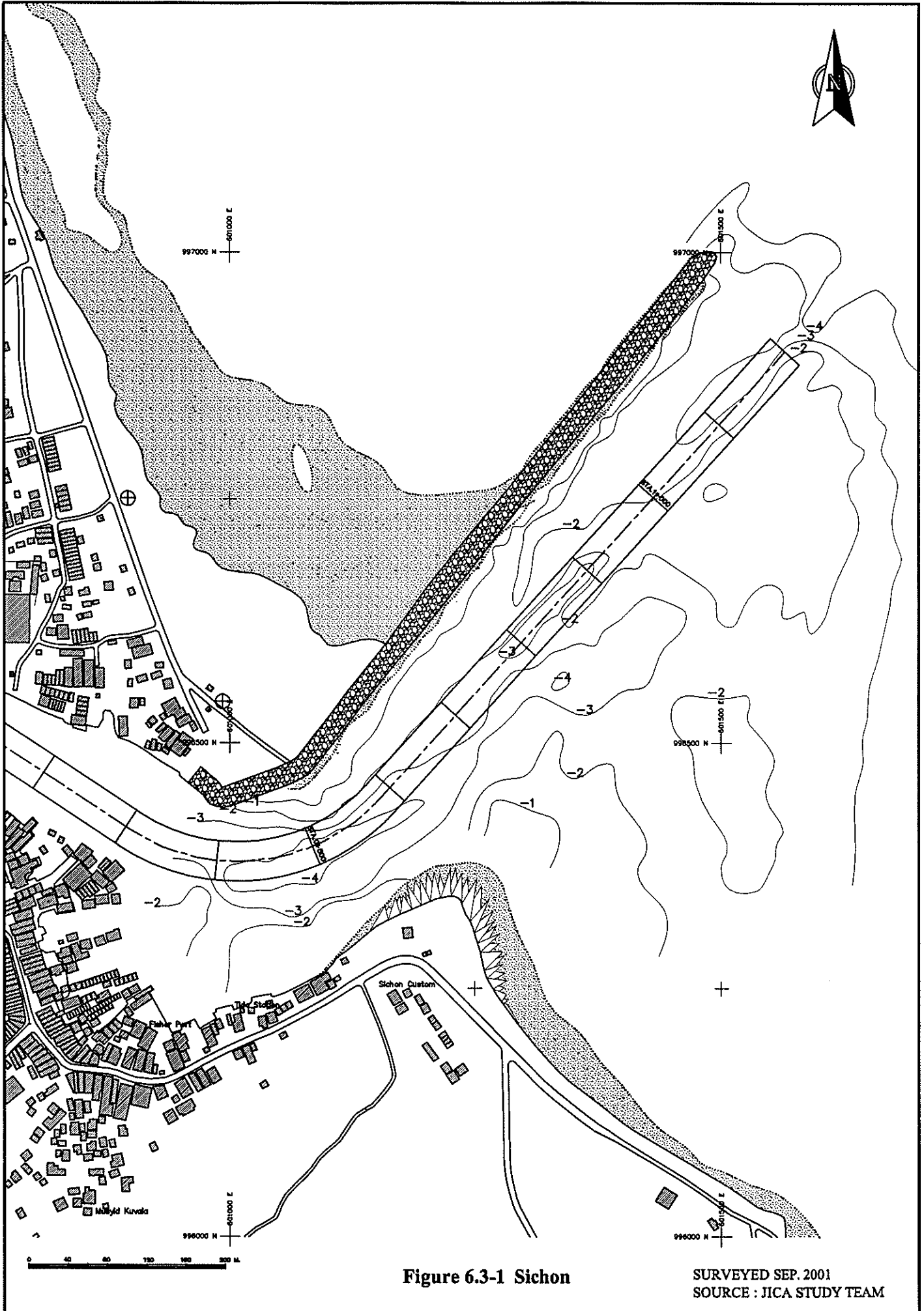


Figure 6.3-1 Sichon

SURVEYED SEP. 2001
SOURCE : JICA STUDY TEAM

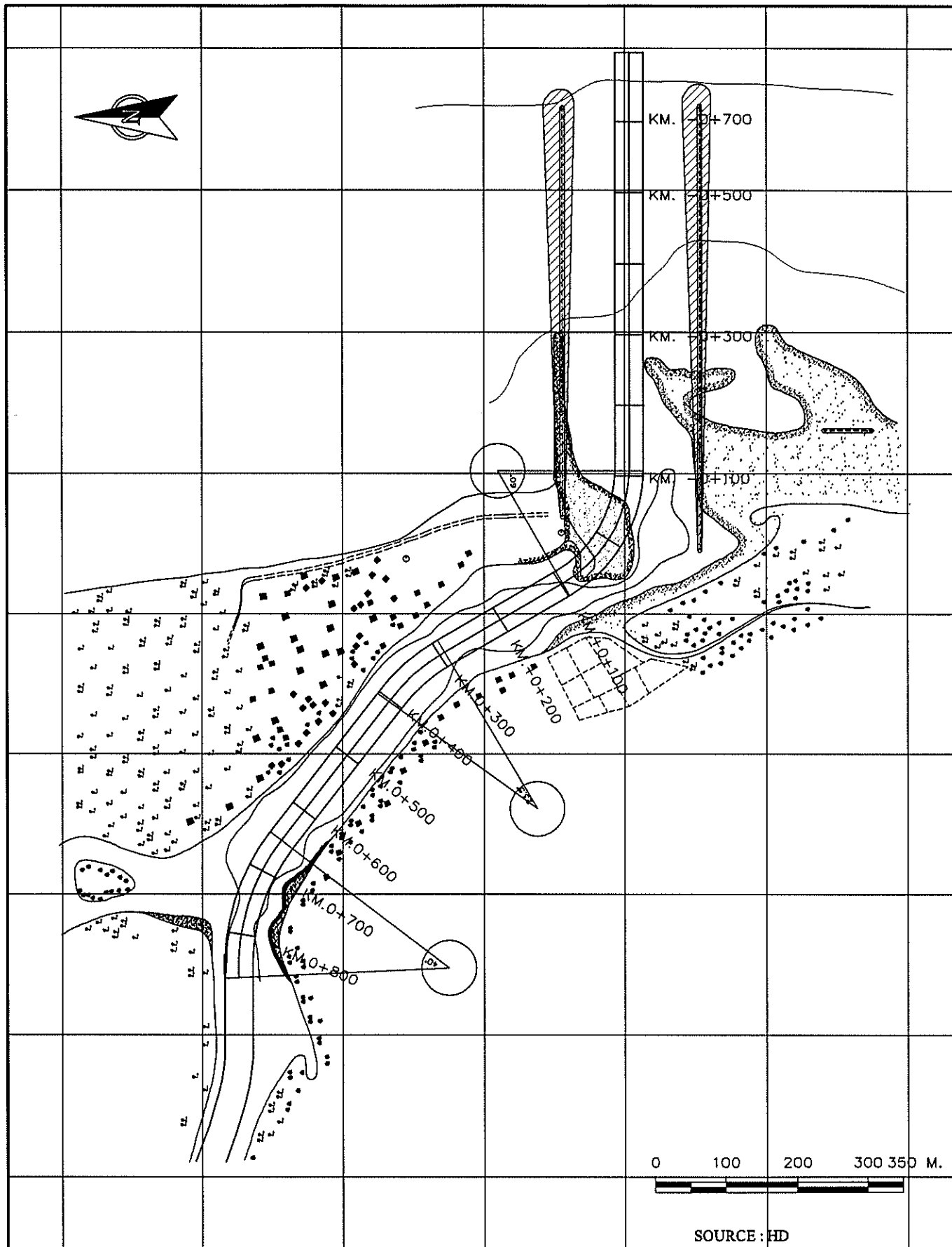


Figure 6.3-2 Tha Sala

DISTRICT THASALA PROVINCE NAKHON SRI THAMMARAT

- LENGTH = 1.50 km.
- WIDTH = 40.00 m.
- DEPTH = 2.00 m.
- LLW = 0.90 m.
- SCALE = 1:7,500

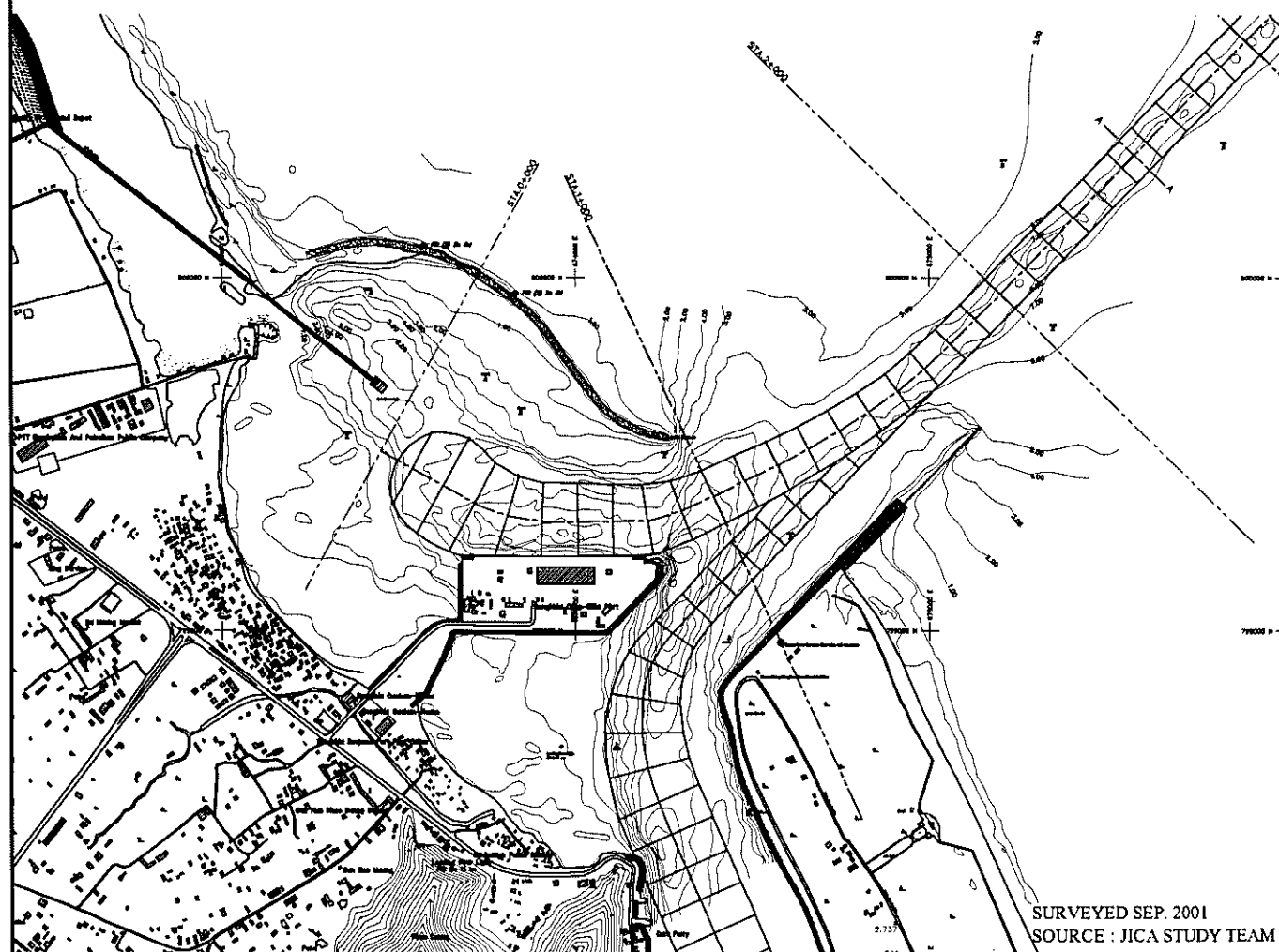
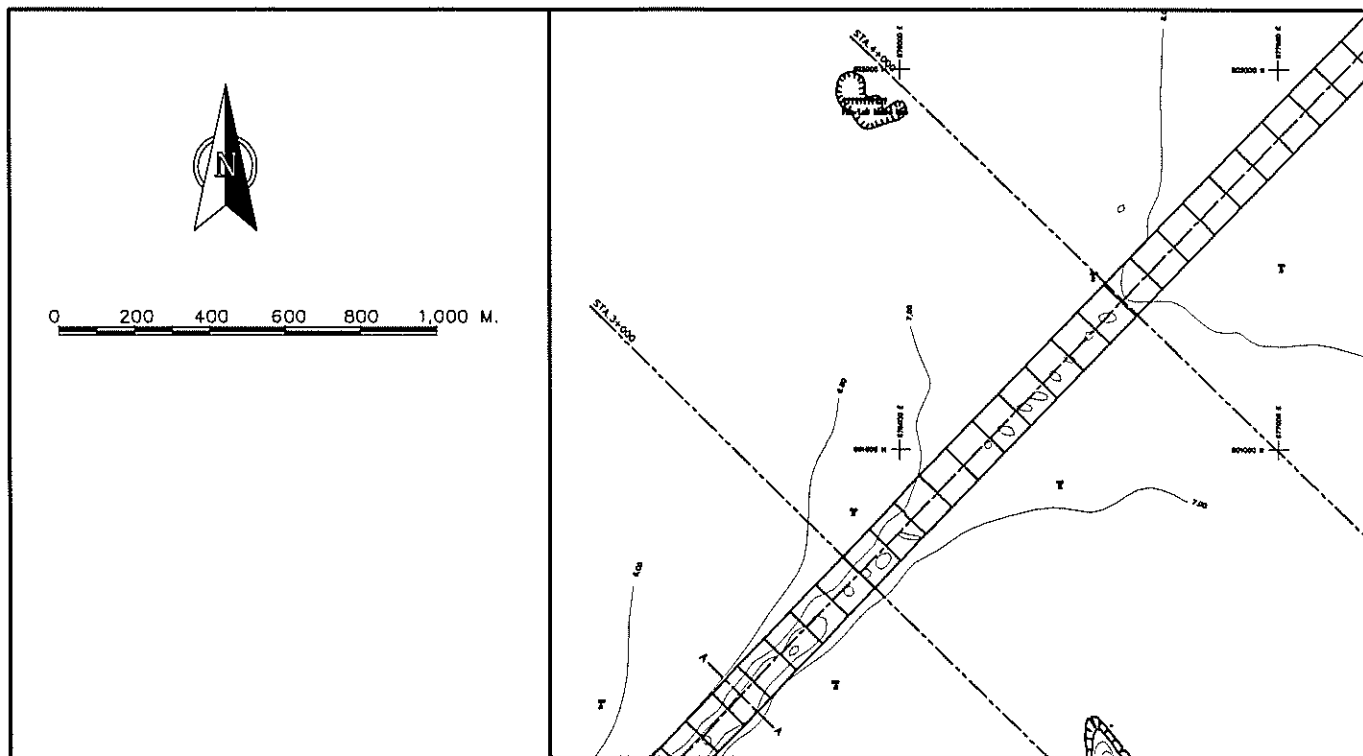


Figure 6.3-3 Songkhla

DISTRICT SINGHA NAKHON PROVINCE SONGKHALA

CHANNEL	OUTER	INNER		
● LENGTH	6+000	5+000	● SIDE SLOPE	1:6
● WIDTH	120.00	250.0	● LLW.	= 0.96 m.
● DEPTH	5.00	9.00	● SCALE	= 1:20,000

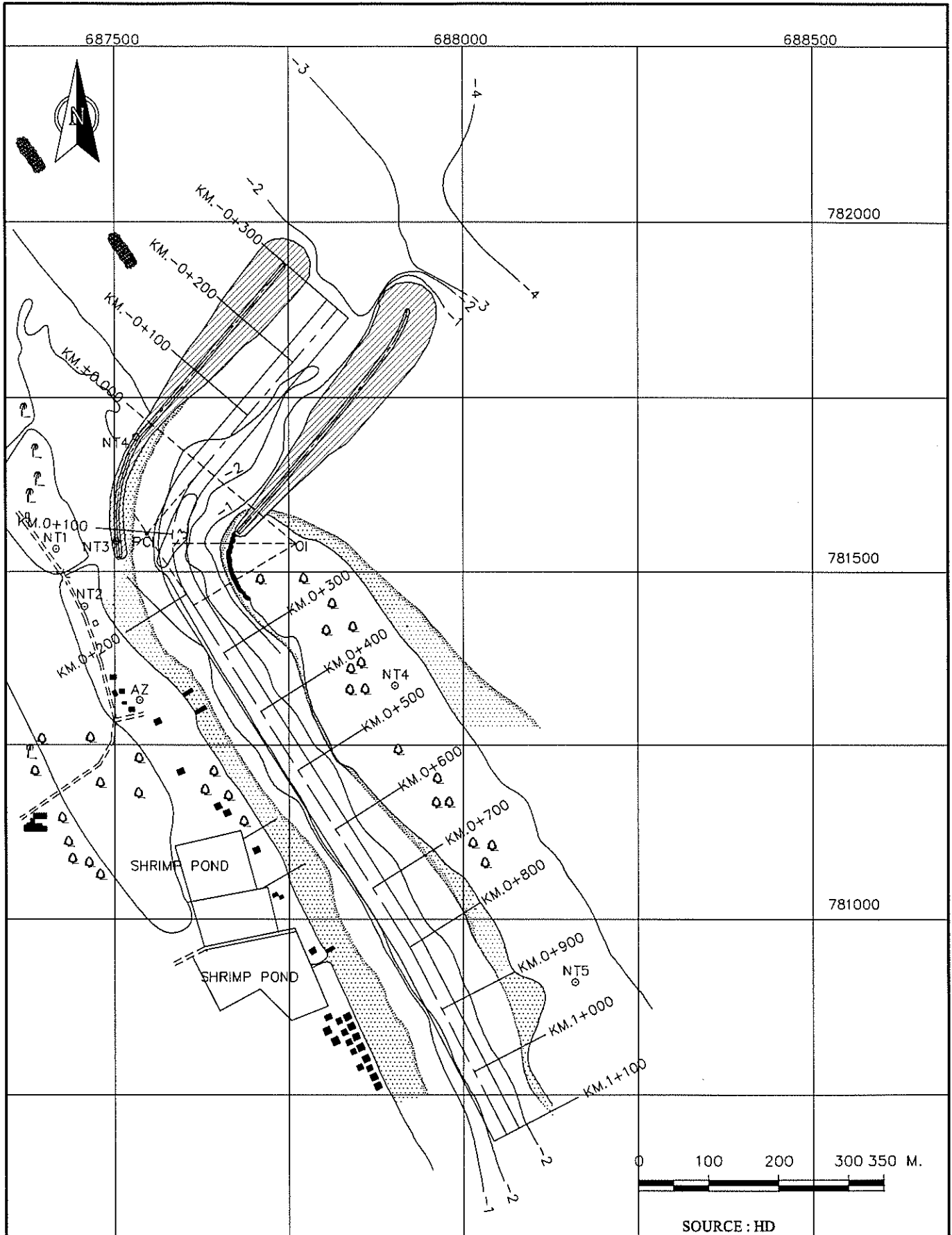


Figure 6.3-4 Na Thap DISTRICT CHANA PROVINCE SONGKHLA	● LENGTH = 1.40 km.	● LLW. = 0.97 m.
	● WIDTH = 40.00 m.	● SCALE = 1:7,500
● DEPTH = 2.00 m.		

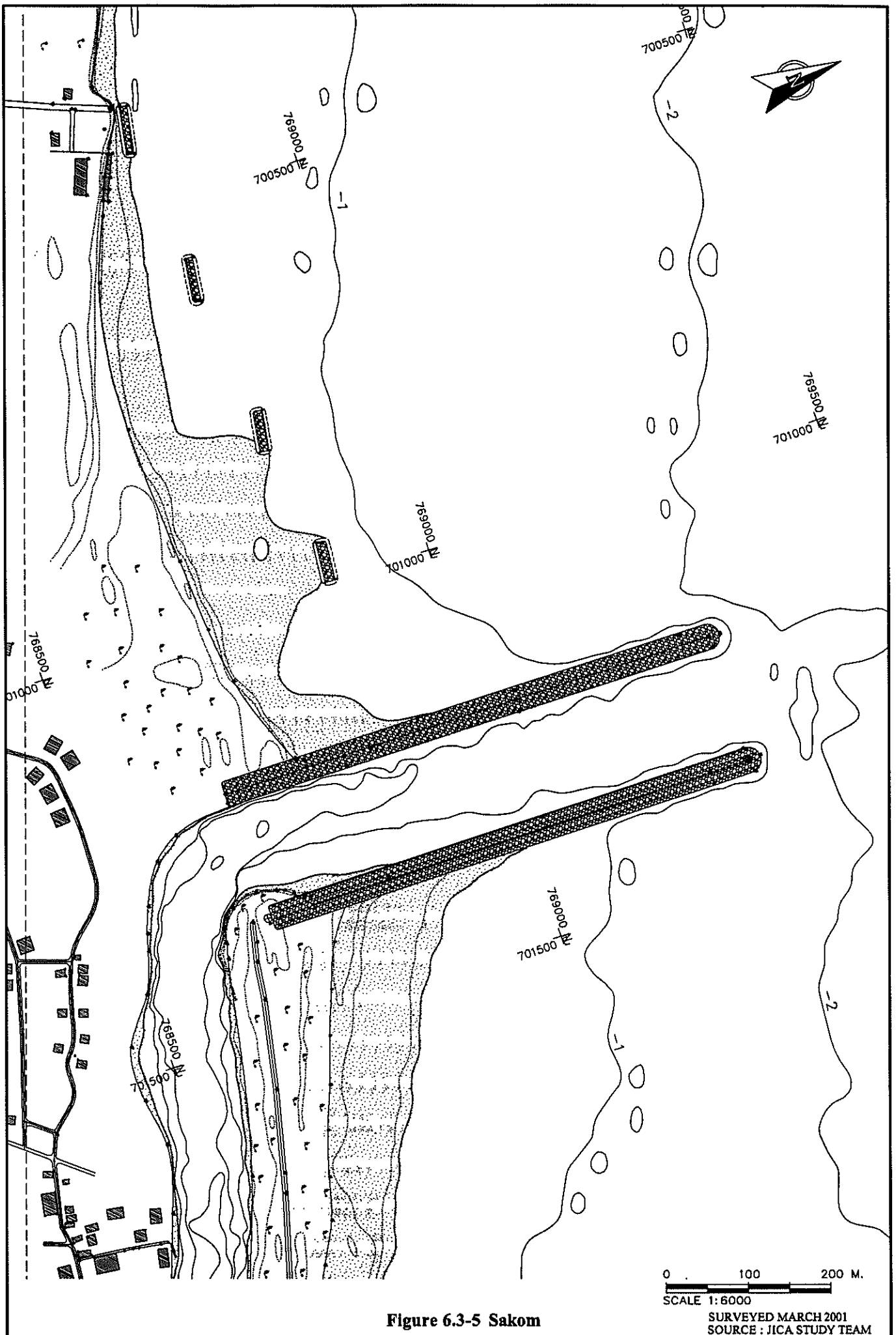


Figure 6.3-5 Sakom

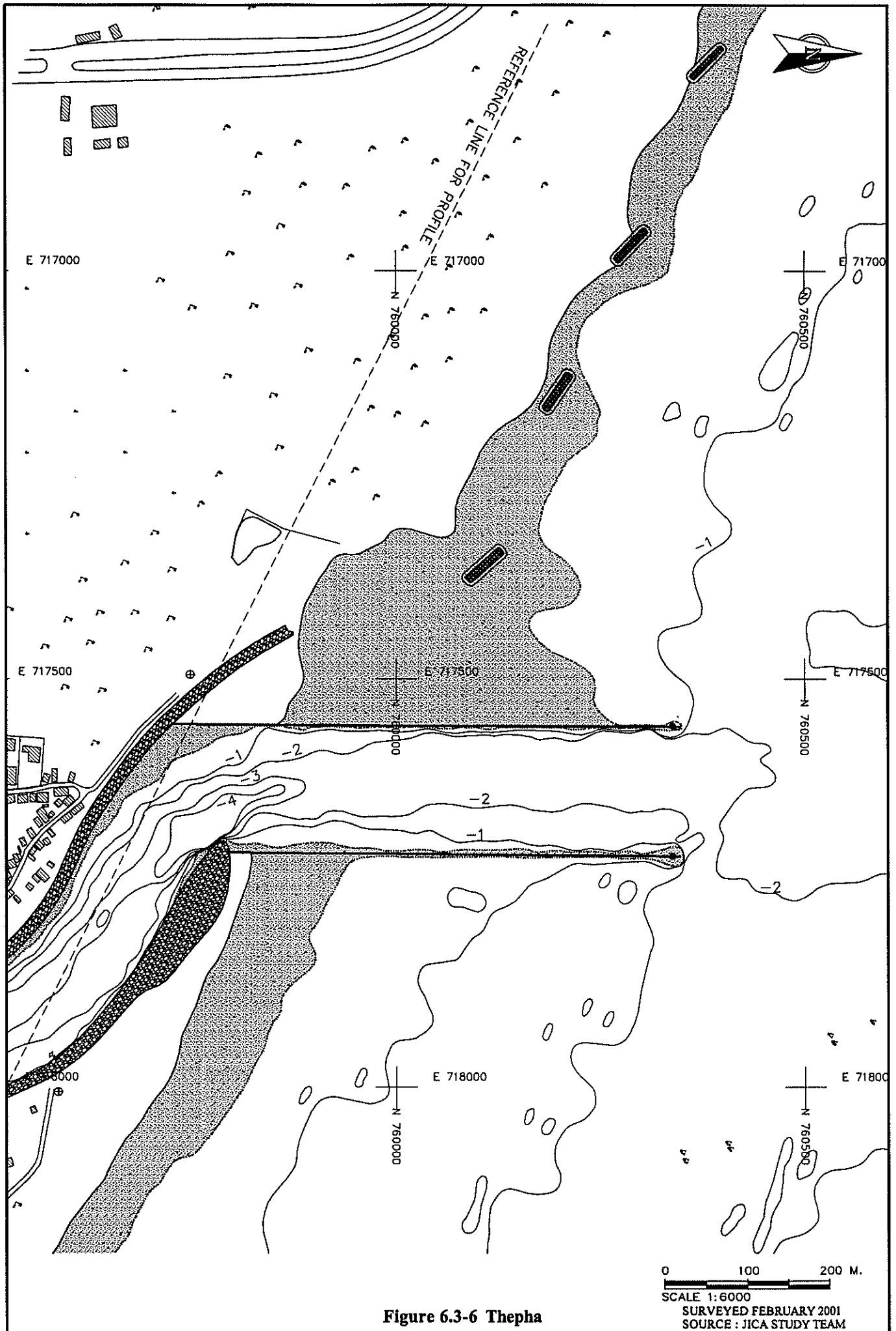


Figure 6.3-6 Thepha

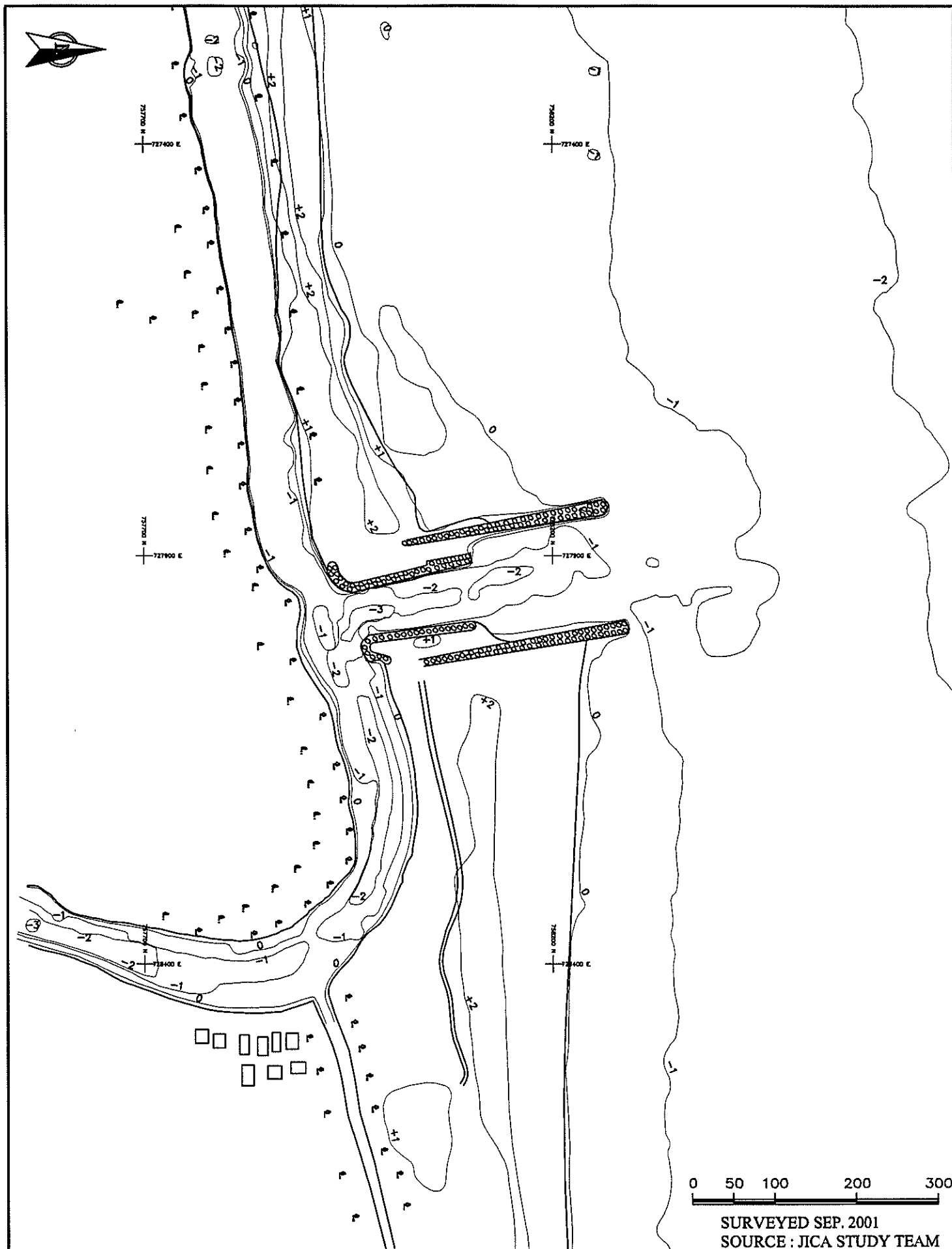
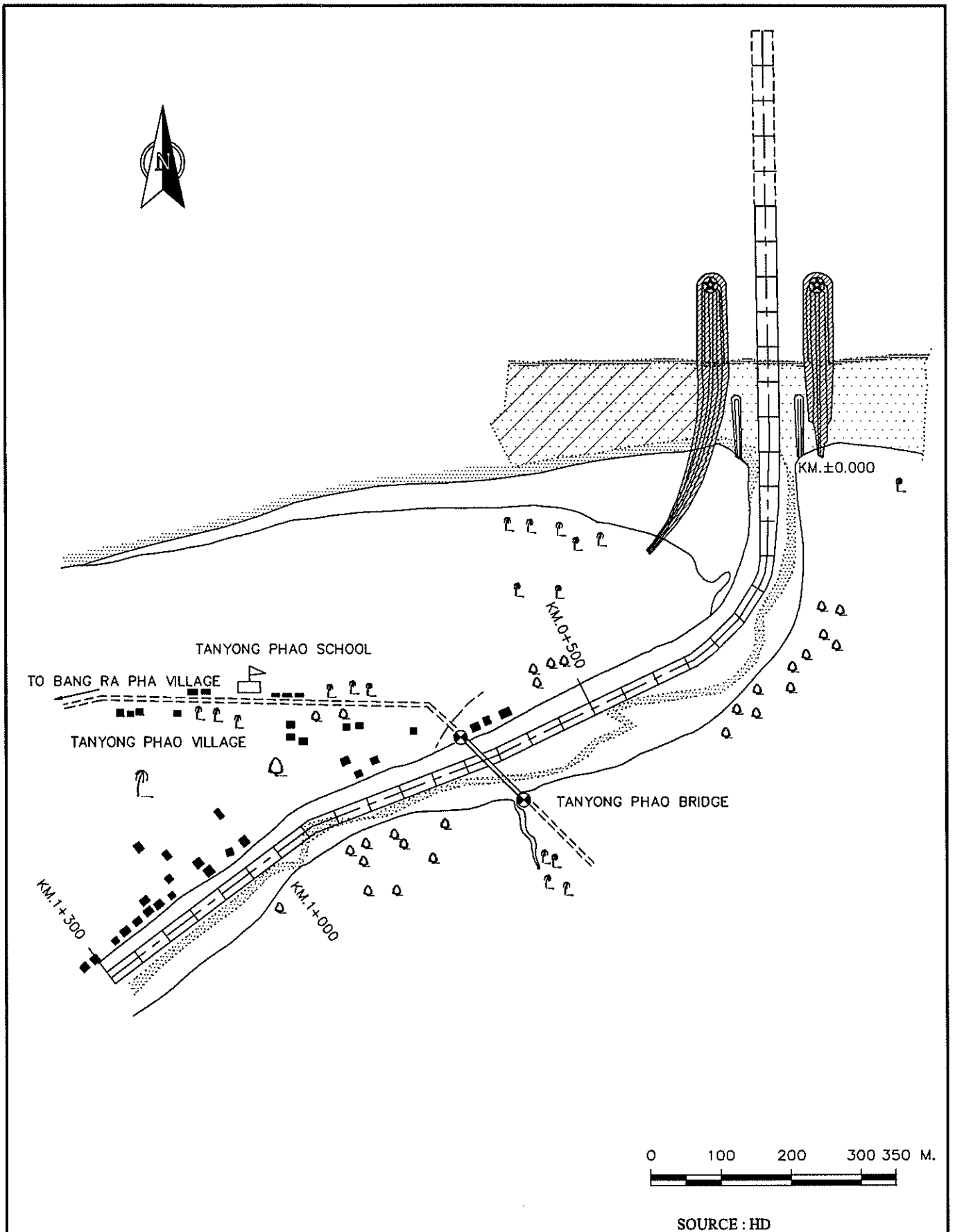


Figure 6.3-7 Bang Ra Pha

DISTRICT NONG CHIK, PROVINCE PATTANI

● LENGTH	= 1.15	Km.	● LLW.	= 0.84	m.
● WIDTH	= 30.00	m.	● SCALE	= 1:6,000	
● DEPTH	= 1.20	m.			



SOURCE : HD

Figure 6.3-8 Tanyong Pao

DISTRICT NONG CHIK PROVINCE PATTANI

- LENGTH = 1.65 Km.
- WIDTH = 20.00 m.
- DEPTH = 1.60 m.
- LLW. = -0.84 m.
- SCALE = 1:7,500

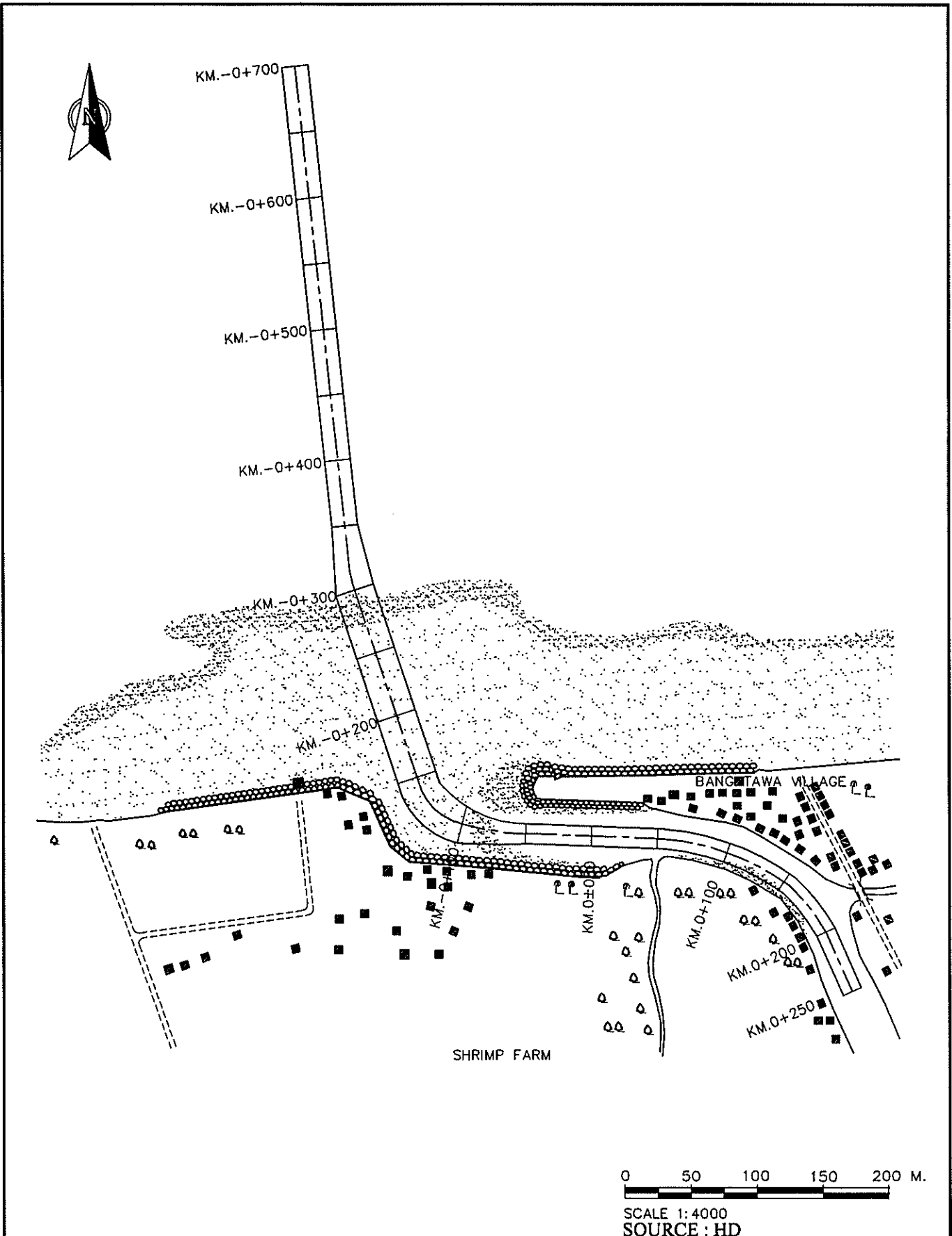
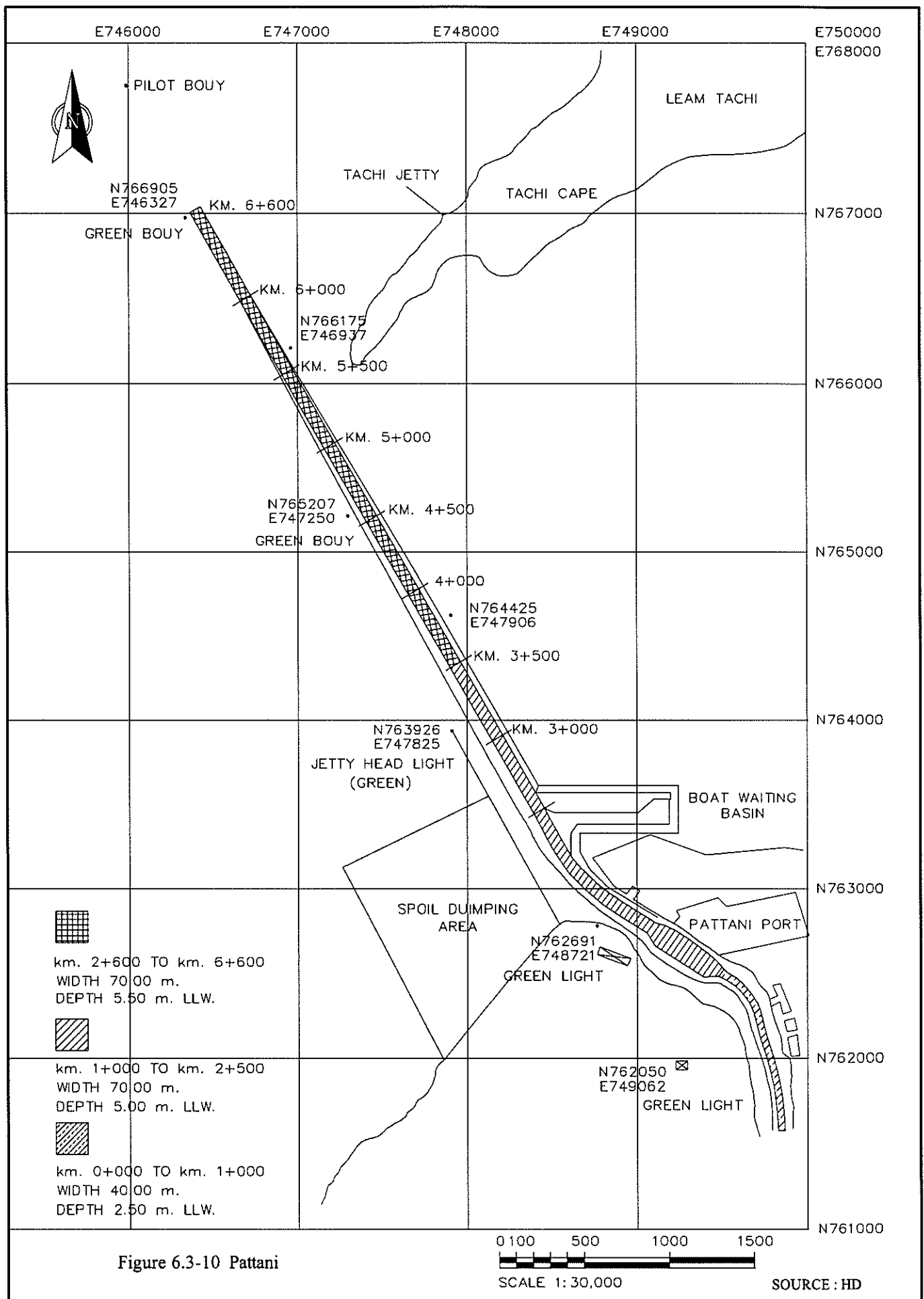


Figure 6.3-9 Bang Ta Wa

DISTRUICT NONGCHIK PROVINCE PATTANI

- LENGTH = 0.95 Km.
- WIDTH = 15, 20, 30.00 m.
- DEPTH = 1.20 m.
- LLW. = 0.84 m.
- SCALE = 1:4,000



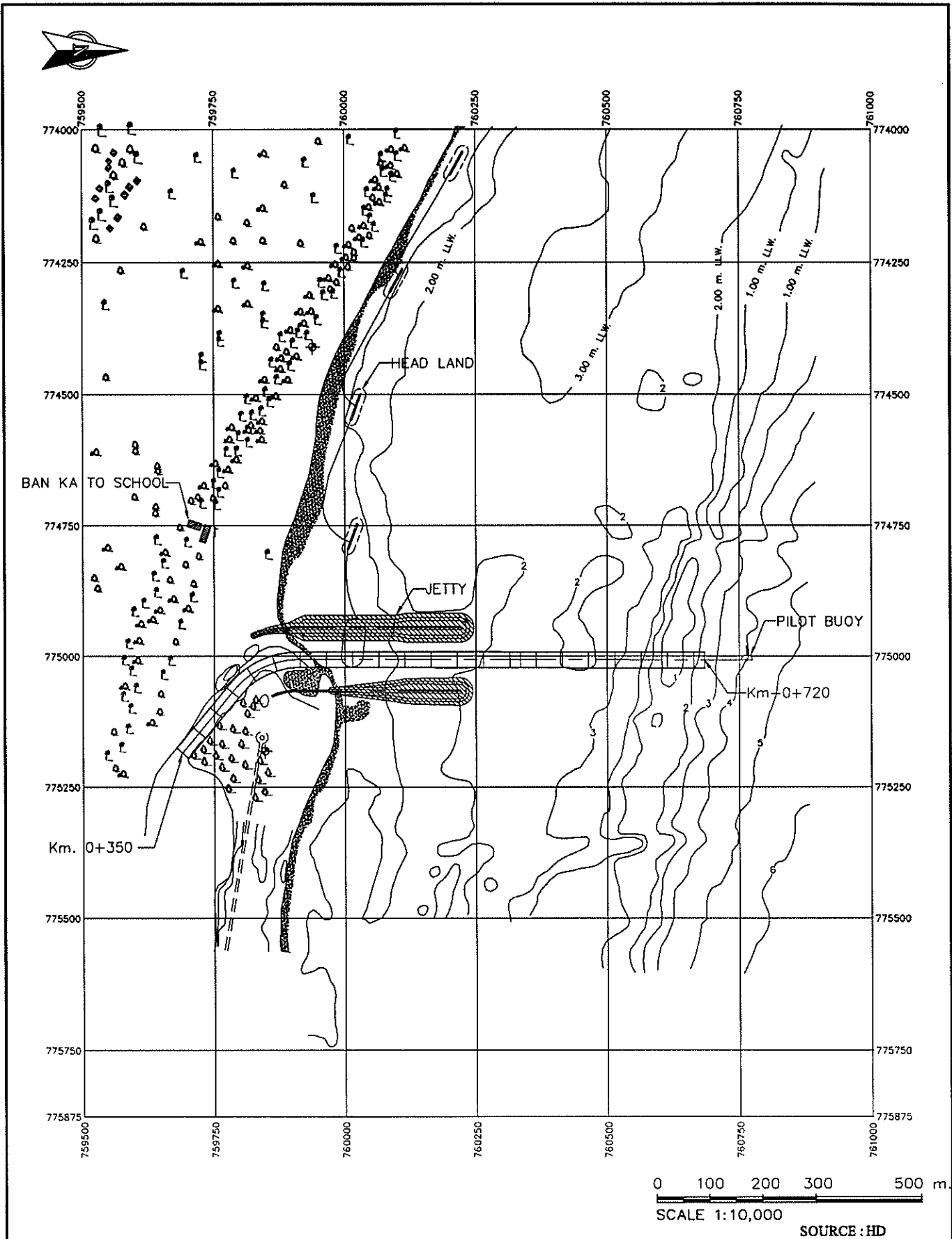


Figure 6.3-11 Panare

● LENGTH = 1.05 Km.
 ● WIDTH = 30.00 m.

DISTRICT PANARE PROVINCE PATTANI

● SCALE = 1:10,000

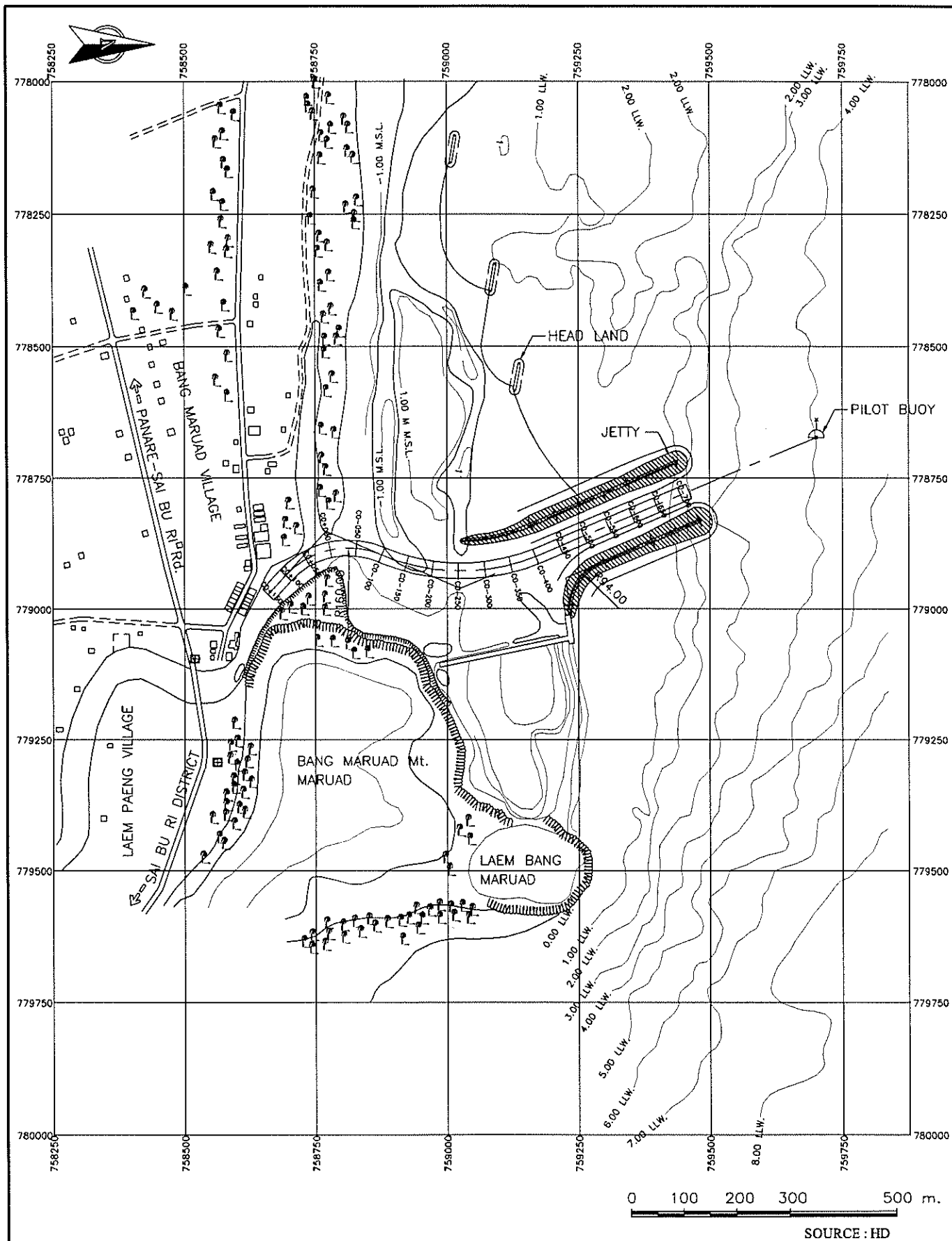


Figure 6.3-12 Bang Maruat

DISTRICT PANARE, PROVINCE PATTANI

- LENGTH = 0.850 Km.
- WIDTH = 30.00 m.

● SCALE = 1:10,000

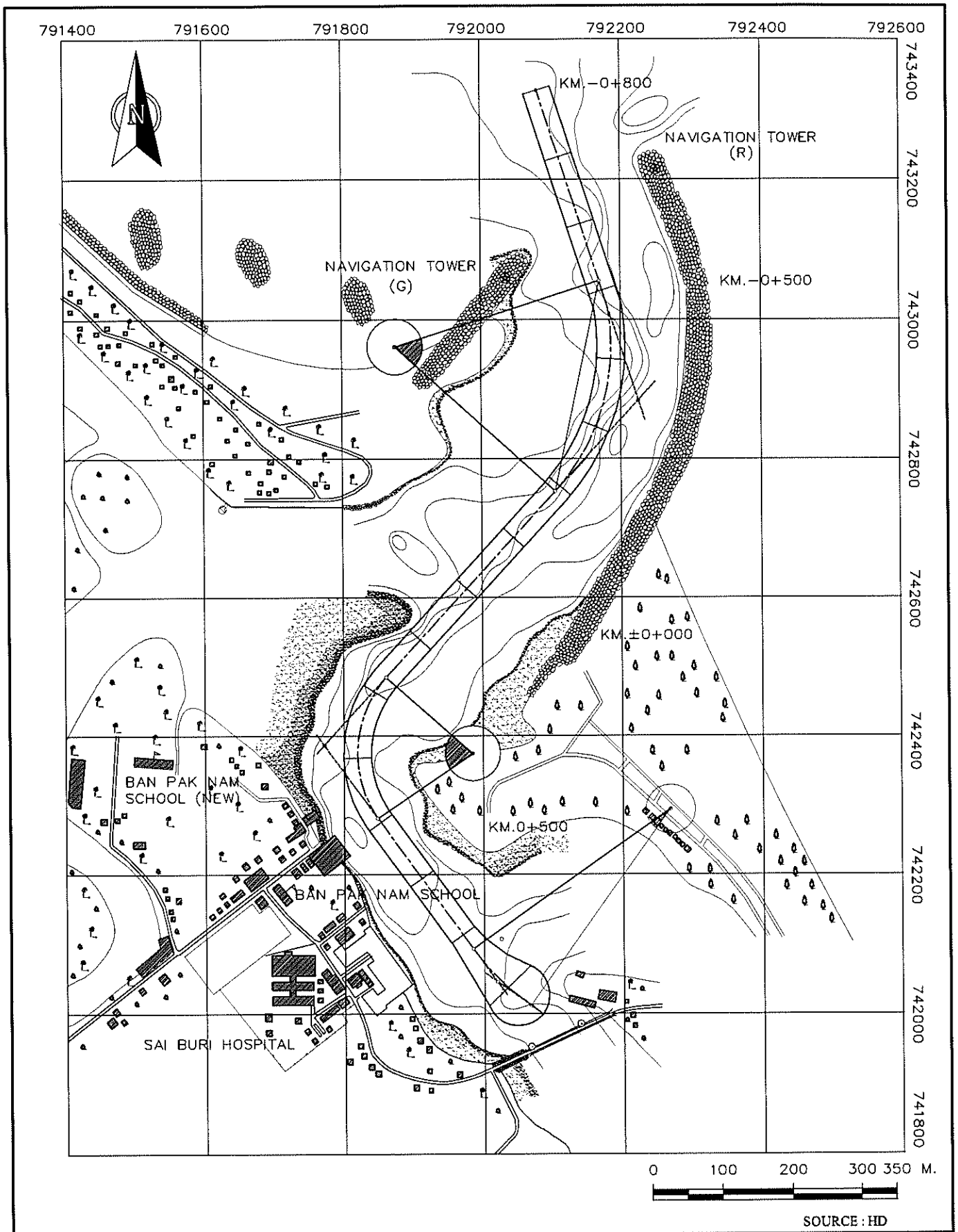


Figure 6.3-13 Sai Buri

DISTRICT SAI BURI PROVINCE PATTANI

- LENGTH = 1.50 Km.
- WIDTH = 40, 60, 80 m.
- DEPTH = 2.00 m.
- LLW. = 0.78 m.
- SCALE = 1:7,500

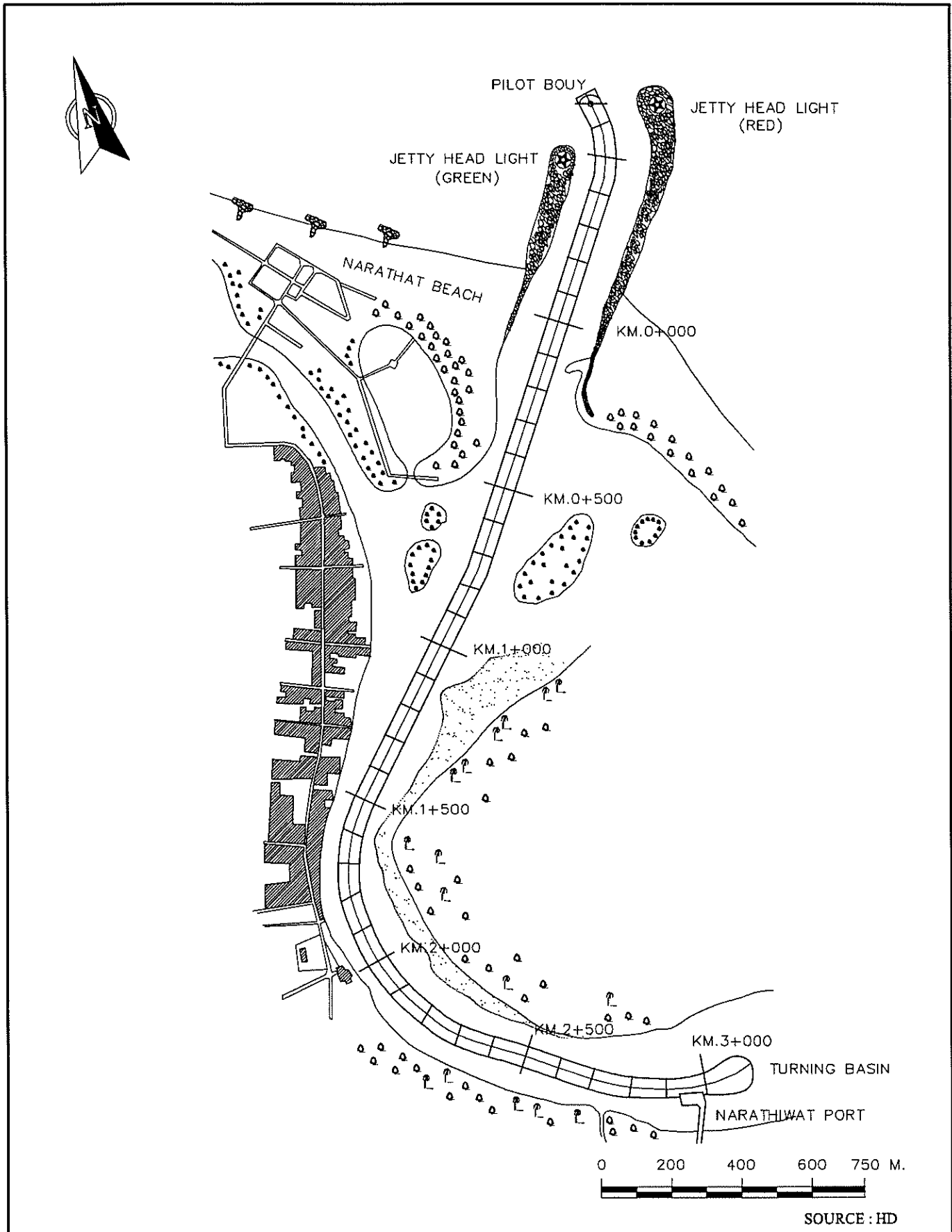
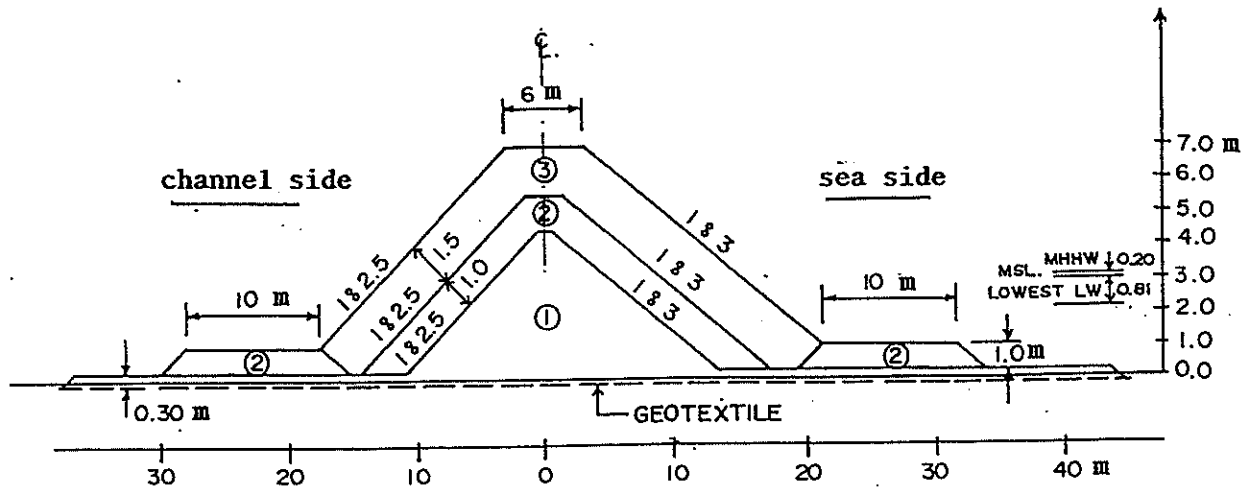


Figure 6.3-14 Narathiwat

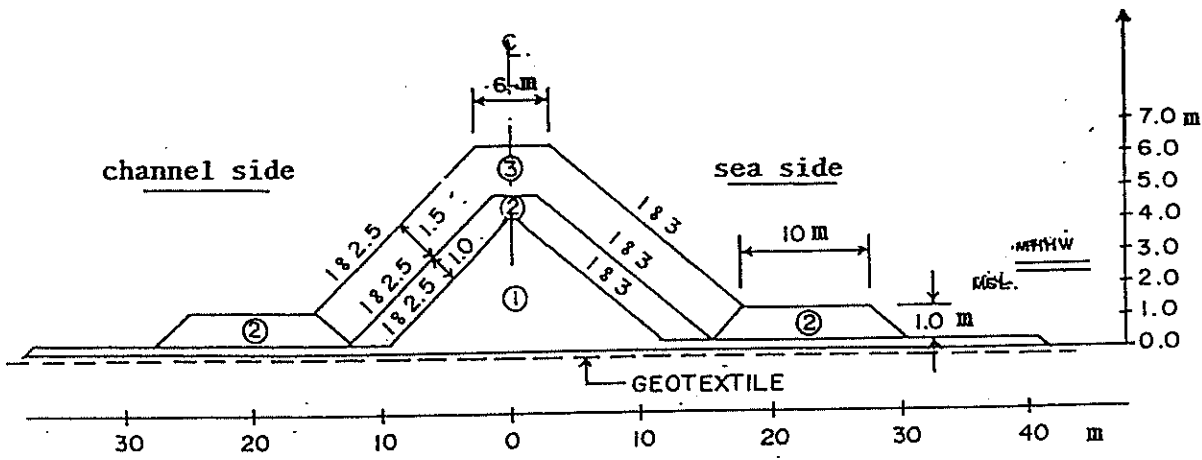
- LENGTH = 4.00 km.
- WIDTH = 60.00 m.
- DEPTH = 4.00 m.
- SIDE SLOPE = 1:6
- LLW = 0.86 m.
- SCALE = 1:15,000

DISTRICT MUANG

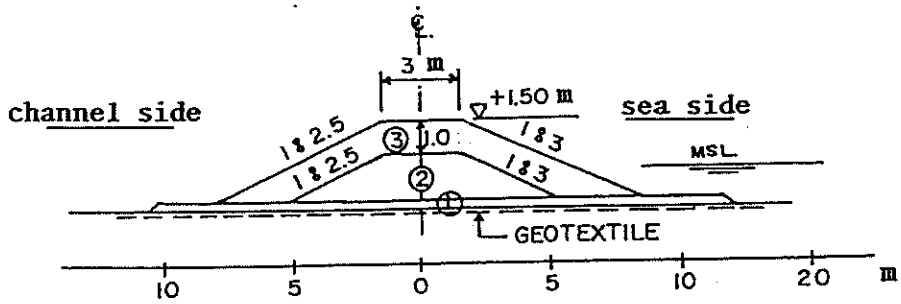
PROVINCE NARATHIWAT



SECTION A-A STRUCTURAL HEAD



SECTION B-B STRUCTURAL TRUNK



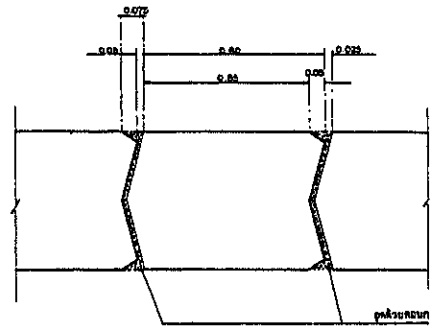
HEADLAND SECTION

TYPE OF LAYER	STRUCTURAL HEAD		STRUCTURAL TRUNK	HEADLAND
	SECTION A-A	SECTION B-B	SECTION B-B	
(ton) ① COVER LAYER	1.8	1.5	1.5	0.35
(kg) ② UNDER LAYER	180	150	150	35
(kg) ③ CORE LAYER	0.5-9	0.4-7.5	0.4-7.5	0.1-2

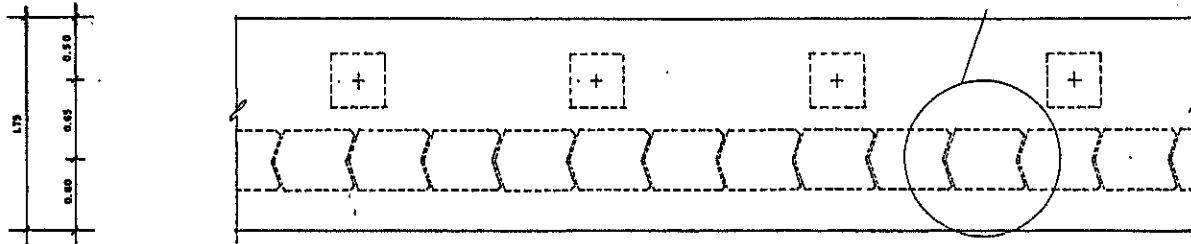
Figure 6.3-15 Training Jetties and Headland Structure (Rubble-mound Type)

Sakhom Channel

Source: HD



Detail of Concrete Sheet Pile



Concrete Beam Structure

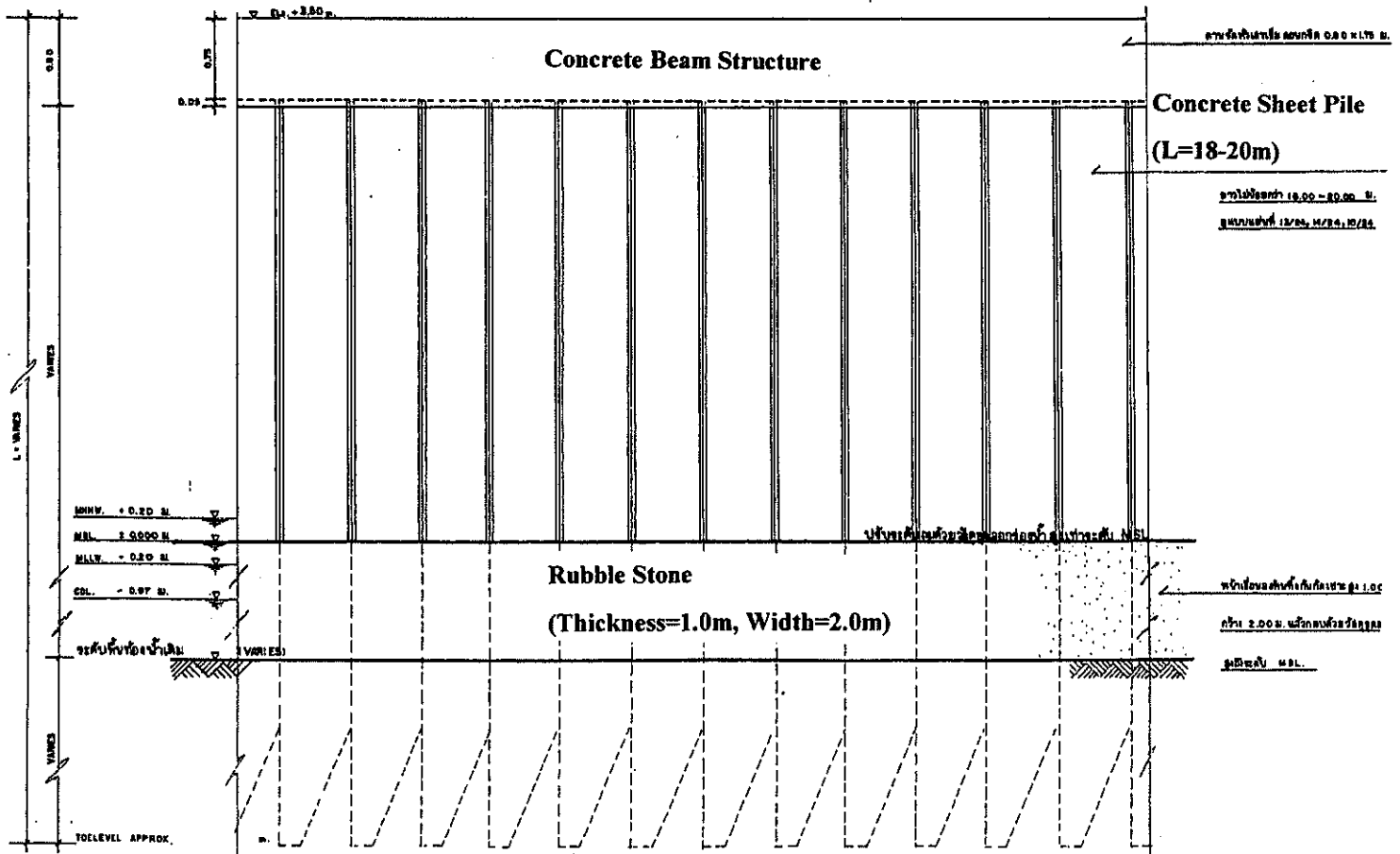
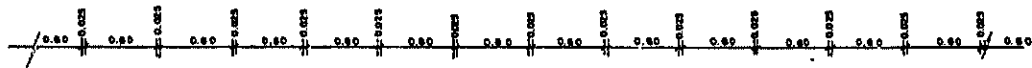


Figure 6.3-16 Training Jetty Structure (Concrete Sheet Pile Type)

Thepha Channel

Source:HD

6.4 Cargo Handling Facilities

(1) Songkhla Port

Songkhla Port has three berths (Total length 510m) as general cargo berth (180m and 175m in length, 30m in width) and container berth (155m in length and 30m in width). Main facilities are described in the table below.

Table 6.4-1 Port Facilities in Songkhla Port

Name of Berth	Length	Depth	Capacity	Shore Crane & Pipeline
Songkhla Commercial Port Container and general cargo wharf (Chaophaya Terminal International Co., Ltd.)	510 m	9.0 m	3 berths / 7 barges, Area 24.17 acres Container Yard: 50,000m ² Warehouse: 6,720m ² Stuffing Shed: 440m ²	Shore crane: mobile type Annual container handling capacity 128,000 TEU
Oil Terminal				
PTT Jetty A	75 m	6.0 m	1 x 3000 DWT	LPG, premium/ regular Mogas
PTT Jetty B	200 m	8.0 m	1 x 500-20000 DWT	Gas oil, P/R Mogas, Jet A-1
Shell Jetty	103 m	5.5 m	1 x 5000 DWT	
Oil Railway Jetty Located in Songkhla Bay	81.0 m	5.2 m	1 x 3600 DWT	Gas oil, P/R Mogas

Moreover, the cargo handling conditions of four coastal jetties in Songkhla are as follows:

a) Harinsut No.1 and No.2 Jetty

Coastal cargoes (bulk cargo and bagged cargo) for loading/unloading in Harinsut 1 jetty are handled by ship's gear. However, coastal cargoes of loading/unloading in Harinsut 2 jetty are handled by ship's gear and jib crane on the jetty together. The transit sheds in both jetties have approx. 100m² of storage area for bagged cargoes. The main commodities of cargoes are maize, agricultural products, etc. for bulk cargo, and shrimp feed, rice powder, plastic dishes, cement, etc. for bagged cargo. The cargo throughput in 2000 was estimated at approx. 250,000 ton/year. 11 vessels ranging from 194-1408 GRT use Harinsut 1 Jetty (4m berth depth) and Harinsut 2 Jetty (10m berth depth).

b) Railway Jetty

All coastal cargos for loading/unloading are handled by ship's gear. In 2000, the cargo throughput handled by three coastal vessels (532 GRT) of Vonaravin Co., Ltd. was approx. 50,000 tons of fertilizer from Rayong to Songkhla.

c) MPP Jetty

Coastal cargoes in MPP jetty are mainly container commodities such as rubber bale, smoke sheet rubber, para wood, furniture and frozen seafood. Container cargoes for loading/unloading are handled by crawler crane on the apron. The capacity of the open yard in MPP jetty is estimated to be approx. 50 TEUs. Monthly container handling volume was more than 200 TEUs.

(2) Khanom Channel

There are two berths (general cargo berth and petroleum unloading berth) for supporting the power station. Cargo vessels less than 3,000 DWT class can be accommodated at the general cargo berth.

(3) Tha Sala Channel

Mining factories with private jetties are located along the river. Gypsum, dolomite, feldspar and barites are shipped to Surat Tani Province. Mostly private jetties are equipped with the belt conveyor system for loading the ores.

(4) Pattani Channel

Para rubber trees (origin: Yala and Sungai-kolok provinces) are shipped from Pattani private jetties to Samut Sakhon province.

6.5 Fishery Facilities

Pattani channel has wide range of private fish marketing activities along the river. Pak Phanang and Songkhla fishing ports operate fishing activities in public fish markets. Many private fishing jetties were constructed in Khanom, Sai Buri, Sichon, Narathiwat, Pak Nakhon, etc.

Pattani and Narathiwat fishing ports were constructed by HD. Main fishery facility information is shown in Table 6.5-1.

Table 6.5-1 Main Fishery Facilities by HD

Fishing Port	Construction Completion Year	Number and Size of Berth	Remarks
Pattani	Old Berth 1984 New Berth 1999	Old Berth: 25m width 196m Length New berth: 8m width, 340 length with 5 fingers (8m width, 120m length)	Port (old berth) is leased to Pattana Kan Pramong Pattani Co., Ltd for the period of 20 years since 1986
Narathiwat	1993	One Berth: 35m width, 60m length	Negotiation with Fish Marketing Organization is in progress.

Source: HD

Table 6.5-2 shows the summary of facilities and utilization in the Study Channels.

Table 6.5-2 Type of Facilities in CDCII Management Channels

Cannel		Facilities	Owner/Organization	Type of Vessel and Utilization	Channel Depth (m)	Province
COAST						
1	Khanom	Petroleum/ General Cargo	Power Station, Petroleum Authority of Thailand (PTT)	Petroleum Vessel	5, 4.5, 3	Nakhon Si Thammarat
2	Outer, Inner Sector 1&2 Channel	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat	2	Nakhon Si Thammarat
3	Khanom (Inner Channel Sector 3)	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat	4	Nakhon Si Thammarat
4	Khlong Tung Ca (Ban Tepa)	Fishery	Local Fish Market & Processing	Fishing Boat	2	Nakhon Si Thammarat
5	Tha Mak	Fishery	Local Fish Market & Processing	Fishing Boat	2	Nakhon Si Thammarat
6	Pak Duad	Fishery	Local Fish Market & Processing	Fishing Boat	2	Nakhon Si Thammarat
7	Tha Sala	Fishery/Gypsum	Private Fish Market, Private Fish Processing Facilities, Private Jetty	Fishing Boat, Cargo Vessel	3	Nakhon Si Thammarat
8	Pak Phaying	Fishery	Local Fish Market & Processing	Fishing Boat	2	Nakhon Si Thammarat
9	Pak Phun	Fishery	Local Fish Market & Processing	Fishing Boat	2	Nakhon Si Thammarat
10	Ban Pak Paya	Fishery	Local Fish Market & Processing	Fishing Boat	2	Nakhon Si Thammarat
11	Ban Pak Nakhon	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat	3	Nakhon Si Thammarat
12	Pak Phanang	Fishery/Petroleum	Fish Market, PTT (Length 11m, Width 4m, Depth 2m, 600GRT)	Fishing Boat, Cargo Vessel	4	Nakhon Si Thammarat
13	Pak Khlong	Irrigation			1.5	Nakhon Si Thammarat
14	Pak Rawa	Irrigation			9	Songkhla
15	Songkhla (Harbour)	Fishery/Petroleum/ General Cargo	Private Operator, Private Fish Market, Public Fish Market, PTT, Private Fish Market, Private Fish Processing Facilities	Cargo Vessel, Fishing Boat	2	Songkhla
16	Na Thap	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat, Shrimp Farm	2	Songkhla
17	Sakom	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat, Shrimp Farm	2	Songkhla
18	The Pha	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	1.5	Pattani
19	Khlong Tu Yong	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	1.5	Pattani
20	Bang Ra Pha	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	1.5	Pattani
21	Tanyong Phao	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	1.5	Pattani
22	Ban Sai Samo	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	1.5	Pattani
23	Bang Ta Wa	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	2	Pattani
24	Ru Sa Mi Lac	Fishery	Local Fish Market & Processing	Fishing Boat, Irrigation	1.5	Pattani
25	Pattani	Fishery/Petroleum/ General Cargo (wood)	Private Fish Market, Private Fish Processing Facilities, Private Jetty	Fishing Boat, Cargo Vessel	5	Pattani
26	Laem Ta Chi (Pattani Outer Channel)	Fishery	Local Fish Market & Processing	Fishing Boat	5	Pattani
27	Panarc	Fishery	Private Fish Market	Fishing Boat	2	Pattani
28	Bang Maruat	Fishery	Private Fish Market	Fishing Boat, Shrimp Farm	1.5	Pattani
29	Sai Buri	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat	3	Pattani
30	Khlong Gor Tor	Fishery	Local Fish Market & Processing	Fishing Boat, Shrimp Farm	1.5	Pattani
31	Ta Lo Lac Weng	Fishery	Local Fish Market & Processing	Fishing Boat	1.5	Pattani
32	Khlong Kok Kean	Fishery	Local Fish Market & Processing	Fishing Boat, Irrigation	2	Narathiwat
33	Narathiwat	Fishery	Public Market, Private Fish Market, Private Fish Processing Facilities	Fishing Boat	4	Narathiwat
34	Tak Bai	Fishery	Private Fish Market, Private Fish Processing Facilities	Fishing Boat	3	Narathiwat
LAKE						
1	Thale Noi	Tourist Boat	Tourist Facilities	Tourist Boat	2	Pattalung
2	Ban Hua Pa	Irrigation		Irrigation	1.5	Songkhla
3	Ban Takhria	Irrigation		Irrigation	1.5	Songkhla
4	Ban Sala Tham	Irrigation		Irrigation	1.5	Songkhla
5	Ban Mai	Irrigation		Irrigation	1.5	Songkhla
6	Ban Chiang Phong	Irrigation		Irrigation	1.5	Songkhla
7	Ban Mahakan Ok	Irrigation		Irrigation	1.5	Songkhla
8	Ban Ku Khud-Ban Laem Vang	Tourist Boat	Tourist Facilities	Tourist Boat	1.5	Songkhla
9	Ban Lam Pam	Irrigation		Irrigation	1.5	Pattalung
10	Khlong Sam Rong	Fishing Boat		Fishing Boat	1.5	Songkhla

Source: CDCII

6.6 Navigational Channels of CDC II

Coastal Dredging Center (CDC) II manages 44 channels in the Southern Thailand Region. Only five channels and ports in the study area (Songkhla, Khanom, Tha Sala, Pak Phanang and Pattani) serve cargo vessels. Total of 32 channels in CDCII managing area serve fishing vessels.

Above-mentioned 44 channels consist of 30 coastal channels, two inland channels and 12 irrigations channels. The Harbour Department is responsible for management and maintenance of the channel dimensions as shown in Table 6.6-1.

Table 6.6-1 Dimensions of CDCII Management Channels

Channel		Width (m)	Length (km)	Depth (m)	Province		
1	Big	Khanom (Outer Channel)			Nakhon Si Thammarat		
		Outer Channel	80	0.745	5.0		
		Inner Channel Sector 1	180	0.382	4.5		
		Inner Channel Sector 2	140	0.237	3.0		
2	Big	Pak Phanang	60	27.000	4.0	Nakhon Si Thammarat	
3		Songkhla				Songkhla	
		Harbour	120	6.000	9.0		
		Inner Channel	250	5.000	5.0		
4		Pattani	60	4.000	5.0	Pattani	
5	Narathiwat	60	4.000	4.0	Narathiwat		
6	Mid.	Khanom (Inner Channel Sector 3)	40	2.800	2.0	Nakhon Si Thammarat	
7		Sichon	40	1.000	4.0	Nakhon Si Thammarat	
8		Khlong Tung Ca	30	1.000	2.0	Nakhon Si Thammarat	
9		Tha Mak	30	0.600	2.0	Nakhon Si Thammarat	
10		Pak Duad	30	0.800	2.0	Nakhon Si Thammarat	
11		Tha Sala	40	0.800	3.0	Nakhon Si Thammarat	
12		Pak Phaying	40	4.500	2.0	Nakhon Si Thammarat	
13		Pak Phun	40	3.500	2.0	Nakhon Si Thammarat	
14		Pak Paya	30	1.790	2.0	Nakhon Si Thammarat	
15		Pak Nakhon	40	3.700	3.0	Nakhon Si Thammarat	
16		Na Thap	40	0.800	2.0	Songkhla	
17		Thepha	40	1.000	2.0	Songkhla	
18		Sakom	40	0.700	2.0	Songkhla	
19		Ban Ku Khud-Ban Laem Vang	30	1.850	1.5	Songkhla	
20		Sai Buri	40	1.000	3.0	Pattani	
21		Panare	30	0.400	2.0	Pattani	
22		Bang Ta Wa	30	0.350	2.0	Pattani	
23		Tak Bai	40	0.600	3.0	Narathiwat	
24		Small	Thale Noi	20	10.000	2.0	Pattalung
25			Khlong Sam Rong	6	10.000	1.5	Songkhla
26	Bang Ra Pha		20	0.070	1.5	Pattani	
27	Ban Sai Samo		15	0.350	1.5	Pattani	
28	Tanyong Phao		20	0.900	1.5	Pattani	
29	Bang Maruat		20	0.800	1.5	Pattani	
30	Ta Lo Lae Weng		30	0.500	1.5	Pattani	
31	Khlong Gor Tor		30	0.700	1.5	Pattani	
32	Laem Ta Chi		20	0.900	1.5	Pattani	
33	Khlong Tu Yong		20	0.700	1.5	Pattani	
34	Ru Sa Mi Lae		30	0.900	1.5	Pattani	
35	Khlong Kok Kean		20	10.000	2.0	Narathiwat	
36	Pak Rawa				1.5	Nakhon Si Thammarat	
37	Pak Khlong				1.5	Nakhon Si Thammarat	
38	Mahakan Ok				1.5	Songkhla	
39	Chiang Phong				1.5	Songkhla	
40	Mai				1.5	Songkhla	
41	Takhria				1.5	Songkhla	
42	Hua Pa				1.5	Songkhla	
43	La Pam				1.5	Pattalung	
44	Sala Tham				1.5	Songkhla	

Note: HD defines the channel priorities as Big, Mid and Small.

■ : Irrigation Channel