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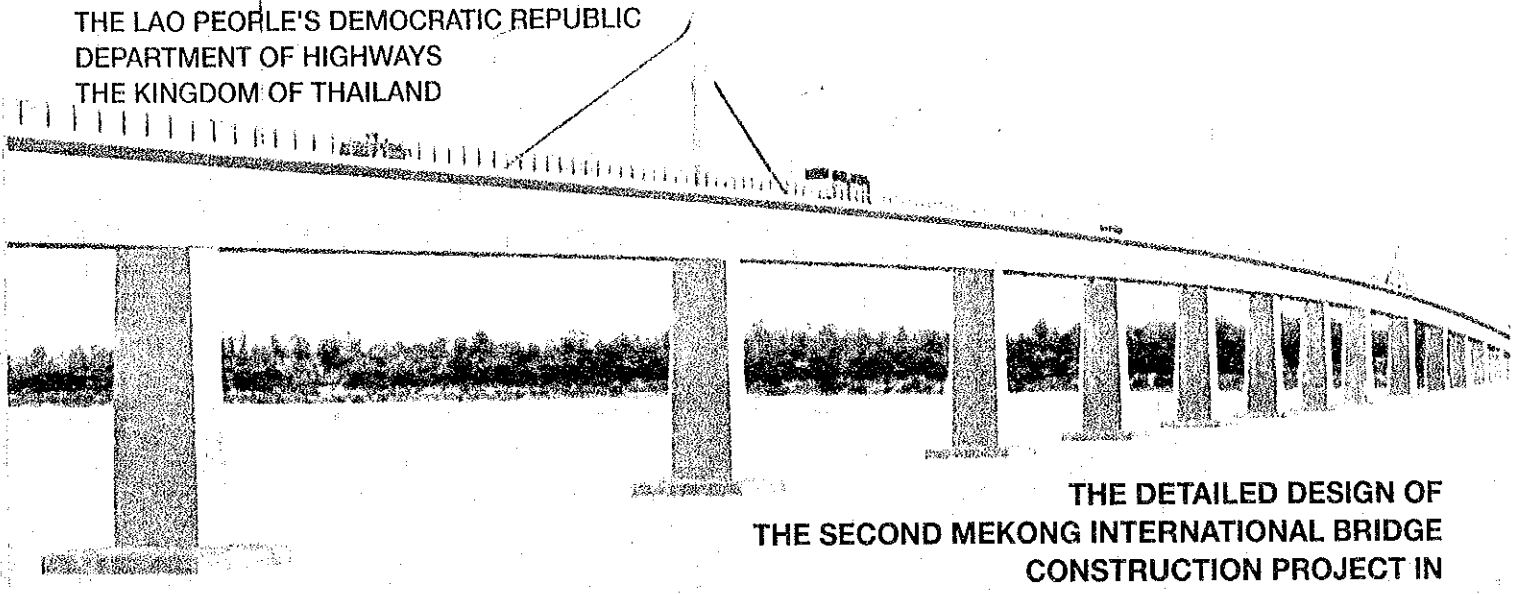
No. 11

JAPAN INTERNATIONAL COOPERATION AGENCY

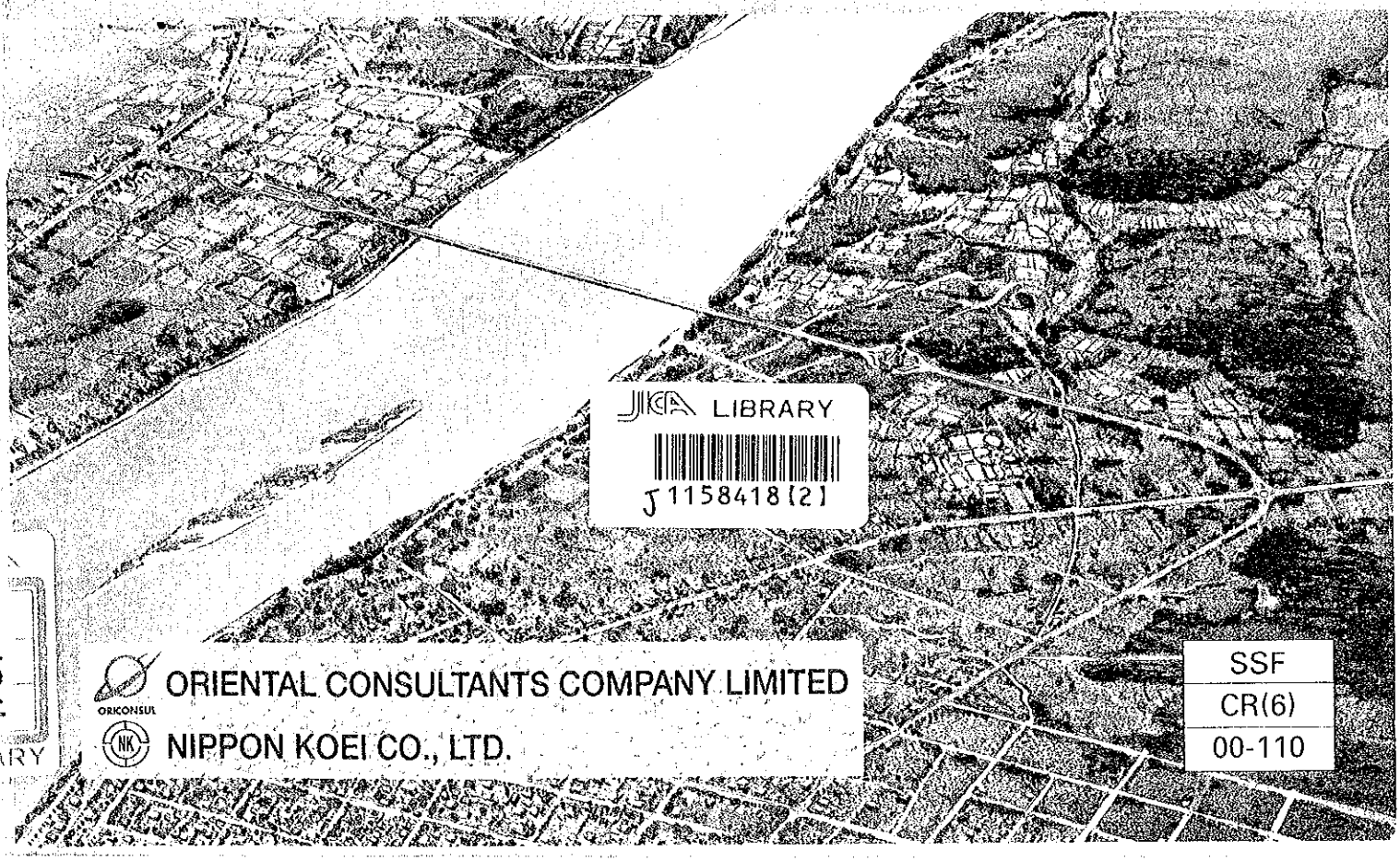
MINISTRY OF COMMUNICATION, TRANSPORT, POST AND CONSTRUCTION
THE LAO PEOPLE'S DEMOCRATIC REPUBLIC
DEPARTMENT OF HIGHWAYS
THE KINGDOM OF THAILAND



THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC AND THE KINGDOM OF THAILAND

FINAL REPORT

JUNE 2000



ORIENTAL CONSULTANTS COMPANY LIMITED
NIPPON KOEI CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

MINISTRY OF COMMUNICATION, TRANSPORT, POST AND CONSTRUCTION
THE LAO PEOPLE'S DEMOCRATIC REPUBLIC
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THE DETAILED DESIGN OF
THE SECOND MEKONG INTERNATIONAL BRIDGE
CONSTRUCTION PROJECT IN
THE LAO PEOPLE'S DEMOCRATIC REPUBLIC AND
THE KINGDOM OF THAILAND

FINAL REPORT
SURVEY REPORT

JUNE 2000

ORIENTAL CONSULTANTS COMPANY LIMITED
NIPPON KOEI CO., LTD.

NATURAL CONDITION SURVEY

1) Topographic survey			
Center line survey			Shown in Drawings
Profile survey			Shown in Drawings
Cross-sectional survey (100m width to each side from the centerline)			Shown in Drawings
Topographic mapping			Shown in Drawings
BM data			Shown in this Report - B
2) Geological and material survey			
a) Geological survey			
Boring test	Boring logs - River	6 nos.	Shown in this Report - A1
	Boring logs - Ground	4 nos.	Shown in this Report - A1
	Auger boring logs	50m interval	Shown in this Report - A2
Laboratory test	Sieve analysis		Shown in this Report - A3
	Unit weight test		Shown in this Report - A3
	Specific gravity		Shown in this Report - A3
	Moisture test		Shown in this Report - A3
	Permeability test		Shown in this Report - A3
	Plastic limit test		Shown in this Report - A3
	Liquid limit test		Shown in this Report - A3
	Unconfined compression test		Shown in this Report - A3
	Triaxial compression test (CU,UU)		Shown in this Report - A3
	Compression test		Shown in this Report - A3
	CBR test		Shown in this Report - A3
b) Material test	Sieve analysis		Shown in this Report - A3
	Abrasion test		Shown in this Report - A3
	Alkali- silica reaction		Shown in this Report - A3
	PH value test		Shown in this Report - A3
	Chloride content test		Shown in this Report - A3
	Compaction test		Shown in this Report - A3
	CBR test		Shown in this Report - A3
3) Hydrology and Hydraulic survey			
Sounding			Shown in Drawings
Flow velocity survey			Shown in this Report - C
The data analysis of hydrology and hydraulic survey			Shown in Basic Design Report
4) Environmental impact assessment (EIA)			
Study of air pollution			Shown in Environmental Study Report
The study of the noise / vibration			Shown in Environmental Study Report

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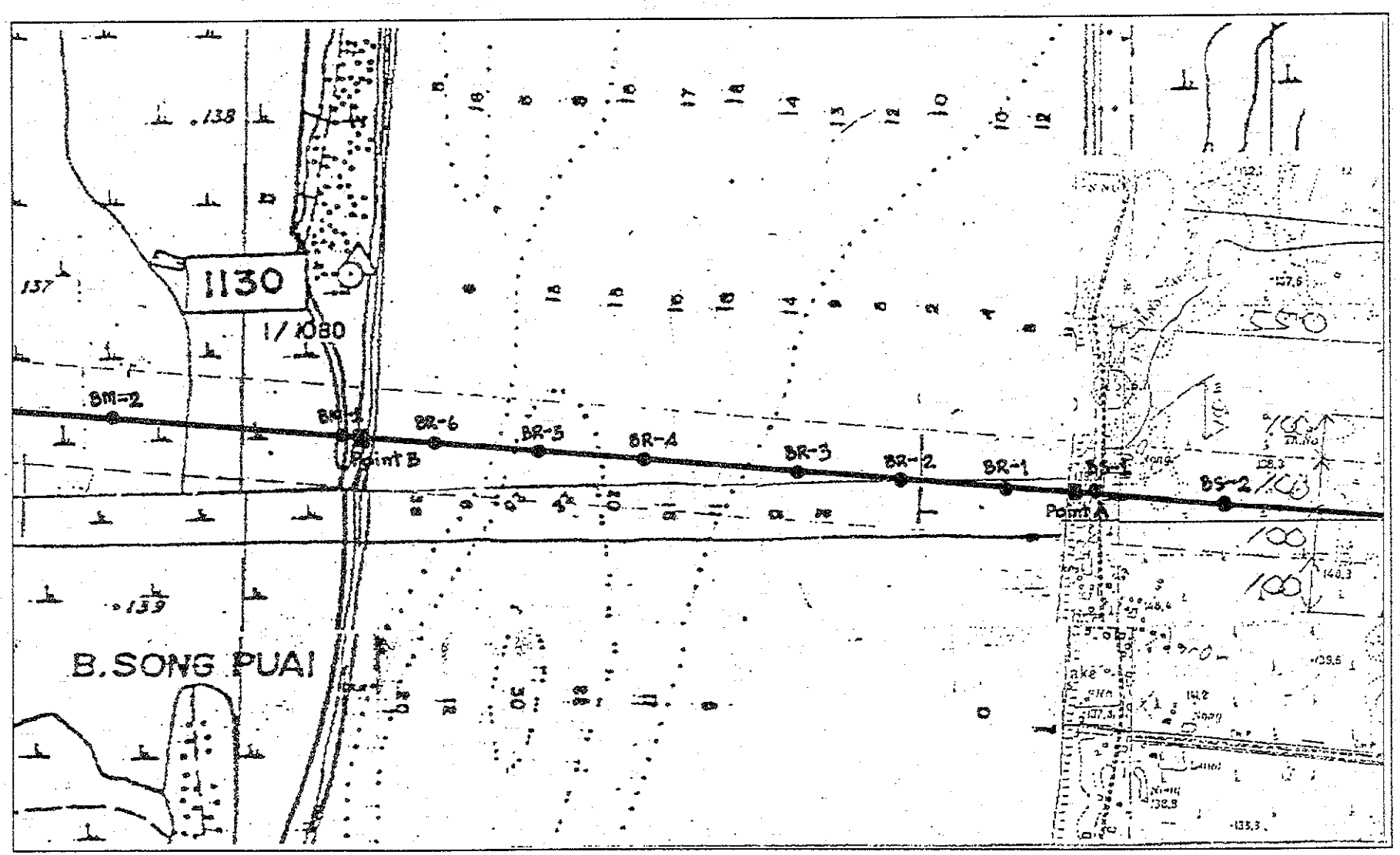
A. Soil and Aggregate Material Test

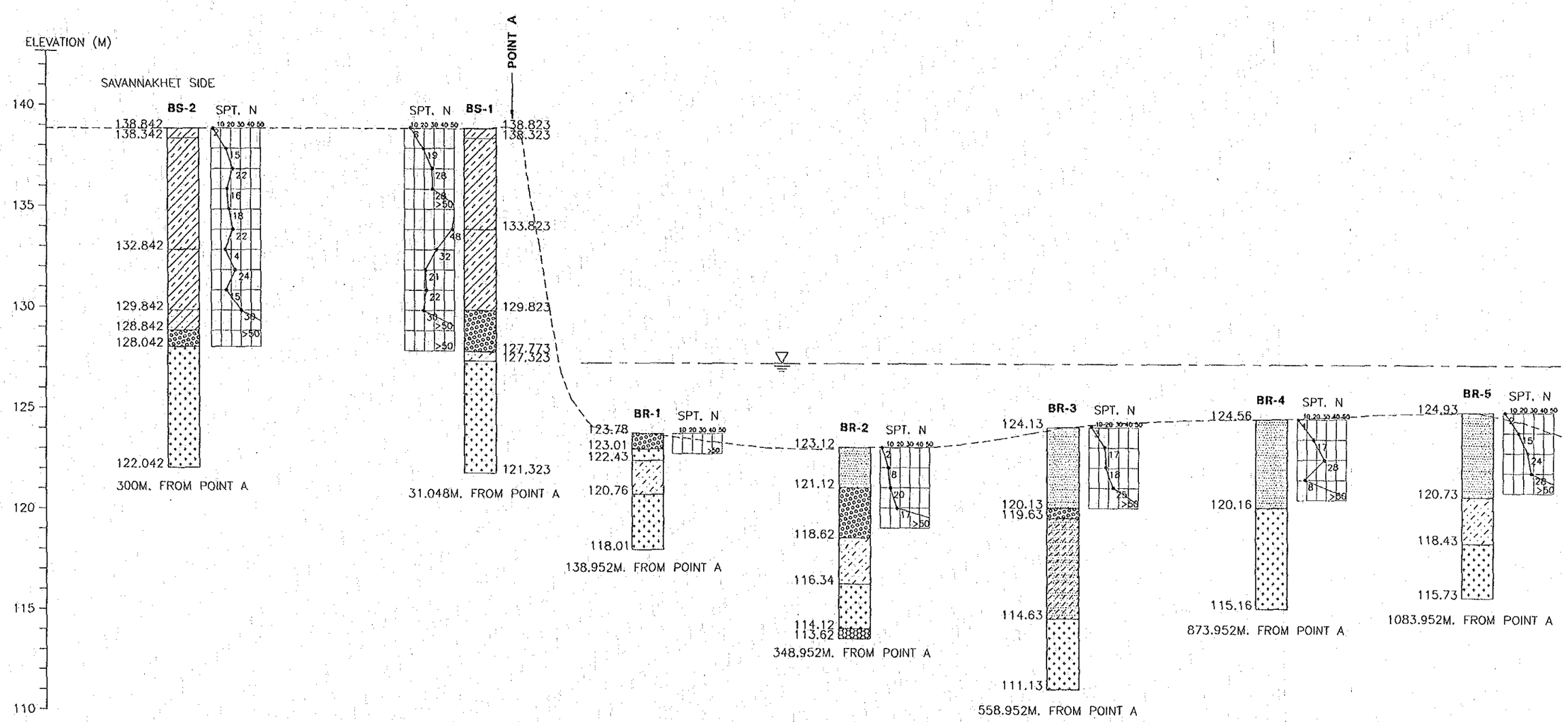
A1. Boring Logs and Pressure-meter Test Data



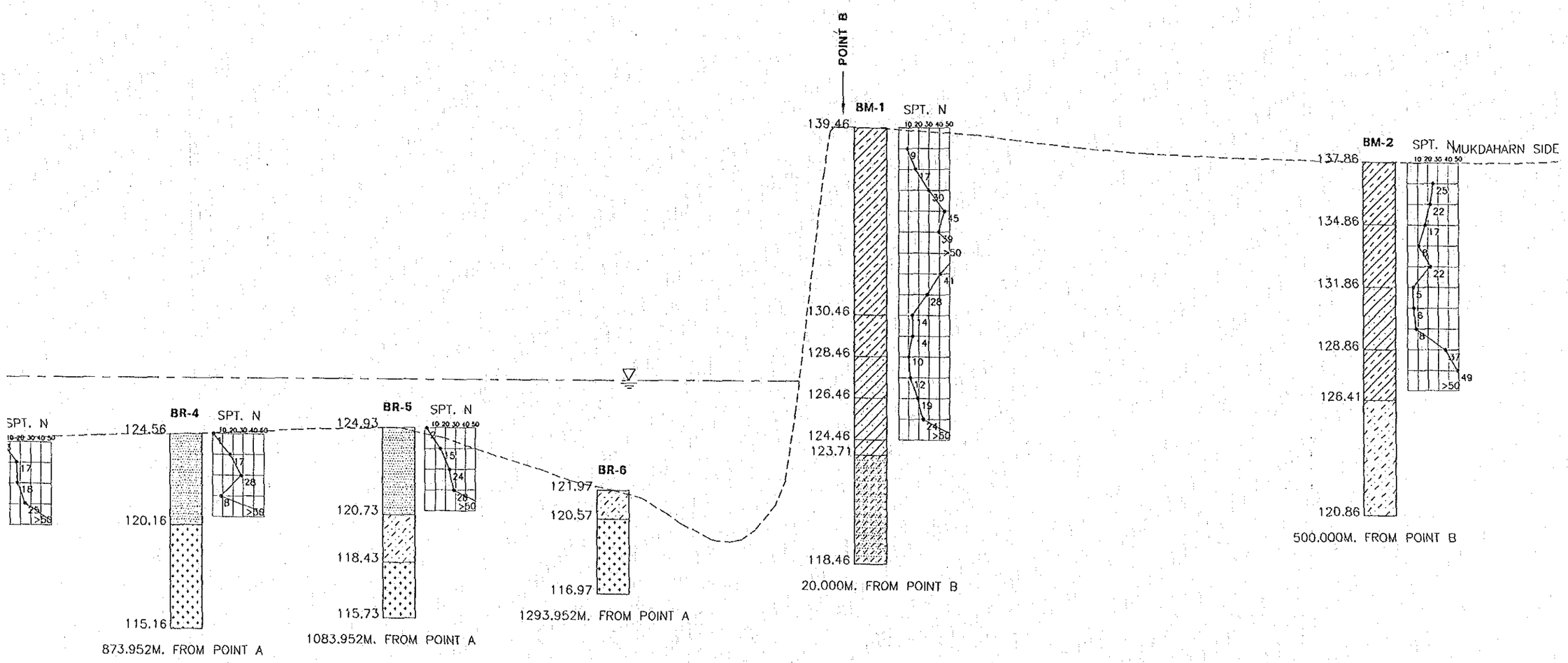
Location of bored hole

GEOLOGICAL CROSS SECTION OF STUDY AREA

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BR



_OGICAL CROSS SECTION OF STUDY AREA
GN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT



Locations of Boreholes and Piers

Borehole No.	Pier/Point No.	Distance from Point A (m. towards Thai side)	Distance from point B (m towards Lao side)	Remarks
BS - 2		-300.000	1,763.952	Approach Embankment
BS - 1	BA-1	-31.048	1,495.000	Box Abutment on Laos side
	Point A	0.000	1,463.952	
	P-1	33.952	1,430.000	
BR-1	P-2	138.952	1,325.000	
	P-3	243.952	1,220.000	
BR-2	P-4	348.952	1,115.000	
	P-5	453.952	1,010.000	
BR-3	P-6	558.952	905.000	
	P-7	663.952	800.000	
	P-8	768.952	695.000	
BR-4	P-9	873.952	590.000	
	P-10	978.952	485.000	
BR-5	P-11	1,083.952	380.000	
	P-12	1,188.952	275.000	
BR-6	P-13	1,293.952	170.000	
	P-14	1,398.952	65.000	
	Point B	1,463.952	0.000	
BM-1	BA-2	1,483.952	-20.000	Box Abutment on Thailand side
BM-2		1,963.952	-500.000	Approach Embankment

Summary of bored holes

Hole No.	Location	Coordinate	Elevation (m.)	Date		Drilling Length (m)			Nos. of SPT	Nos. of PMT	Nos. of Undisturbed Sample
				From	To	Soil	Rock	Toal			
BS-1	On ground Savannakhet	31.048 m From A		03-May-99	06-May-99	11.05	6.00	17.05	12	4	-
BS-2	On ground Savannakhet	300 m. From A		13-May-99	16-May-99	10.80	6.00	16.80	11	3	1
BR-1	River	138.95 m. From A	123.78	02-May-99	04-May-99	0.77	5.00	5.77	1	0	-
BR-2	River	348.95 m. From A	123.12	05-May-99	12-May-99	4.50	5.00	9.50	5	2	-
BR-3	River	558.95m. From A	124.13	14-May-99	18-May-99	4.50	8.50	13.00	5	3	-
BR-4	River	873.95 m. From A	124.56	19-May-99	20-May-99	4.40	5.00	9.40	5	3	-
BR-5	River	1,083.95 m. From A	124.93	20-May-99	21-May-99	4.20	5.00	9.20	5	3	-
BR-6	River	1,293.95 m. From A	121.97	22-May-99	22-May-99	-	5.00	5.00	0	2	-
BM-1	On ground Mukdaharn	20 m From B		05-May-99	08-May-99	15.77	5.23	21.00	16	3	4
BM-2	On ground Mukdaharn	500 m. From B		14-May-99	18-May-99	11.45	5.55	17.00	11	4	3
					Total	67.44	56.28	123.72	71	27	8

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BM-1

SHEET NO. 1 OF 2

SITE	ON GROUND MUKDAHARN	COORDINATE	20.000 M. FROM POINT B	WATER LEVEL - M.
		DATE	FROM 05/05/99 TO 08/05/99	DRILL RIG 3
AVERAGE CORE RECOVERY:	94 %	DEPTH	21.000 M.	DRILLED LERTCHAI
		ELEVATION	139.46 M.	LOGGED TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
05/05/99	1		SILTY CLAY (CL)		Very stiff, low plasticity, pale brown.	DRAG BIT 100 MM.	PMT-1			9	WASH	
											UD	1
	2									17	SPT+UD	
											UD	2
	3									30	SPT	
											WASH	3
	4									45	SPT	
											WASH	4
	5									39	SPT	
											WASH	5
	6									>50	SPT	
											UD	6
	7									41	SPT	
											WASH	7
	8									28	SPT	
											WASH	8
	9	130.46			9.00 m.					14	SPT	
											WASH	9
06/05/99	10		SILT WITH CLAY (M)		Stiff, low plasticity, fine of sand grain, pale brown to dark yellowish brown.		PMT-2			14	SPT	
											WASH	10
	11	128.46			11.00 m.					10	SPT	
											WASH	11
	12		SANDY SILT (M)		Medium dense, fine grain, poor graded, pale brown.					12	SPT	
											WASH	12
	13	126.46			13.00 m.					19	SPT	
											WASH	13
	14		SILTY SAND (SM)		Dense, fine grain, poor graded, dark gray and pale yellowish brown.					24	SPT	
											WASH	14
	15	124.46			15.00 m.					>50		15

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BM-1

SHEET NO. 2 OF 2

SITE	ON GROUND MUKDAHARN	COORDINATE DATE	20.000 M. FROM POINT B FROM 05/05/99 TO 08/05/99	WATER LEVEL - M. DRILL RIG 3 DRILLED LERTCHAI LOGGED TAWEESAK
AVERAGE CORE RECOVERY:		94 %	DEPTH 21.000 M. ELEVATION 139.46 M.	

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
07/05/99	16	123.71	SILTY SAND WITH GRAVEL (SM)		Very dense, fine to medium of sand grain, 4-20 mm. of gravel grain, well graded, pale yellowish brown.	NWM	PMT-3		123	>50	CORE	16
	17				15.75 m.				68			17
	18		SANDY MUDSTONE (M)		Moderately hard , tuff origin, dusky red. RQD = 50%				110			18
08/05/99	19								112			19
	20								145			20
	21	118.46			21.00 m.							21
	22				END OF BOREHOLE AT DEPTH 21.00 M.							22
	23											23
	24											24
	25											25
	26											26
	27											27
	28											28
	29											29
	30											30

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BM-2

SHEET NO. 1 OF 2

SITE	ON GROUND MUKDAHARN	COORDINATE	500.000 M. FROM POINT B	WATER LEVEL	3.10 M.
		DATE	FROM 14/05/99 TO 18/05/99	DRILL RIG	3
AVERAGE CORE RECOVERY:	90 %	DEPTH	17.000 M.	DRILLED	LERTCHAI
		ELEVATION	137.86 M.	LOGGED	TAWEESAK

DEPTH	ELEVATION	ROCK TYPE OR FORMATION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE	SAMPLING
1–3	134.86	SILTY CLAY WITH SAND (CL)	Stiff to very stiff, low plasticity, pale brown. 3.00 m.	DRAG BIT 100 MM.				25, 22, 17	UD, UD, SPT, WASH, SPT, WASH, SPT
3–6	131.86	SILTY CLAY (CL)	Stiff to very stiff, low plasticity, pale brown. 6.00 m.		PMT-1			8, 22	WASH, SPT, WASH, SPT+UD
6–9	128.86	SANDY SILT (M)	Medium stiff, low plasticity, fine of sand grain, pale brown to dark yellowish brown. 9.00 m.		PMT-2			5, 6, 8, 37	WASH, SPT, WASH, SPT, WASH, SPT
9–11	126.41	SILTY CLAY (CL)	Very stiff, low plasticity, weathered mudstone, pale brown. 11.45 m.					49, >50	WASH, SPT, WASH, SPT
11–15		MUDSTONE (M)	Weak, close fracture,tuff origin, dusky red. RQD = 8%	NWM	PMT-3	105, 137, 100			CORE

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BM-2

SHEET NO. 2 OF 2

SITE	ON GROUND MUKDAHARN	COORDINATE	500.000 M. FROM POINT B
		DATE	FROM 14/05/99 TO 18/05/99
AVERAGE CORE RECOVERY:	90 %	DEPTH	17.000 M.
		ELEVATION	137.86 M.

WATER LEVEL 3.10 M.

DRILL RIG 3

DRILLED LERTCHAI

LOGGED TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
	16		MUDSTONE (M)		Weak, close fracture,tuff origin, dusky red. RQD = 8%	NWM	PMT-4		37		CORE	16
	17	120.86			17.00 m.				118			17
					END OF BOREHOLE AT DEPTH 17.00 M.							
	18											18
	19											19
	20											20
	21											21
	22											22
	23											23
	24											24
	25											25
	26											26
	27											27
	28											28
	29											29
	30											30

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BR-1

SHEET NO. 1 OF 1

SITE	RIVER	COORDINATE	138.952 M. FROM POINT A
		DATE	FROM 02/05/99 TO 04/05/99
AVERAGE CORE RECOVERY:	95 %	DEPTH	5.770 M.
		ELEVATION	123.78 M.

WATER LEVEL 1.76 M.

DRILL RIG 1

DRILLED KHAMPHAY

LOGGED TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
03/05/99	0	123.01	WELL GRADED GRAVEL WITH SAND, (GW)			HQ				>50	SPT WASH	0
	1	122.43	SANDSTONE		Dense, medium of sand grain and 4-40 mm. of gravel, well graded, pale brown to pale yellowish brown. 0.77 m.				124			1
	2		MUDSTONE		Hard, medium grain, reddish brown. RQD = 45% 1.35 m.							2
	3	120.76	SANDSTONE		Moderately hard, tuff origin, close fracture at 1.35-2.05, 2.77-3.02 m., reddish brown. RQD = 26% 3.02 m.	NWM			150		CORE	3
04/05/99	4											4
	5				Hard, medium grain, cross-lamination in texture, horizontal joint at 4.68, 4.92, 5.20, 5.30 m., reddish brown. RQD = 98% 5.77 m.				150			5
	6	118.01							50			6
	7				END OF BOREHOLE AT DEPTH 5.77 M.							7
	8											8
	9											9
	10											10
	11											11
	12											12
	13											13
	14											14
	15											15

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BR-2

SHEET NO. 1 OF 1

SITE / RIVER	COORDINATE	348.952 M. FROM POINT A	WATER LEVEL 2.40 M.
	DATE	FROM 05/05/99 TO 12/05/99	DRILL RIG 1
AVERAGE CORE RECOVERY:	100 %	DEPTH 9.500 M.	DRILLED KHAMPHAY
		ELEVATION 123.120 M.	LOGGED TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
05/05/99	1		POORLY GRADED SAND (GW)		Loose, medium to cosrse grain with some granule, pale brown to pale yellowish brown to dark yellowish brown.	HQ				2	SPT	1
	2	121.12			2.00 m.					8	WASH	2
06/05/99	3		POORLY GRADED GRAVEL WITH SAND (GP)		Medium dense, 4-20 mm. of grain size with some sand, pale brown to grayish brown.		PMT-1			20	SPT	3
	4	118.62			4.50 m.					17	WASH	4
11/05/99	5		MUDSTONE		Moderately hard, tuff origin, reddish brown. RQD = 57%				150		SPT	5
	6								100		WASH	6
	7	116.34			6.78 m.	NWM				>50	SPT	7
12/05/99	8		SANDSTONE		Hard, medium grain, cross-lamination texture, reddish brown. RQD = 63%		PMT-2		100		CORE	8
	9	114.12			9.00 m.				150			9
		113.62	CONGLOMERATE		Moderately hard, granular of grain size, grayish brown. RQD = 0%							
	10				9.50 m.							10
	11				END OF BOREHOLE AT DEPTH 9.50 M.							11
	12											12
	13											13
	14											14
	15											15

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BR-3

SHEET NO. 1 OF 1

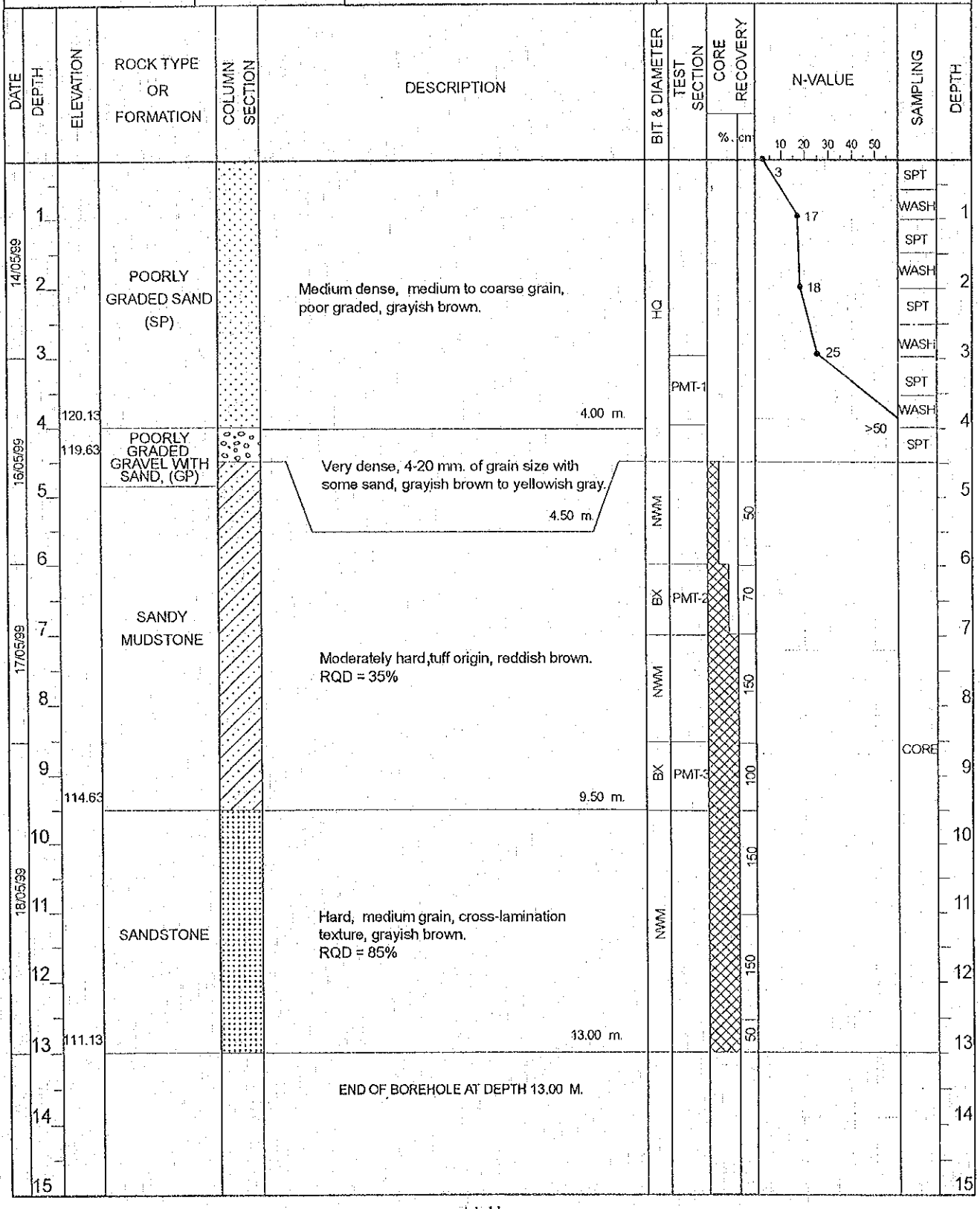
SITE	RIVER	COORDINATE	558.952 M. FROM POINT A
		DATE	FROM 14/05/99 TO 18/05/99
AVERAGE CORE RECOVERY:	88 %	DEPTH	13.000 M.
		ELEVATION	124.130 M.

WATER LEVEL 4.20 M.

DRILL RIG 1

DRILLED KHAMPHAY

LOGGED TAWEESAK



DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BR-4

SHEET NO. 1 OF 1

SITE	RIVER	COORDINATE	873.952 M. FROM POINT A	WATER LEVEL	3.96 M.
		DATE	FROM 19/05/99 TO 20/05/99	DRILL RIG	1
AVERAGE CORE RECOVERY:		100 %	DEPTH 9.400 M.	DRILLED	KHAMPHAY
			ELEVATION 124.560 M.	LOGGED	TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE	SAMPLING	DEPTH
19/05/99	0											0
	1		POORLY GRADED SAND (SP)		Medium dense, medium to coarse poor graded, light brown,	HQ				1	SPT	1
	2									17	WASH	2
	3									28	SPT	3
	4	120.16			4.40 m.		PMT-1			8	WASH	4
	5		SANDSTONE		Hard, medium grain, hard, cross-lamination texture, grayish brown, RQD = 90%	NWM		150		>50	SPT	5
	6						PMT-2	150				6
	7							150				7
	8							150				8
20/05/99	9	115.16			9.40 m.		PMT-3	50			CORE	9
	10				END OF BOREHOLE AT DEPTH 9.40 M.							10
	11											11
	12											12
	13											13
	14											14
	15											15

DRILL LOG

PROJECT:	THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT	HOLE NO.	BR-5
		SHEET NO.	1 OF 1

SITE	RIVER	COORDINATE	1,083.952 M. FROM POINT A	WATER LEVEL	3.70 M.
		DATE	FROM 20/05/99 TO 21/05/99	DRILL RIG	1
AVERAGE CORE RECOVERY:	93 %	DEPTH	9.200 M.	DRILLED	KHAMPHAY
		ELEVATION	124.930 M.	LOGGED	TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
20/05/99	1									2	SPT	1
	2		POORLY GRADED SAND (SP)		Medium dense, medium to coarse grain, poor graded, grayish to blackish red.	HQ				15	WASH	2
	3									24	SPT	3
	4	120.73			4.20 m.		PMT-1			28	WASH	4
	5		MUDSTONE		Moderately hard, tuff origin, reddish brown. RQD = 34%				150		SPT	5
	6						PMT-2		150		WASH	6
		118.43			6.50 m.					>50	SPT	
21/05/99	7		SANDSTONE		Hard, medium grain, cross-lamination texture, grayish brown. RQD = 98%	NWM			150		CORE	7
	8								150			8
	9	115.73			9.20 m.							9
	10				END OF BOREHOLE AT DEPTH 9.20 M.	BX	PMT-3					10
	11											11
	12											12
	13											13
	14											14
	15											15

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BR-6

SHEET NO. 1 OF 1

SITE	RIVER	COORDINATE	1,293.952 M. FROM POINT A	WATER LEVEL	6.70 M.
		DATE	FROM 22/05/99 TO 22/05/99	DRILL RIG	1
AVERAGE CORE RECOVERY:		100 %	DEPTH 5.000 M.	DRILLED	KHAMPHAY
			ELEVATION 121.970 M.	LOGGED	TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
22/05/99	1	120.57	MUDSTONE		Moderately hard, tuff origin, close fracture at 1.00 - 1.40 m., reddish brown. RQD = 71%	NWM		150				1
					1.40 m.							
	2		SANDSTONE		Hard, medium grain, cross-lamination texture, conglomerate seam at 4.38-4.52, 4.72-5.00 m., reddish brown. RQD = 79%			150				2
	3						PMT-1				CORE	3
	4							150				4
							PMT-2					
	5	116.97			5.00 m.			50				5
					END OF BOREHOLE AT DEPTH 5.00 M.							
	6											6
	7											7
	8											8
	9											9
	10											10
	11											11
	12											12
	13											13
	14											14
	15											15

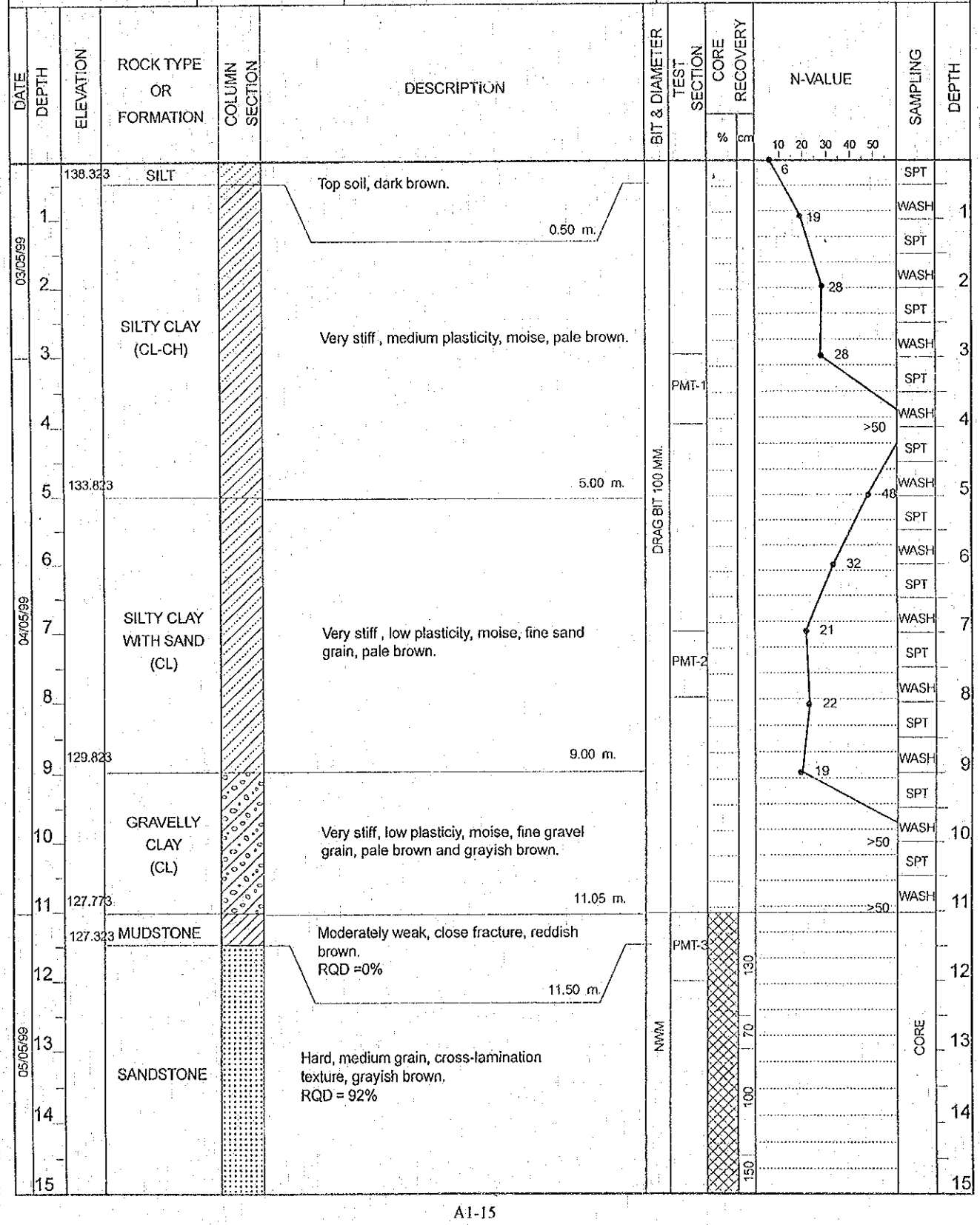
DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BS-1

SHEET NO. 1 OF 2

SITE	ON GROUND SAVANNAKHET	COORDINATE	31.048 M. FROM POINT A	WATER LEVEL	- M.
		DATE	FROM 03/05/99 TO 06/05/99	DRILL RIG	2
AVERAGE CORE RECOVERY:	100 %		DEPTH 17.050 M.	DRILLED	MANYSONE
			ELEVATION 138.823 M.	LOGGED	TAWEESAK



DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BS-1

SHEET NO. 2 OF 2

SITE	ON GROUND SAVANNAKHET	COORDINATE DATE	31.048 M. FROM POINT A FROM 03/05/99 TO 06/05/99	WATER LEVEL - M. DRILL RIG 2	
AVERAGE CORE RECOVERY:	100 %		DEPTH 17.050 M. ELEVATION 138.823 M.	DRILLED MANYSONE LOGGED TAWEESAK	

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
05/05/99	16		SANDSTONE		Hard, medium grain, cross-lamination texture, grayish brown. RQD = 92%	NWM	PMT-4	150	150		CORE	16
	17	121.773			17.05 m.							17
					END OF BOREHOLE AT DEPTH 17.05 M.							
	18											18
	19											19
	20											20
	21											21
	22											22
	23											23
	24											24
	25											25
	26											26
	27											27
	28											28
	29											29
	30											30

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BS-2

SHEET NO. 1 OF 2

SITE	ON GROUND SAVANNAKHET	COORDINATE	300.000 M. FROM POINT A	WATER LEVEL	- M.
		DATE	FROM 13/05/99 TO 16/05/99	DRILL RIG	2
AVERAGE CORE RECOVERY:	100 %	DEPTH	16.800 M.	DRILLED	MANYSONE
		ELEVATION	138.842 M.	LOGGED	TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE	SAMPLING	DEPTH
13/05/99	0	138.342	SILTY CLAY,(CL)		Soft, low plasticity, grayish brown. 0.50 m.	DRAG BIT 100 MM.				2	SPT	
	1									15	UD	1
											SPT	
	2									22	WASH	2
											SPT	
	3		SILTY CLAY (CL)		Very stiff, low plasticity, pale brown.		PMT-1			16	WASH	3
											SPT	
	4									18	WASH	4
											SPT	
	5									22	WASH	5
											SPT	
	6	132.842			6.00 m.					14	WASH	6
14/05/99											SPT	
	7		SILTY CLAY WITH SAND (CL)		Medium stiff to stiff, low plasticity, fine sand grain, grayish brown.		PMT-2			24	WASH	7
											SPT	
	8									15	WASH	8
											SPT	
	9	129.842			9.00 m.					30	WASH	9
			SILTY SAND (SM)		Medium dense to dense, low plasticity, fine grain, dark reddish brown.						SPT	
	10	128.842			10.00 m.					>50	WASH	10
			CLAYEY GRAVEL WITH SAND (GC)		Dense, low plasticity, granular with fine sand grain, dark reddish brown.						SPT	
		128.042			10.80 m.						WASH	
	11					BX		100				11
							PMT-3					
	12											12
15/05/99								150				
	13		SANDSTONE		Hard, medium grain, cross-lamination texture, bedding inclined 20° at 13.34 m., grayish brown. RQD = 87%	NWM					CORE	13
	14							150				14
	15											15

DRILL LOG

PROJECT: THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. BS-2

SHEET NO. 2 OF 2

SITE	ON GROUND SAVANNAKHET	COORDINATE DATE	300.000 M. FROM POINT A FROM 13/05/99 TO 16/05/99	WATER LEVEL - M. DRILL RIG 2
AVERAGE CORE RECOVERY:	100 %		DEPTH 16.800 M. ELEVATION 138.842 M.	DRILLED MANYSONE LOGGED TAWEESAK

DATE	DEPTH	ELEVATION	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	BIT & DIAMETER	TEST SECTION	CORE RECOVERY %	CORE RECOVERY cm	N-VALUE 10 20 30 40 50	SAMPLING	DEPTH
15/05/99	16	122.042	SANDSTONE		Hard, medium grain, cross-lamination texture, bedding incline 20° at 13.34 m., grayish brown. RQD = 87%	NWM		150	50		CORE	16
	17				16.80 m. END OF BOREHOLE AT DEPTH 16.80 M.							17
	18											18
	19											19
	20											20
	21											21
	22											22
	23											23
	24											24
	25											25
	26											26
	27											27
	28											28
	29											29
	30											30

Summary of Pressuremeter Test Results

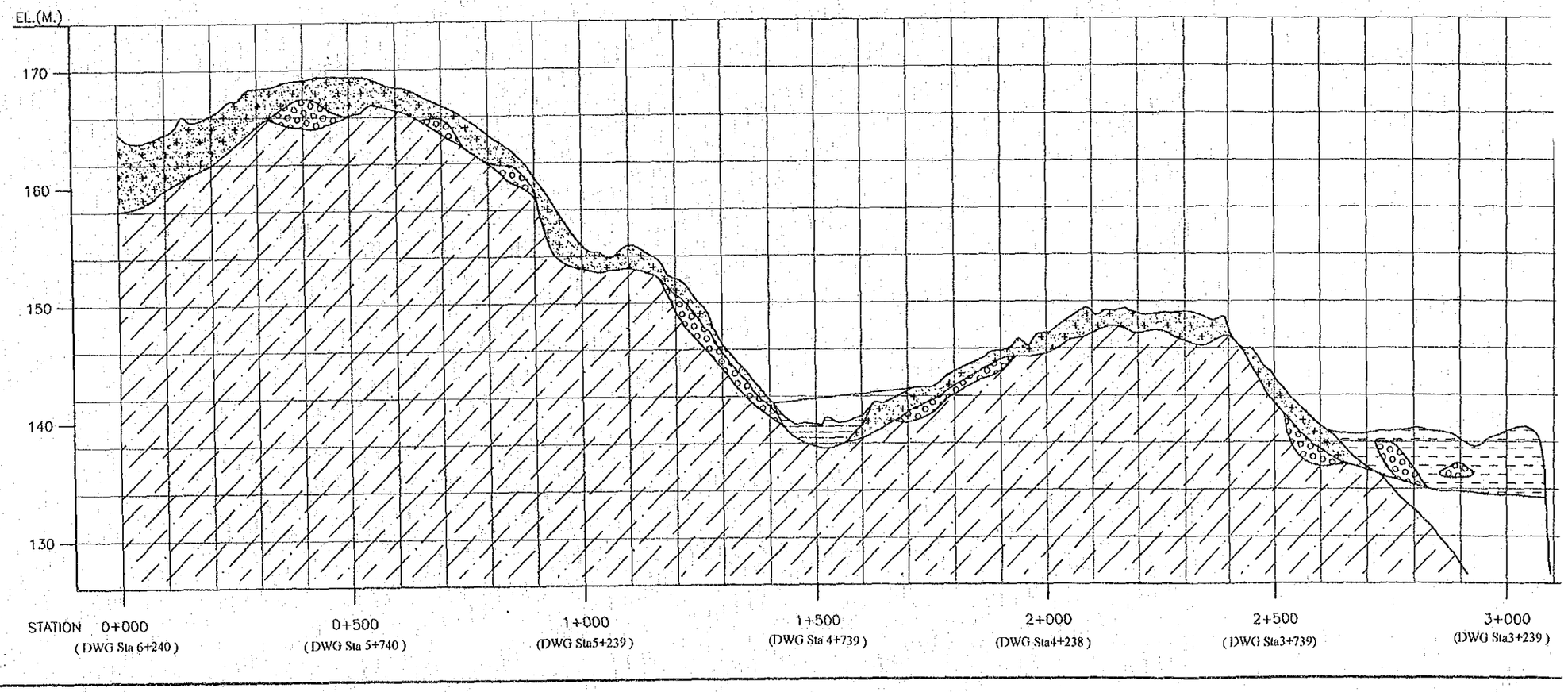
No.	Borehole No.	Depth (m)	Type Of Soil	SPT-Value	Ep (Kg/cm2)	Remarks
1	BS-2	3	Clay	16	48.08	
2		7	Sandy clay	24	42.90	
3		12	Sanstone		3,735.92	
4	BS-1	3	Clay	28	78.69	
5		7	Sandy clay	21	95.23	
6		11	Sanstone			
7		15	Sanstone			
8	BR-6	3	Sanstone		4,610.21	+6.17 m.
9		5	Sanstone		4,149.36	+7.17 m.
10	BR-5	3	Sand	27	44.99	+3.60 m.
11		6	Mudstone		5,985.05	
12		10	Sandstone		3,733.58	
13	BR-4	4	Sand	>50	52.06	+4.50 m.
14		7	Sanstone		5,338.52	+4.50 m.
15		9.4	Sanstone		4,024.07	+4.50 m.
16	BR-3	4	Sand	25	22.55	+3.00 m.
17		7	Mudstone		4,267.19	+3.00 m.
18		9	Mudstone		4,090.87	+4.00 m.
19	BR-2	4	Gravel	>50	1,171.72	+3.00 m.
20		7	Sandstone		6,077.05	+4.10 m.
21	BM-2	4	Clay	8	61.03	
22		8	Sndy clay	8	46.35	
23		12	Mudstone		3,462.01	
24		16	Mudstone		3,721.54	
25	BM-1	2.5	Clay	17	171.72	
26		10	Sandy clay	14	153.73	
27		17	Mudstone		4,651.92	

Note : + height of water level from staging

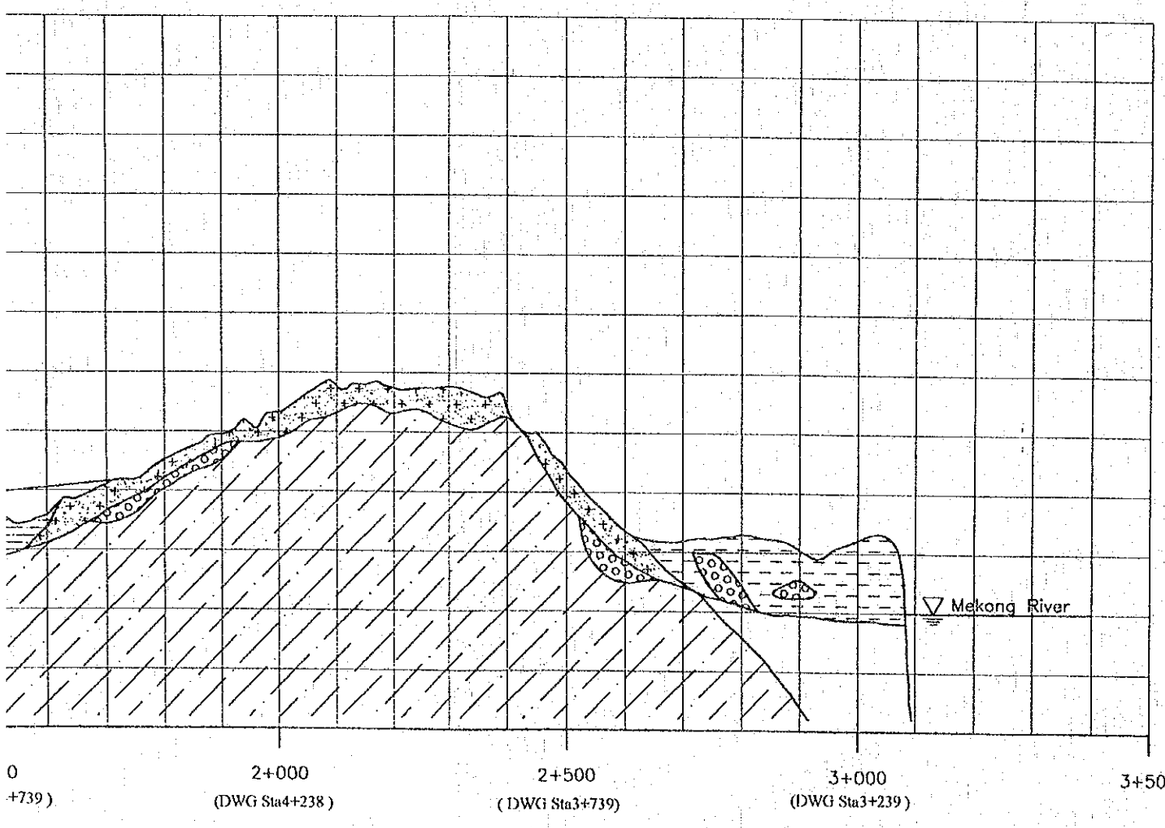
A. Soil and Aggregate Material Test

A2. Auger Boring Logs and Dynamic Cone Penetration Test Data

GEOLOGICAL PROFILE OF PROPOSED APPROACH ROAD AT SAVANNAKHET SI



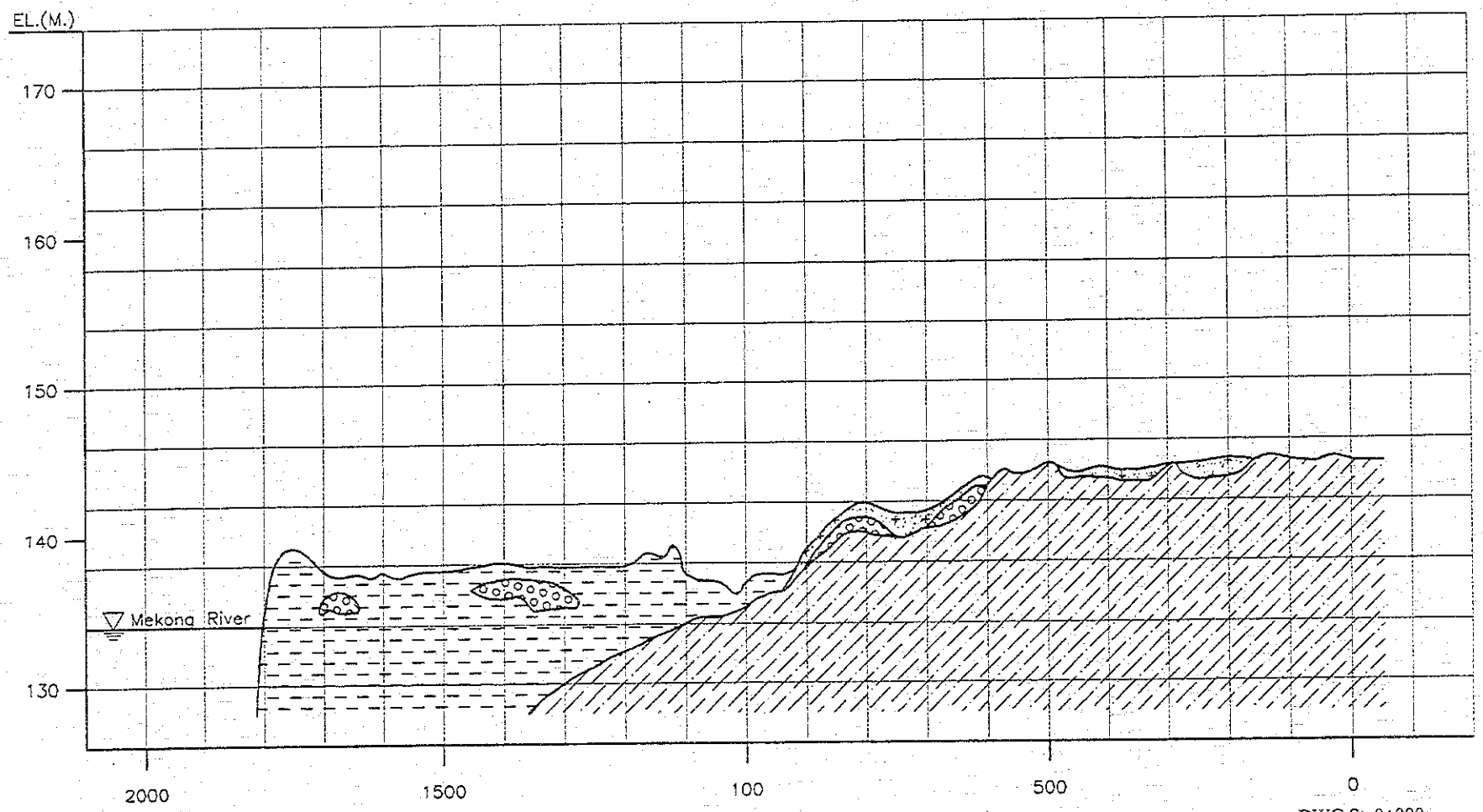
PROFILE OF PROPOSED APPROACH ROAD AT SAVANNAKHET SIDE



EXPLANATION

GEOLOGICAL TYPE	
Terrace/Back Marsh Deposite	clay, medium stiff
Erosion Deposite	Sandy clay, soft
LOESS, WIND Deposite	Silty sand, very loose
	Lat eritic soil, very stiff
Decomposed Rock	Clay, sandy clay, clayey sand very stiff

GEOLOGICAL PROFILE OF PROPOSED APPROACH ROAD AT MUKDAHARN SIDE



HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
	From Point O	Top soil	1st Layer	2nd Layer		
HAS-37	1+150	Sand	Silty sand		3.00	3.00
		brown	light brown			
		0.00-1.80 m.	1.80-3.00 m.			
HAS-38	1+100	Clayey sand	Silty sand		3.00	2.40
		orangish brown	brown			
		0.00-1.80 m.	1.80-3.00 m.			
HAS-39	1+050	Sand	Clayey sand		3.00	1.65
		light grayish brown	yellowish brown			
		0.00-1.20 m.	1.20-3.00 m.			
HAS-40	1+000	Clayey sand	Clayey sand	Clayey sand	3.00	3.00
		grayish brown	yellowish brown	yellowish brown		
		0.00-0.90 m.	0.90-1.95 m.	1.95-3.00 m.		
HAS-41	0+950	Clayey sand	Clayey sand	Clayey sand	3.00	3.00
		orangish brown	light brown	light brown		
		0.00-1.50 m.	1.50-2.20 m.	2.20-3.00 m.		
HAS-42	0+900	Silty sand	Lateritic silty sand	Lateritic clay	3.00	1.35
		brown	brown	reddish brown		
		0.00-0.45 m.	0.45-1.00 m.	1.00-3.00 m.		
HAS-43	0+850	Silty sand	Lateritic silty clay		3.00	1.80
		orangish brown	reddish brown			
		0.00-0.50 m.	0.50-3.00 m.			
HAS-44	0+800	Clayey silt	Lateritic clayey silt		3.00	3.00
		brown	reddish brown			
		0.00-1.30 m.	1.30-3.00 m.			
HAS-45	0+750	Silty sand	Clayey sand		3.00	3.00
		orangish brown	orangish brown			
		0.00-2.40 m.	2.40-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
	From Point O	Top soil	1st Layer	2nd Layer		
HAS-46	0+700	Clayey sand	Lateritic clayey sand		3.00	2.85
		orangish brown	orangish brown			
		0.00-1.00 m.	1.00-3.00 m.			
HAS-47	0+650	Clayey sand	Clayey sand		3.00	3.00
		orangish brown	orangish brown			
		0.00-2.10 m.	2.10-3.00 m.			
HAS-48	0+600	Sand	Clayey sand		3.00	2.25
		light brown	yellowish brown			
		0.00-1.70 m.	1.70-3.00 m.			
HAS-49	0+550	Sand	Clayey sand		3.00	2.25
		orangish brown	orangish brown			
		0.00-2.00m.	2.00-3.00 m.			
HAS-50	0+500	Organic sand	Clayey sand		3.00	3.00
		brown	orangish brown			
		0.00-0.20m.	0.20-3.00 m.			
HAS-51	0+450	Sand	Silty sand	Lateritic silty sand	3.00	3.00
		light orangish brown	orangish brown	orangish brown		
		0.00-0.50 m.	0.50-2.30 m.	2.30-3.00 m.		
HAS-52	0+400	Organic silty sand	Silty sand	Lateritic silty sand	3.00	3.00
		brown	orangish brown	orangish brown		
		0.00-0.30 m.	0.30-1.50 m.	1.50-3.00 m.		
HAS-53	0+350	Clayey sand	Lateritic silty sand		3.00	3.00
		orangish brown	orangish brown			
		0.00-2.40 m.	2.40-3.00 m.			
HAS-54	0+300	Clayey sand			3.00	3.00
		orangish brown				
		0.00-3.00 m.				

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location From Point O	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
HAS-19	2+050	Sand	Sand	Clayey sand	3.00	3.00
		light orangish brown	light brown	light brown		
		0.00-0.50 m.	0.50-1.50 m.	1.50-3.00 m.		
HAS-20	2+000	Sand	Sand	Clayey sand	3.00	2.85
		light orangish brown	light brown	light brown		
		0.00-0.60m.	0.60-1.50m.	1.50-3.00		
HAS-21	1+950	Clayey sand	Clayey sand	Sand	3.00	1.35
		light brown	yellowish brown	light orangish brown		
		0.00-0.35 m.	0.35-0.90 m.	0.90-3.00 m.		
HAS-22	1+900	Sand	Lateritic clayey sand	Clayey sand	3.00	2.10
		light orangish brown	brown	orangish brown		
		0.00-0.50 m.	0.50-1.30 m.	1.30-3.00 m.		
HAS-23	1+850	Sand	Lateritic clayey sand	Clayey sand	3.00	2.85
		light orangish brown	brown	yellowish brown		
		0.00-0.75 m.	0.75-1.05m.	1.05-3.00 m.		
HAS-24	1+800	Sand	Lateritic clayey sand	Clayey sand	3.00	1.50
		light orangish brown	brown	orangish brown		
		0.00-1.00 m.	1.00-1.50 m.	1.50-3.00 m.		
HAS-25	1+750	Sand	Lateritic clayey sand	Silty sand	3.00	1.80
		light orangish brown	brown	reddish brown		
		0.00-0.90 m.	0.90 - 1.50 m.	1.50-3.00 m.		
HAS-26	1+700	Sand	Lateritic clayey sand		3.00	2.10
		light orangish brown	brown			
		0.00-1.50 m.	1.50-3.00 m.			
HAS-27	1+650	Sand	Clayey sand		3.00	2.55
		light orangish brown	light brown			
		0.00-1.80 m.	1.80-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location From Point O	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
HAS-28	1+600	Sand	Clayey sand		3.00	3.00
		light orangish brown	light brown			
		0.00-1.00 m.	1.00-3.00 m.			
HAS-29	1+550	Clayey sand	Clayey sand		3.00	3.00
		light brown	yellowish brown			
		0.00-1.80	1.80-3.00			
HAS-30	1+500	Clayey sand	Clayey sand		3.00	3.00
		light brown	yellowish brown			
		0.00-1.80 m.	1.80-3.00 m.			
HAS-31	1+450	Sandy clay	Sandy clay	Sandy clay	3.00	3.00
		light brown	brown	reddish brown		
		0.00-1.00 m.	1.00-1.50 m.	1.50-3.00 m.		
HAS-32	1+400	Organic sandy clay	Lateritic sandy clay	Sandy clay	3.00	3.00
		dark brown	dark brown	dark brown		
		0.00-0.75 m.	0.75-1.20 m.	1.20-3.00 m.		
HAS-33	1+350	Clayey sand	Sandy clay	Clay	3.00	3.00
		dark brown	brown	reddish brown		
		0.00-0.50 m.	0.50-1.20 m.	1.20-3.00 m.		
HAS-34	1+300	Clayey sand	Lateritic clayey sand	Clayey sand	3.00	3.00
		light brown	brown	light brown		
		0.00-0.80 m.	0.80-1.50 m.	1.50-3.00 m.		
HAS-35	1+250	Clayey sand	Lateritic clayey sand		3.00	3.00
		brown	brown			
		0.00-1.65 m.	1.65-3.00 m.			
HAS-36	1+200	Silty sand	Lateritic clay		3.00	2.10
		light brown	orangish brown			
		0.00-1.35 m.	1.35-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location From Point O	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
HAS-1	2+945	Organic silty	Clay		3.00	3.00
		Clay, brown	light brown			
		0.00-1.00 m.	1.00-3.00 m.			
HAS-2	2+895	Organic clay	Clay	Lateritic clay	3.00	3.00
		brown	brown and orangish	orangish brown		
		0.00-0.50 m.	0.50-2.00 m.	2.00 3.00 m.		
HAS-3	2+845	Organic clay	Clay	Clay	3.00	3.00
		light brown	orangish and	brown		
		0.00-0.50 m.	yellowish brown 0.5-1.80 m.	1.80-3.00 m.		
HAS-4	2+795	Organic clay	Clay	Lateritic clay	3.00	3.00
		light brown	orangish brown	orangish brown		
		0.00-0.75 m.	0.75-2.50m.	2.50-3.00m.		
HAS-5	2+745	Organic clay	Lateritic clay	Clay	3.00	3.00
		light brown	orangish brown	brown and		
		0.00-0.45 m.	0.45-2.30 m.	orangish brown 2.30-3.00 m.		
HAS-6	2+695	Sandy clay	Clay		3.00	3.00
		light brown	orangish brown			
		0.00-1.00 m.	1.00-3.00 m.			
HAS-7	2+645	Sandy clay	Clay		3.00	3.00
		light brown	orangish brown			
		0.00-0.50 m.	0.50-3.00 m.			
HAS-8	2+595	Sandy clay	Lateritic sandy clay		3.00	3.00
		light brown	light brown			
		0.00-2.10 m.	2.10-3.00 m.			
HAS-9	2+545	Sandy clay	Lateritic sandy clay		3.00	3.00
		light brown	brown			
		0.00-2.25 m.	2.25-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location From Point O	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
HAS-10	2+495	Sand	Clayey Sand		3.00	3.00
		light brown	yellowish brown			
		0.00-2.00 m.	2.00-3.00 m.			
HAS-11	2+445	Organic sand	Sand		3.00	1.80
		dark brown	light orangish brown			
		0.00-0.50 m.	0.50-3.00 m.			
HAS12	2+395	Organic sand	Sand	Sand	3.00	2.10
		dark brown	brown	light orangish brown		
		0.00-0.50m.	0.50-2.00m.	2.00-3.00m.		
HAS-13	2+350	Organic sand	Sand	Sand	3.00	2.85
		dark brown	light brown	light orangish brown		
		0.00-0.30 m.	0.30-2.40m.	2.40-3.00m.		
HAS-14	2+300	Sand	Sand		3.00	2.40
		light brown	light orangish brown			
		0.00-0.60 m.	0.60-3.00m.			
HAS-15	2+250	Organic sand	Sand	Silty sand	3.00	2.70
		dark brown	light brown	yellowish brown		
		0.00-0.50 m.	0.50-1.35m.	1.35- 3.00 m.		
HAS-16	2+200	Organic sand	Sand	Clayey sand	3.00	3.00
		dark brown	light brown	light brown		
		0.00-0.60 m.	0.60-1.80 m.	1.80-3.00 m.		
HAS-17	2+150	Silty sand	Silty sand	Clay	3.00	2.70
		orangish brown	yellowish brown	reddish brown		
		0.00-1.40 m.	1.40-2.00 m.	2.00-3.00		
HAS-18	2+100	Organic sand	Clayey sand		3.00	3.00
		brown	light brown			
		0.00-0.50 m.	0.50-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Laos Side (Savannakhet)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
	From Point O	Top soil	1st Layer	2nd Layer		
HAS-55	0+250	Silty sand	Silty sand		3.00	3.00
		brown	orangish brown			
		0.00-1.00 m.	1.00-3.00 m.			
HAS-56	0+200	Organic sand	Sand	Silty sand	3.00	3.00
		dark brown	brown	orangish brown		
		0.00-0.20 m.	0.20-0.60 m.	0.60-3.00 m.		
HAS-57	0+150	Organic sand	Sand	Clayey sand	3.00	3.00
		dark brown	brown	orangish brown		
		0.00-0.30 m.	0.30-1.10 m.	1.10-3.00 m.		
HAS-58	0+100	Silty sand			3.00	3.00
		orangish brown				
		0.00-3.00 m.				
HAS-59	0+050	Silty sand			3.00	3.00
		orangish brown				
		0.00-3.00 m.				
HAS-60	0+010	Lateritic clay	Silty sand		3.00	3.00
		reddish brown	orangish brown			
		0.00-0.60 m.	0.60-3.00 m.			
TOTAL					180.00	162.30

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Thai Side (Mukdaharn)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
	From Sta.0+000	Top soil	1st Layer	2nd Layer		
HAM-1A	1+500	Silty sand	Lateritic silty sand		3.00	3.60
		brown	brown			
		0.00-1.50 m.	1.50-3.00 m.			
HAM-1	1+513	Silty sand	Lateritic silty sand		3.00	3.15
		brown	brown			
		0.00-1.50 m.	1.50-3.00 m.			
HAM-2	1+563	Silty clay	Sandy clay		3.00	3.15
		brown	brown			
		0.00-2.80 m.	2.80-3.00 m.			
HAM-3	1+613	Clay	Clay		3.00	3.15
		brown	light brown			
		0.00-1.50 m.	1.50-3.00 m.			
HAM-4	1+663	Clay	Clay		3.00	3.60
		grayish brown	orangish brown			
		0.00-0.50 m.	0.50-3.00 m.			
HAM-5	1+713	Clay	Clay	Clay	3.00	3.15
		brown	light brown	brown		
		0.00-1.000 m.	1.00-2.50 m.	2.50-3.00 m.		
HAM-6	1+763	Clay	Lateritic sandy clay	Clay	3.00	3.60
		light brown	brown	brown		
		0.00-1.50 m.	1.50-2.10 m.	2.10-3.00 m.		
HAM-7	1+813	Clay	Lateritic clay	Clay	3.00	3.15
		light brown	brown	orangish brown		
		0.00-1.20 m.	1.20-2.00 m.	2.00-3.00 m.		
HAM-8	1+863	Clay	Lateritic clay		3.00	3.60
		light organgish	orangish brown			
		brown				
		0.00-1.00 m.	1.00-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Thai Side (Mukdaharn)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
From Sta.0+000						
HAM-9	1+913	Clay	Lateritic clay		3.00	3.60
		organgish brown	orangish brown			
		0.00-2.10 m.	2.10-3.00 m.			
HAM-10	1+963	Clay	Clay		3.00	3.15
		orangish brown	orangish yellow			
		0.00-1.50 m.	1.50-3.00 m.			
HAM-11	2+013	Clay	Clay		3.00	4.05
		brown	yellowish brown			
		0.00-2.00 m.	2.00-3.00 m.			
HAM-12	2+063	Silty clay	Silty clay	Clay	3.00	3.15
		dark brown	yellowish brown	brown		
		0.00-0.50 m.	0.50-1.00 m.	1.00-3.00 m.		
HAM-13	2+113	Clay	Clay	Silty clay	3.00	3.00
		orangish brown	brown	yellowish brown		
		0.00-1.00 m.	1.00-2.50 m.	2.50-3.00 m.		
HAM-14	2+163	Clay	Sandy clay		3.00	3.60
		gray and orangish	orangish brown			
		brown				
		0.00-2.00 m.	2.00-3.00 m.			
HAM-15	2+213	Silty sand	Clayey sand		3.00	3.60
		light gray	light gray			
		0.00-1.50 m.	1.50-3.00 m.			
HAM-16	2+263	Silty sand	Sandy clay	Clayey silt	3.00	3.60
		light gray	yellowish brown	light gray		
		0.00-0.50 m.	0.50-1.50 m.	1.50-3.00 m.		
HAM-17	2+313	Silty sand	Latterite	Sandy clay	3.00	3.60
		orangish brown	reddish brown	yellowish brown		
		0.00-0.60 m.	0.60-1.10 m.	1.10-3.00 m.		

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Thai Side (Mukdaharn)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
From Sta.0+000						
HAM-18	2+363	Silty sand	Lateritic clay	Sandy clay	3.00	11.25
		orangish brown	reddish brown	orangish brown		
		0.00-0.50 m.	0.50-1.20 m.	1.20-3.00 m.		
HAM-19	2+413	Sand,light	Laterite	Sandy clay	3.00	3.15
		orangish brown	reddish brown	yellowish brown		
		0.00-1.05 m.	1.05-1.65 m.	1.65-3.00 m.		
HAM-20	2+463	Sandy clay	Clay	Clay	3.00	3.60
		yellowish brown	light orangish brown	orangish brown		
		0.00-1.20 m.	1.20-2.50 m.	2.50-3.00 m.		
HAM-21	2+513	Silty sand	Laterite	Silty clay	3.00	10.50
		orangish brown	reddish brown	yellowish brown		
		0.00-0.50 m.	0.50-1.00 m.	1.00-3.00 m.		
HAM-22	2+563	Sand	Lateritic clay	Clay	3.00	3.60
		light organgish	reddish brown	reddish brown		
		brown				
		0.00-0.70 m.	0.70-1.50 m.	1.50-3.00 m.		
HAM-23	2+613	Clay	Clay		3.00	3.15
		light organgish	reddish brown			
		brown				
		0.00-0.50 m.	0.50-3.00 m.			
HAM-24	2+663	Clay	Clay		3.00	10.80
		orangish brown	reddish brown			
		0.00-0.60m.	0.60-3.00 m.			
HAM-25	2+713	Silty sand	Clay		3.00	3.15
		yellowish brown	reddish brown			
		0.00-0.50 m.	0.50-3.00 m.			
HAM-26	2+763	Silty sand	Clay		3.00	3.15
		light brown	reddish brown			
		0.00-0.50 m.	0.50-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Thai Side (Mukdaharn)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
From Sta.0+000						
HAM-27	2+813	Silty sand	Clay		3.00	3.60
		yellowish brown	reddish brown			
		0.00-0.70 m.	0.70-3.00 m.			
HAM-28	2+863	Sandy clay	Clay	Clay	3.00	3.60
		orangish brown	reddish brown	yellowish and		
		0.00-1.00 m.	1.00-2.50 m.	orangish brown 2.50-3.00 m.		
HAM-29	2+913	Clay	Clay		3.00	3.60
		reddish brown	orangish brown			
		0.00-2.50 m.	2.50-3.00 m.			
HAM-30	2+9630	Sandy clay	Clay	Clay	3.00	3.60
		orangish brown	reddish brown	orangish brown		
		0.00-0.80 m.	0.80-2.50 m.	2.50-3.00 m.		
HAM-31	3+013	Sand	Clay		3.00	3.60
		light organgish	orangish brown			
		brown				
		0.00-1.20 m.	1.20-3.00 m.			
HAM-32	3+063	Sandy clay	Clay		3.00	3.60
		light brown	orangish brown			
		0.00-1.00 m.	1.00-3.00 m.			
HAM-33	3+113	Clay			3.00	3.15
		orangish brown				
		0.00-3.00 m.				
HAM-34	3+163	Clay	Clay		3.00	3.15
		yellowish brown	orangish brown			
		0.00-1.00 m.	1.00-3.00 m.			

HAND AUGER BORING

THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

Thai Side (Mukdaharn)

Hand Auger No.	Location	Material Encountered			Final Length (m)	DCPT Depth (m)
		Top soil	1st Layer	2nd Layer		
From Sta.0+000						
HAM-35	3+213	Clay	Clay		3.00	3.15
		yellowish brown	orangish brown			
		0.00-1.00 m.	1.00-3.00 m.			
TOTAL					108.00	144.90

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-1*	STATION : *2+945*	LOCATION : *SAVANNAKHET*
DATE : *06/05/99*	DEPTH : *3.00* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 30
0.15	1	Organic silty clay, brown, soft.	
0.30	1		
0.45	1		
0.60	2		
0.75	2		
0.90	2		
1.05	2		
1.20	3	Clay, light brown, medium stiff.	
1.35	3		
1.50	3		
1.65	3		
1.80	3		
1.95	3		
2.10	4		
2.25	4		
2.40	4		
2.55	4		
2.70	5		
2.85	5		
3.00	5		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-2*	STATION : *2+895*	LOCATION : *SAVANNAKHET*
DATE : *07/05/99*	DEPTH : *3.00* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 30
0.15	1	Organic clay, brown, soft.	
0.30	1		
0.45	1		
0.60	1		
0.75	2	Clay, light brown, soft.	
0.90	2		
1.05	3		
1.20	3	Clay, orangish brown, medium	
1.35	4	to stiff.	
1.50	6		
1.65	6		
1.80	6		
1.95	7		
2.10	7		
2.25	7	Latteritic clay, orangish brown,	
2.40	7	stiff.	
2.55	7		
2.70	8		
2.85	8		
3.00	8		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-3*	STATION :	*2+845*	LOCATION :	*SAVANNAKHET*
DATE :	*07/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 30
0.15	0.5	Organic clay, light brown, very soft.	
0.30	0.5		
0.45	0.5		
0.60	0.5		
0.75	2	Clay, light orangish and yellowish brown, medium soft.	
0.90	2		
1.05	3		
1.20	3		
1.35	2		
1.50	3		
1.65	3		
1.80	3		
1.95	7	Clay, brown, stiff.	
2.10	7		
2.25	6		
2.40	6		
2.55	7		
2.70	6		
2.85	7		
3.00	6		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-4*	STATION :	*2+795*	LOCATION :	*SAVANNAKHET*
DATE :	*08/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 30
0.15	0.2	Organic clay, light brown, very soft.	
0.30	0.2		
0.45	0.2		
0.60	0.2		
0.75	0.2		
0.90	0.5	Clay, orangish brown, medium stiff.	
1.05	0.5		
1.20	2		
1.35	2		
1.50	3		
1.65	3		
1.80	3		
1.95	3		
2.10	4		
2.25	4		
2.40	3		
2.55	3		
2.70	3	Latteritic clay, orangish brown, medium stiff.	
2.85	4		
3.00	4		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-5*	STATION : *2+745*	LOCATION : *SAVANNAKHET*
DATE : *08/05/99*	DEPTH : *3.00* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Organic clay, light brown, soft.	
0.30	2		
0.45	2		
0.60	2	Latteritic clay, orangish brown,	
0.75	4	stiff to very stiff.	
0.90	5		
1.05	8		
1.20	9		
1.35	9		
1.50	9		
1.65	10		
1.80	9		
1.95	10		
2.10	10		
2.25	10		
2.40	9		
2.55	9	Clay, orangish brown, very	
2.70	9	stiff.	
2.85	9		
3.00	9		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-6*	STATION : *2+695*	LOCATION : *SAVANNAKHET*
DATE : *08/05/99*	DEPTH : *3.00* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	2	Sandy clay, light brown, fine	
0.30	2	grain, medium stiff.	
0.45	3		
0.60	3		
0.75	5		
0.90	5		
1.05	8		
1.20	7	Clay, orangish brown, stiff.	
1.35	7		
1.50	6		
1.65	7		
1.80	7		
1.95	8		
2.10	7		
2.25	7		
2.40	7		
2.55	7		
2.70	7		
2.85	7		
3.00	7		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

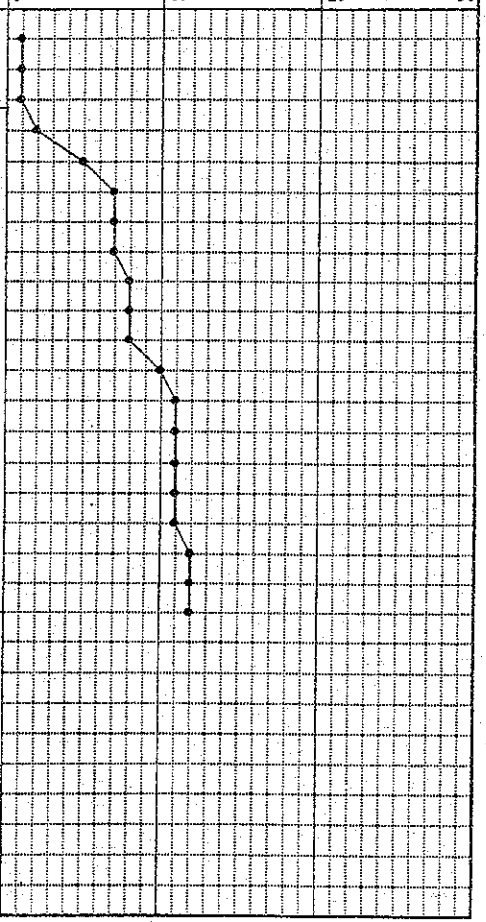
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-7*	STATION :	*2+645*	LOCATION :	*SAVANNAKHET*
DATE :	*11/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION
0.15	1	Sandy clay, light brown, fine grain, soft.
0.30	1	
0.45	1	
0.60	2	
0.75	5	Clay, orangish brown, stiff to very stiff.
0.90	7	
1.05	7	
1.20	7	
1.35	8	
1.50	8	
1.65	8	
1.80	10	
1.95	11	
2.10	11	
2.25	11	
2.40	11	
2.55	11	
2.70	12	
2.85	12	
3.00	12	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

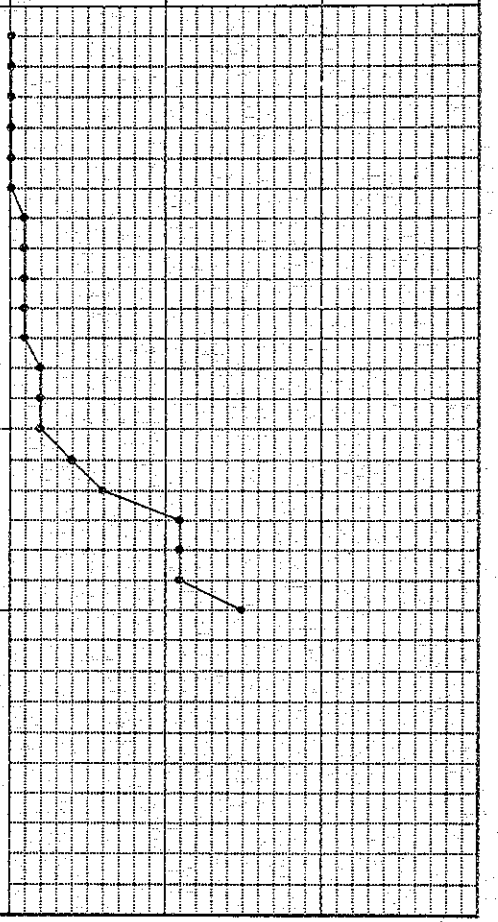
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-8*	STATION :	*2+595*	LOCATION :	*SAVANNAKHET*
DATE :	*12/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION
0.15	0.17	Sandy clay, light brown, fine grain, very soft to soft.
0.30	0.17	
0.45	0.17	
0.60	0.17	
0.75	0.17	
0.90	0.17	
1.05	1	
1.20	1	
1.35	1	
1.50	1	
1.65	1	
1.80	2	
1.95	2	
2.10	2	
2.25	4	Latteritic sandy clay, light brown, fine to medium grain, stiff.
2.40	6	
2.55	11	
2.70	11	
2.85	11	
3.00	15	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

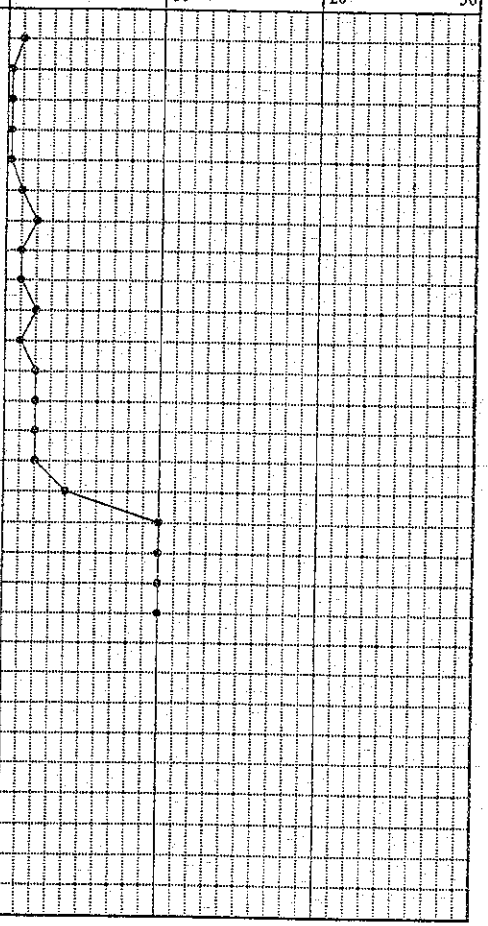
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-9*	STATION	: *2+545*	LOCATION	: *SAVANNAKHET*
DATE	: *12/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Sandy clay, light brown, fine grain, very soft to soft.
0.30	0.25	
0.45	0.25	
0.60	0.25	
0.75	0.25	
0.90	1	
1.05	2	
1.20	1	
1.35	1	
1.50	2	
1.65	1	
1.80	2	
1.95	2	
2.10	2	
2.25	2	
2.40	4	Latteritic sandy clay, yellowish and orangish brown, fine grain, stiff.
2.55	10	
2.70	10	
2.85	10	
3.00	10	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

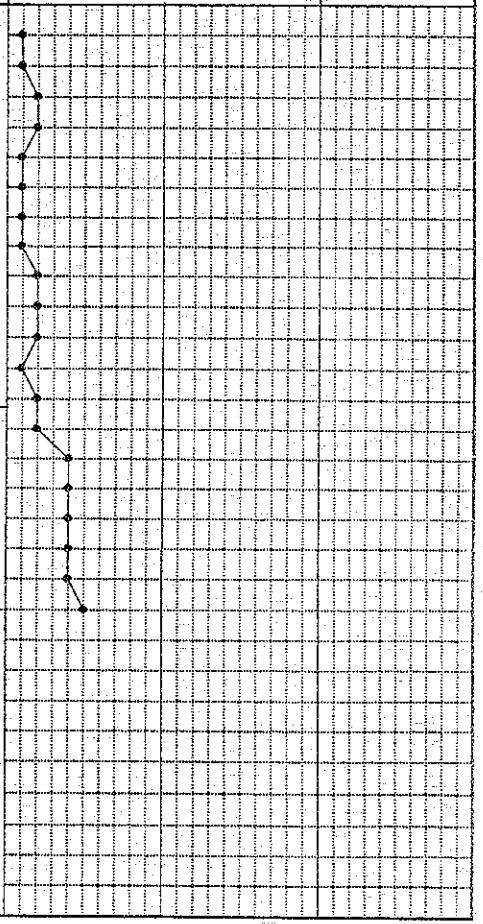
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-10*	STATION	: *2+495*	LOCATION	: *SAVANNAKHET*
DATE	: *12/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Sand, light brown, fine to medium grain, very loose.
0.30	1	
0.45	2	
0.60	2	
0.75	1	
0.90	1	
1.05	1	
1.20	1	
1.35	2	
1.50	2	
1.65	2	
1.80	1	
1.95	2	
2.10	2	
2.25	4	Sand with some clay, yellowish brown, fine to medium grain, loose.
2.40	4	
2.55	4	
2.70	4	
2.85	4	
3.00	5	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-11*	STATION :	*2+445*	LOCATION :	*SAVANNAKHET*
DATE :	*12/05/99*	DEPTH :	*1.80* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Organic sand, dark brown, very loose.	
0.30	1		
0.45	2		
0.60	3		
0.75	3	Sand, light orangish brown, fine to medium grain, loose.	
0.90	3		
1.05	4		
1.20	10	dense to very dense.	
1.35	28		
1.50	30		
1.65	38		
1.80	50/12 cm.		
1.95			
2.10			
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-12*	STATION :	*2+395*	LOCATION :	*SAVANNAKHET*
DATE :	*12/05/99*	DEPTH :	*2.10* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Organic sand, dark brown, fine grain, very loose.	
0.30	0.5		
0.45	0.5		
0.60	0.5		
0.75	0.5	Sand, brown, fine grain, very loose.	
0.90	2		
1.05	1		
1.20	1		
1.35	1		
1.50	4	dense to very dense.	
1.65	12		
1.80	19		
1.95	38		
2.10	50/7 cm.		
2.25		Sand, light orangish brown, fine to medium grain, very stiff.	
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

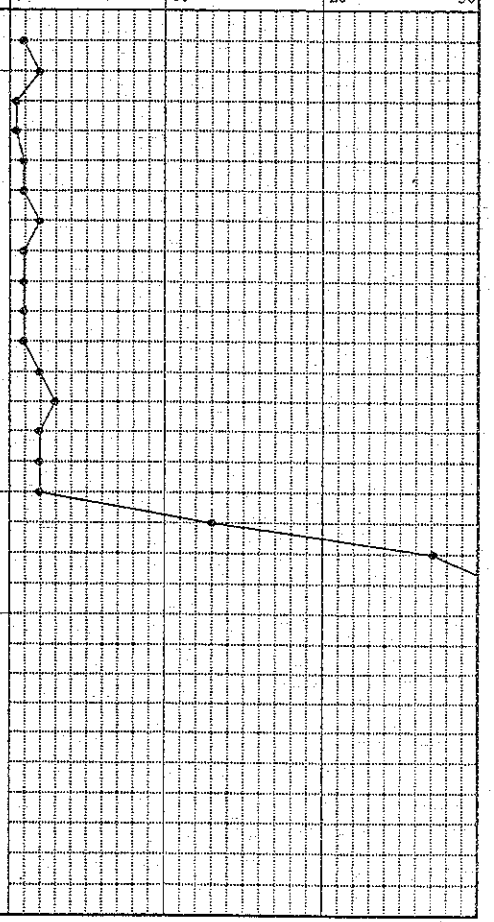
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-13*	STATION	: *2+350*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *2.85* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Organic sand, dark brown,
0.30	2	fine grain, very loose.
0.45	0.5	Sand, light brown, fine grain,
0.60	0.5	very loose.
0.75	1	
0.90	1	
1.05	2	
1.20	1	
1.35	1	
1.50	1	
1.65	1	
1.80	2	
1.95	3	
2.10	2	
2.25	2	
2.40	2	
2.55	13	Sand, light orangish brown, fine
2.70	27	to medium grain, very dense.
2.85	30/7 cm.	
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

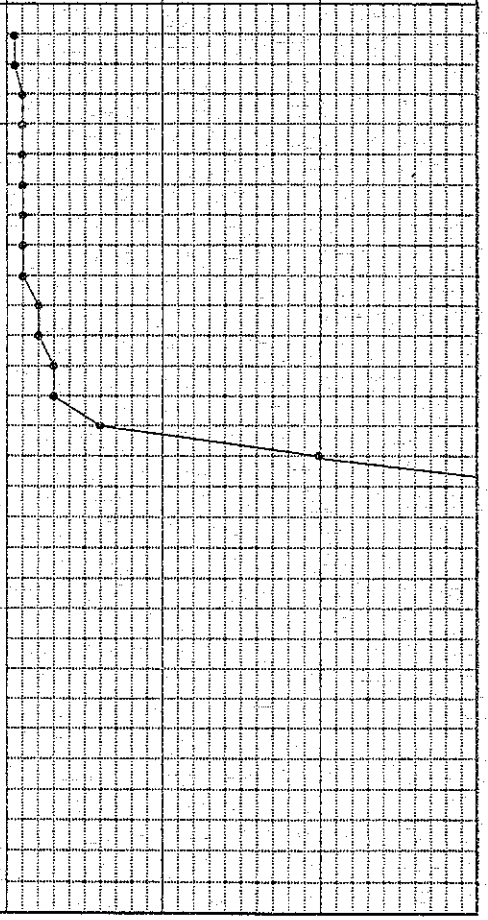
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-14*	STATION	: *2+300*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *2.40* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	0.5	Sand, light brown, fine grain,
0.30	0.5	very loose.
0.45	1	
0.60	1	
0.75	1	Sand, light orangish brown, fine
0.90	1	grain.
1.05	1	
1.20	1	
1.35	1	
1.50	2	very loose to loose.
1.65	2	
1.80	3	
1.95	3	
2.10	6	
2.25	20	
2.40	32/7 cm.	
2.55		dense to very dense.
2.70		
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

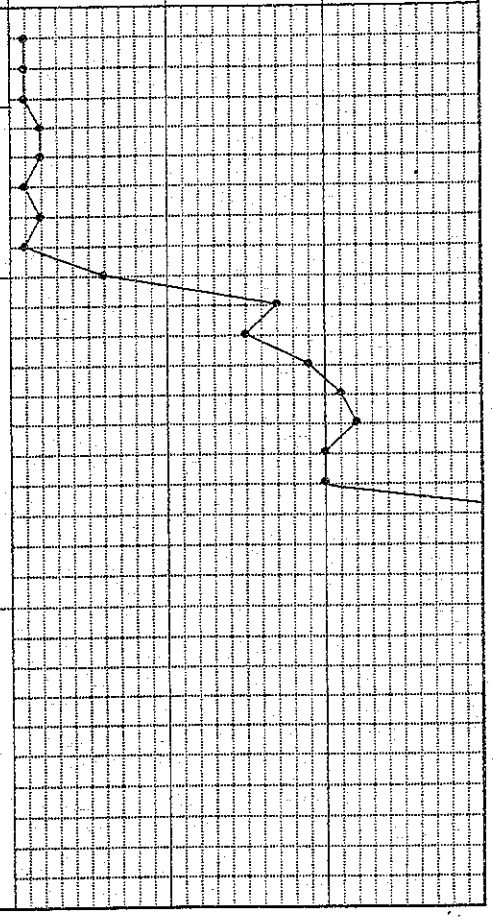
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-15*	STATION	: *2+250*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *2.70* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Organic sand, dark brown, fine
0.30	1	grain, very loose.
0.45	1	
0.60	2	
0.75	2	Sand, light brown, fine to
0.90	1	medium grain, very loose.
1.05	2	
1.20	1	
1.35	6	
1.50	17	Silty sand, yellowish brown,
1.65	15	fine grain.
1.80	19	
1.95	21	
2.10	22	
2.25	20	
2.40	20	
2.55	36	
2.70	51/13 cm.	
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

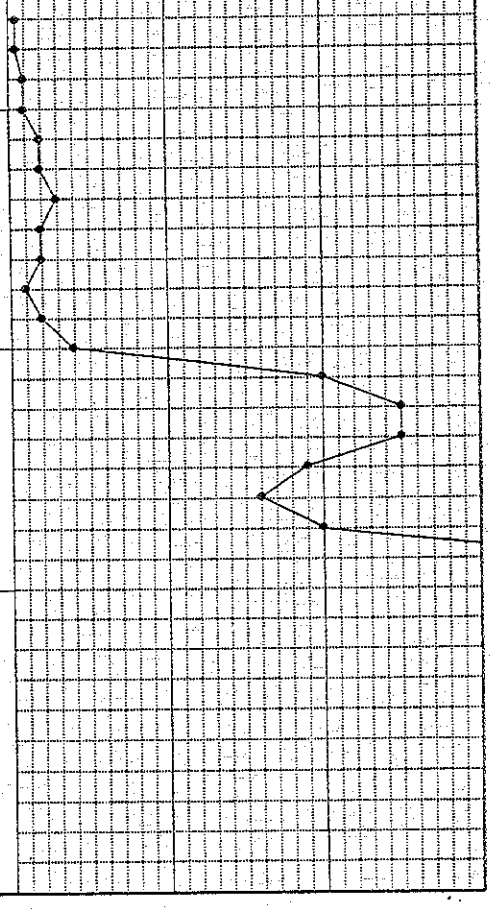
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-16*	STATION	: *2+200*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	0.5	Organic sand, dark brown, fine
0.30	0.5	grain, very loose.
0.45	1	
0.60	1	
0.75	2	Sand, light brown, fine grain,
0.90	2	very loose.
1.05	3	
1.20	2	
1.35	2	
1.50	1	
1.65	2	
1.80	4	
1.95	20	Clayey sand, light brown, fine
2.10	25	grain, dense.
2.25	25	
2.40	19	
2.55	16	
2.70	20	
2.85	40	
3.00	10/1 cm.	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

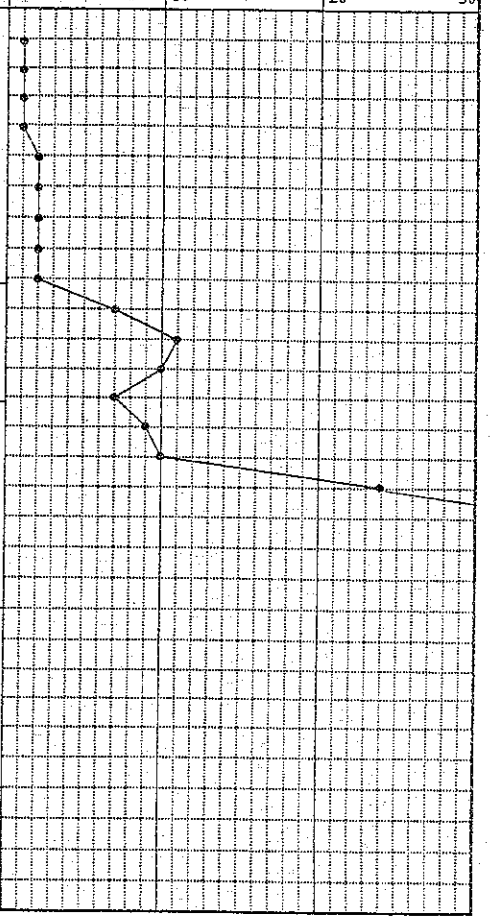
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-17*	STATION	: *2+150*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *2.70* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N. BLOWS/15CM	DESCRIPTION
0.15	1	Silty sand, orangish brown, fine
0.30	1	to medium grain, very loose.
0.45	1	
0.60	1	
0.75	2	
0.90	2	
1.05	2	
1.20	2	
1.35	2	
1.50	7	
1.65	11	Silty sand, light yellowish gray,
1.80	10	fine grain, medium dense.
1.95	7	
2.10	9	
2.25	10	Clay, reddish brown, very stiff,
2.40	24	weathered mudstone.
2.55	38	
2.70	18/3 cm.	
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

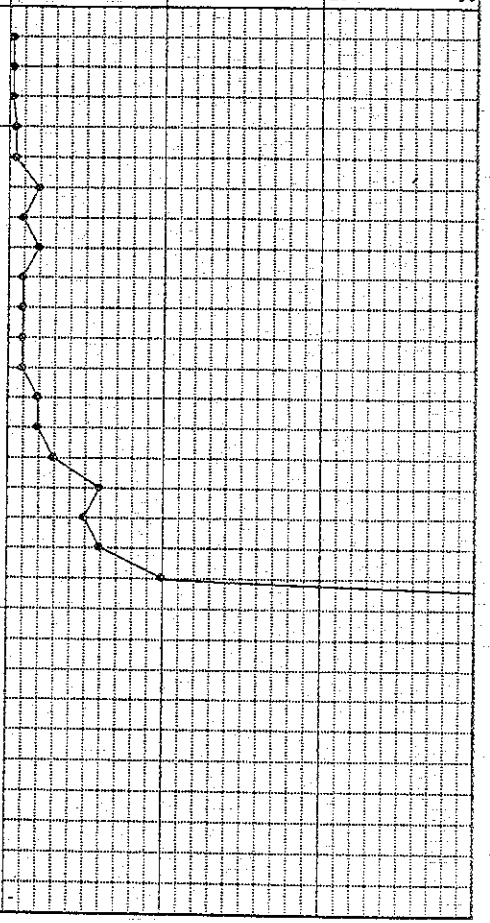
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-18*	STATION	: *2+100*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N. BLOWS/15CM	DESCRIPTION
0.15	0.33	Organic sand, brown, fine grain,
0.30	0.33	very loose.
0.45	0.33	
0.60	0.5	
0.75	0.5	Sand, with some clay, light
0.90	2	brown, fine grain, very loose.
1.05	1	
1.20	2	
1.35	1	
1.50	1	
1.65	1	
1.80	1	
1.95	2	
2.10	2	
2.25	3	
2.40	6	medium dense.
2.55	5	
2.70	6	
2.85	10	
3.00	41/6 cm.	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-19*	STATION	: *2+050*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.33	Sand, light orangish brown, fine grain, very loose.	
0.30	0.33		
0.45	0.33		
0.60	0.33	Sand, light brown, fine to medium grain, very loose.	
0.75	0.33		
0.90	0.33		
1.05	0.25		
1.20	0.25		
1.35	0.25		
1.50	0.25		
1.65	1	Clayey sand, light brown, fine to medium grain loose.	
1.80	2		
1.95	2		
2.10	3		
2.25	4		
2.40	9		
2.55	13		
2.70	5	dense	
2.85	20		
3.00	30/14 cm.		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-20*	STATION	: *2+000*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *2.85* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, light orangish brown, fine grain, very loose.	
0.30	1		
0.45	0.25		
0.60	0.25		
0.75	0.25	Sand, light brown, fine grain, very loose.	
0.90	0.25		
1.05	1		
1.20	1		
1.35	0.5		
1.50	0.5		
1.65	2	Clayey sand, light brown, fine grain, medium dense.	
1.80	3		
1.95	6		
2.10	4		
2.25	6		
2.40	5		
2.55	7		
2.70	8		
2.85	40/7 cm.		
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

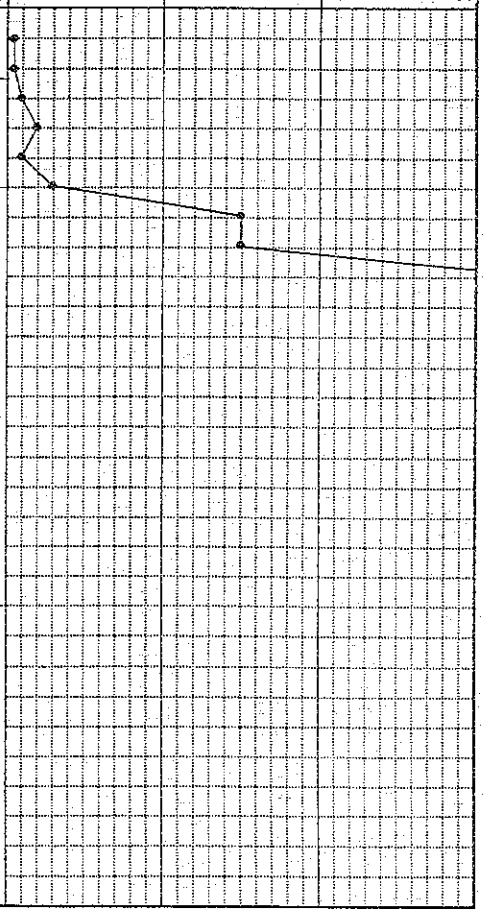
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-21*	STATION	: *1+950*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *1.35* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	0.5	Sand with some clay, light
0.30	0.5	brown, fine grain, very loose.
0.45	1	
0.60	2	Clayey sand, yellowish brown,
0.75	1	fine grain, very loose.
0.90	3	
1.05	15	Sand, light orangish brown, fine
1.20	15	to medium grain, very dense.
1.35	50/13 cm.	
1.50		
1.65		
1.80		
1.95		
2.10		
2.25		
2.40		
2.55		
2.70		
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

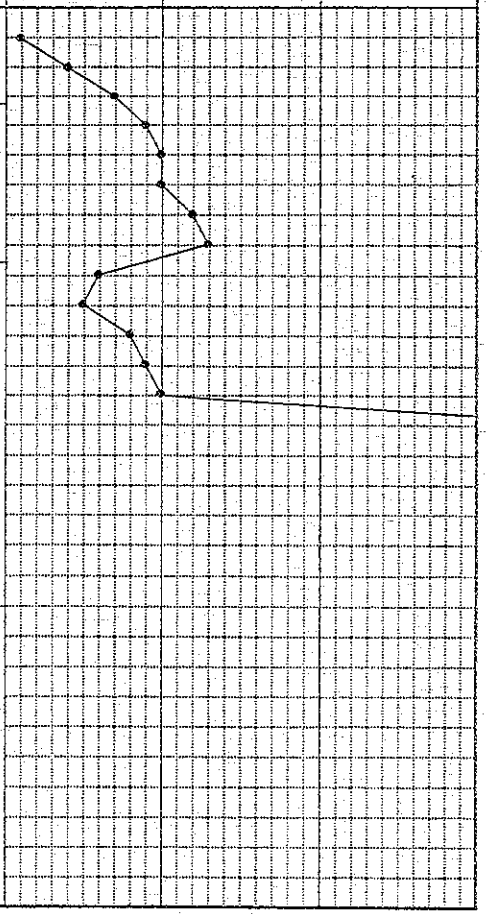
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-22*	STATION	: *1+900*	LOCATION	: *SAVANNAKHET*
DATE	: *20/05/99*	DEPTH	: *2.10* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Sand, light orangish brown, fine
0.30	4	grain, loose.
0.45	7	
0.60	9	
0.75	10	Latteritic clayey sand, brown,
0.90	10	fine to medium grain, medium
1.05	12	dense.
1.20	13	
1.35	6	
1.50	5	Clayey sand, orangish brown,
1.65	8	fine to medium grain, medium
1.80	9	to very dense.
1.95	10	
2.10	40/8 cm.	
2.25		
2.40		
2.55		
2.70		
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

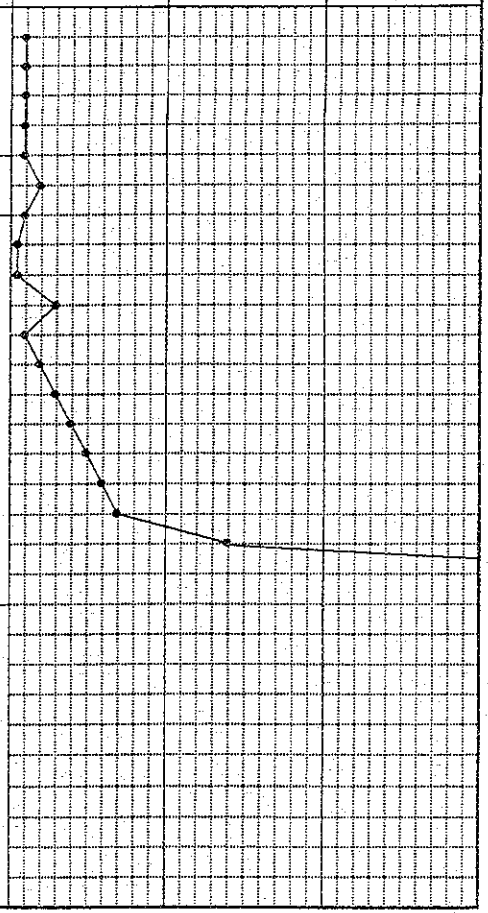
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-23*	STATION : *1+850*	LOCATION : *SAVANNAKHET*
DATE : *21/05/99*	DEPTH : *2.85* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Sand, light orangish brown, fine grain, very loose.
0.30	1	
0.45	1	
0.60	1	
0.75	1	
0.90	2	Latteritic clayey sand, brown, fine grain, very loose.
1.05	1	
1.20	0.5	
1.35	0.5	Clayey sand, yellowish brown, fine grain, loose to medium dense.
1.50	3	
1.65	1	
1.80	2	
1.95	3	
2.10	4	
2.25	5	
2.40	6	
2.55	7	
2.70	14	
2.85	50/9 cm.	
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

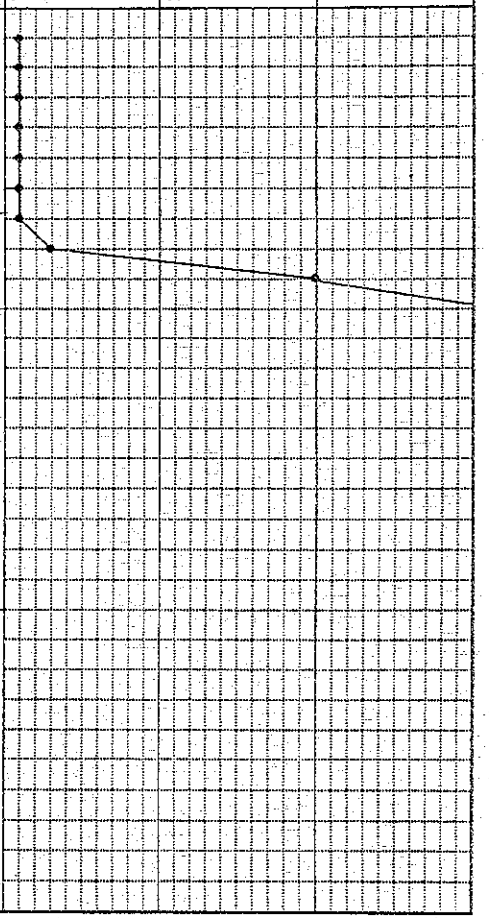
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-24*	STATION : *1+800*	LOCATION : *SAVANNAKHET*
DATE : *21/05/99*	DEPTH : *1.50* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Sand, light orangish brown, fine grain, very loose.
0.30	1	
0.45	1	
0.60	1	
0.75	1	
0.90	1	
1.05	1	
1.20	3	Latteritic clayey sand, light brown, fine grain, dense.
1.35	20	
1.50	30/10 cm.	
1.65		Clayey sand, orangish brown, fine grain, very dense.
1.80		
1.95		
2.10		
2.25		
2.40		
2.55		
2.70		
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-25*	STATION : *1+750*	LOCATION : *SAVANNAKHET*
DATE : *21/05/99*	DEPTH : *1.80* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, light orangish brown, fine grain, very loose.	
0.30	2		
0.45	1		
0.60	1		
0.75	1		
0.90	2		
1.05	4	Latteritic clayey sand, yellowish brown, fine grain, medium dense.	
1.20	3		
1.35	18		
1.50	14		
1.65	11	Silty clay, weathered mudstone, reddish brown, hard.	
1.80	30/5 cm.		
1.95			
2.10			
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-26*	STATION : *1+700*	LOCATION : *SAVANNAKHET*
DATE : *21/05/99*	DEPTH : *2.10* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, light orangish brown, fine grain, very loose.	
0.30	3		
0.45	0.5		
0.60	0.5		
0.75	0.5		
0.90	0.5		
1.05	2		
1.20	1		
1.35	1		
1.50	1		
1.65	14	Latteritic clayey sand, light brown, fine grain, dense to very dense.	
1.80	23		
1.95	31		
2.10	20/6 cm.		
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-27*	STATION :	*1+650*	LOCATION :	*SAVANNAKHET*
DATE :	*21/05/99*	DEPTH :	*2.55* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	2	Sand, light orangish brown, fine grain, very loose.	
0.30	1		
0.45	0.25		
0.60	0.25		
0.75	0.25		
0.90	0.25		
1.05	1		
1.20	0.2		
1.35	0.2		
1.50	0.2		
1.65	0.2		
1.80	0.2		
1.95	2	Clayey sand, light brown, fine grain, medium dense.	
2.10	5		
2.25	5		
2.40	10		
2.55	41/10 cm.	very dense.	
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-28*	STATION :	*1+600*	LOCATION :	*SAVANNAKHET*
DATE :	*21/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.25	Sand, light orangish brown, fine grain, very loose.	
0.30	0.25		
0.45	0.25		
0.60	0.25		
0.75	1		
0.90	1		
1.05	1		
1.20	2	Clayey sand, light brown, fine grain, medium dense.	
1.35	4		
1.50	4		
1.65	7		
1.80	14		
1.95	19		
2.10	8		
2.25	8		
2.40	8		
2.55	9		
2.70	8		
2.85	8		
3.00	12		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-29*	STATION :	*1+550*	LOCATION :	*SAVANNAKHET*
DATE :	*21/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION (0 / 10 / 20 / 30)
0.15	0.25	Sand, with some clay, light brown, fine to medium grain, very loose.	
0.30	0.25		
0.45	0.25		
0.60	0.25		
0.75	2		
0.90	1		
1.05	1		
1.20	1		
1.35	2		
1.50	2		
1.65	4		
1.80	4		
1.95	6	Sand with some clay, light yellowish brown, fine grain, medium dense.	
2.10	6		
2.25	6		
2.40	7		
2.55	8		
2.70	8		
2.85	6		
3.00	7		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-30*	STATION :	*1+500*	LOCATION :	*SAVANNAKHET*
DATE :	*21/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION (0 / 10 / 20 / 30)
0.15	0.33	Clayey sand, light brown, fine grain, very loose.	
0.30	0.33		
0.45	0.33		
0.60	1		
0.75	0.5		
0.90	0.5		
1.05	1		
1.20	1		
1.35	2		
1.50	1		
1.65	2		
1.80	2		
1.95	4	Clayey sand, light yellowish brown, fine grain, medium dense.	
2.10	4		
2.25	5		
2.40	6		
2.55	6		
2.70	7		
2.85	7		
3.00	8		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-31*	STATION	: *1+450*	LOCATION	: *SAVANNAKHET*
DATE	: *21/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.2	Sandy clay, light brown, fine grain, very soft.	
0.30	0.2		
0.45	0.2		
0.60	0.2		
0.75	0.2		
0.90	1		
1.05	1		
1.20	2	Sandy clay, brown, fine to medium grian, soft.	
1.35	3		
1.50	3		
1.65	5	Sandy clay, weathered - mudstone, reddish brown, stiff to very stiff.	
1.80	7		
1.95	9		
2.10	11		
2.25	12		
2.40	13		
2.55	13		
2.70	17		
2.85	15		
3.00	16		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-32*	STATION	: *1+400*	LOCATION	: *SAVANNAKHET*
DATE	: *21/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Organic sandy clay, dark brown, fine to medium grain, very soft.	
0.30	1		
0.45	0.5		
0.60	0.5		
0.75	1		
0.90	9	Latteritic sandy clay, dark brown, fine to medium grain, stiff.	
1.05	13		
1.20	5		
1.35	2	Sandy clay, dark brown, fine to medium grain, medium stiff.	
1.50	3		
1.65	2		
1.80	2		
1.95	3		
2.10	3		
2.25	3		
2.40	3		
2.55	3		
2.70	4		
2.85	4		
3.00	5		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

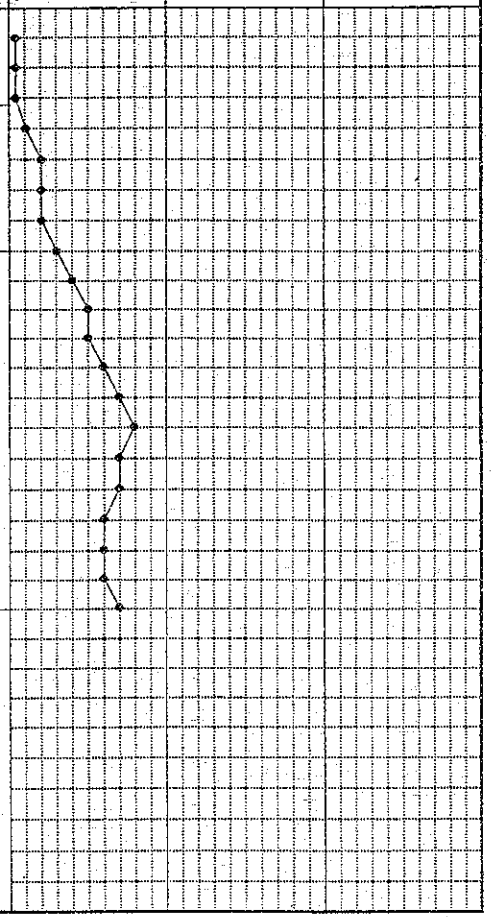
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-33*	STATION	: *1+350*	LOCATION	: *SAVANNAKHET*
DATE	: *21/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	0.33	Clayey sand, dark brown, fine grain, very loose.
0.30	0.33	
0.45	0.33	
0.60	1	
0.75	2	Sandy clay, brown and orangish brown, fine to medium grain, medium stiff.
0.90	2	
1.05	2	
1.20	3	
1.35	4	Clay, weathered mudstone, reddish brown, stiff.
1.50	5	
1.65	5	
1.80	6	
1.95	7	
2.10	8	
2.25	7	
2.40	7	
2.55	6	
2.70	6	
2.85	6	
3.00	7	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

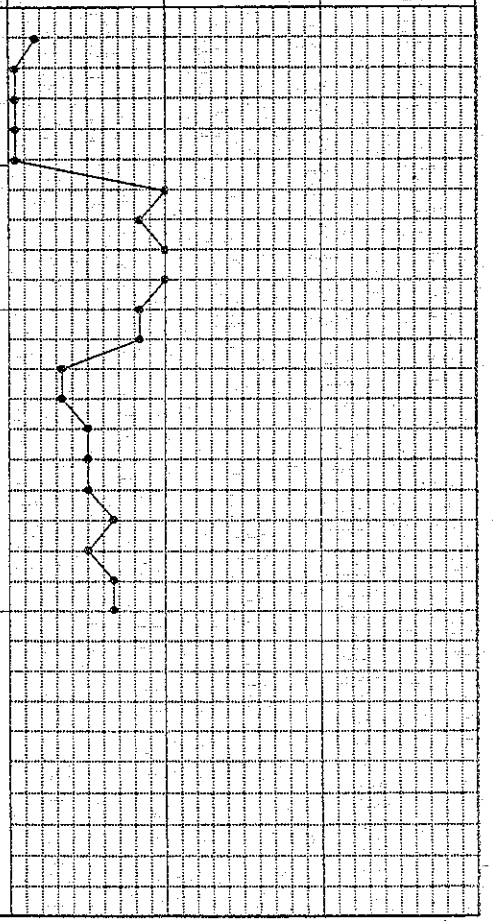
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-34*	STATION	: *1+300*	LOCATION	: *SAVANNAKHET*
DATE	: *21/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Clayey sand, light brown, fine to medium grain, very loose.
0.30	0.25	
0.45	0.25	
0.60	0.25	
0.75	0.25	
0.90	6	Latteritic clayey sand, light brown, fine to medium grain, medium dense.
1.05	5	
1.20	6	
1.35	6	
1.50	5	
1.65	5	Clayey sand, light brown, fine to medium grain, loose.
1.80	2	
1.95	2	
2.10	3	
2.25	3	
2.40	3	
2.55	4	
2.70	3	
2.85	4	
3.00	4	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-35*	STATION : *1+250*	LOCATION : *SAVANNAKHET*
DATE : *21/05/99*	DEPTH : *3.00* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand with some clay, brown, fine to medium grain, very loose.	
0.30	1		
0.45	0.25		
0.60	0.25		
0.75	0.25		
0.90	0.25		
1.05	0.5		
1.20	0.5		
1.35	1		
1.50	2		
1.65	1		
1.80	5	Latteritic clayey sand, light brown, fine to medium grain, medium dense.	
1.95	10		
2.10	7		
2.25	7		
2.40	8		
2.55	8		
2.70	7		
2.85	16		
3.00	25/8 cm.		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAS-36*	STATION : *1+200*	LOCATION : *SAVANNAKHET*
DATE : *21/05/99*	DEPTH : *2.10* M.	TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	5	Silty sand, light brown, fine-grain, medium dense.	
0.30	9		
0.45	10		
0.60	10		
0.75	9		
0.90	10		
1.05	10		
1.20	10		
1.35	11		
1.50	18	Latteritic clay, orangish brown, very stiff.	
1.65	15		
1.80	18		
1.95	29		
2.10	31/6 cm.		
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

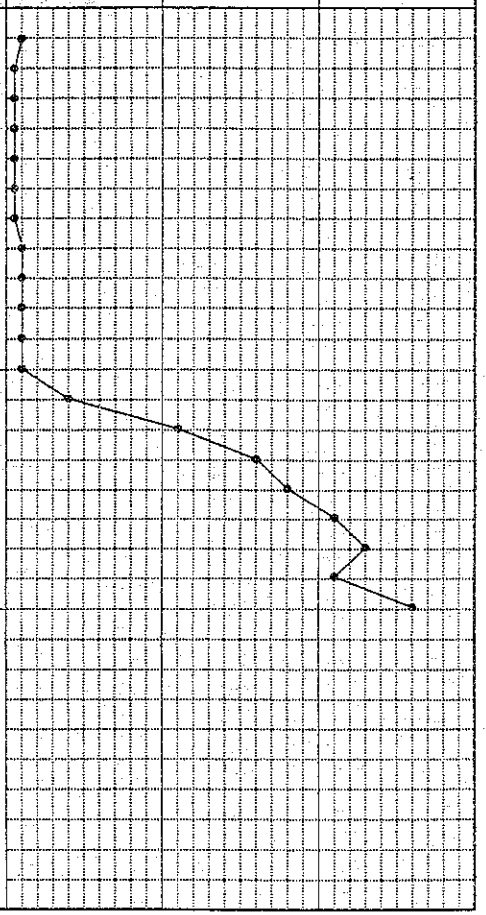
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-37*	STATION	: *1+150*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, brown, fine to medium	
0.30	0.5	grain, very loose.	
0.45	0.5		
0.60	0.5		
0.75	0.5		
0.90	0.5		
1.05	0.5		
1.20	1		
1.35	1		
1.50	1		
1.65	1		
1.80	1		
1.95	4	Silty sand, light brown, fine	
2.10	11	grain, dense.	
2.25	16		
2.40	18		
2.55	21		
2.70	23		
2.85	21		
3.00	26		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



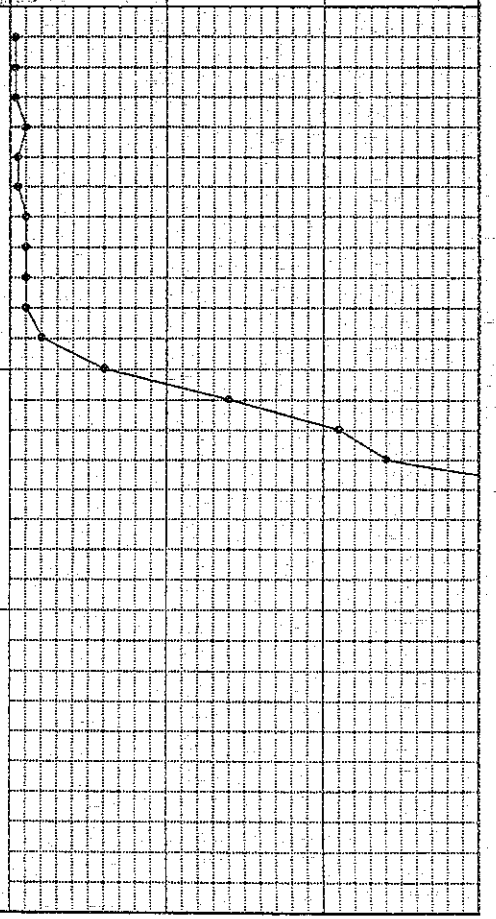
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-38*	STATION	: *1+100*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *2.40* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.33	Sand with some clay, light	
0.30	0.33	orangish brown, fine to medium	
0.45	0.33	grain, very loose.	
0.60	1		
0.75	0.5		
0.90	0.5		
1.05	1		
1.20	1		
1.35	1		
1.50	1		
1.65	2		
1.80	6		
1.95	14	Silty sand, brown, fine grain,	
2.10	21	dense to very dense.	
2.25	24		
2.40	27/13 cm.		
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-39*	STATION	: *1+050*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *1.65* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, light grayish brown, fine	
0.30	2	to medium grain, very loose.	
0.45	1		
0.60	2		
0.75	1		
0.90	1		
1.05	1		
1.20	3		
1.35	12	Clayey sand, light yellowish	
1.50	25	gray, fine grain, dense to very	
1.65	28/12 cm.	dense.	
1.80			
1.95			
2.10			
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-40*	STATION	: *1+000*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.16	Sand with some clay, light	
0.30	0.16	grayish brown, fine grain, very	
0.45	0.16	loose.	
0.60	0.16		
0.75	0.16		
0.90	0.16		
1.05	1	Clayey sand, light yellowish	
1.20	1	gray, fine grain, very loose.	
1.35	1		
1.50	1		
1.65	1		
1.80	2		
1.95	2		
2.10	8	Clayey sand, light yellowish	
2.25	10	brown, fine grain, dense.	
2.40	17		
2.55	19		
2.70	25		
2.85	25		
3.00	29/12 cm.		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-41*	STATION	: *0+950*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.5	Clayey sand, light orangish brown, very fine grain, very loose.	
0.30	0.5		
0.45	1		
0.60	0.33		
0.75	0.33		
0.90	0.33		
1.05	1		
1.20	0.5		
1.35	0.5		
1.50	1		
1.65	1	Clayey sand, light gray, fine grain, very loose.	
1.80	1		
1.95	1		
2.10	1		
2.25	1		
2.40	1	Clayey sand, light brown, fine grain, very loose.	
2.55	1		
2.70	1		
2.85	2		
3.00	2		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-42*	STATION	: *0+900*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *1.35* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, brown, fine grain, very loose.	
0.30	1		
0.45	1		
0.60	4	Latteritic silty sand, brown, fine grain, medium dense.	
0.75	6		
0.90	7		
1.05	7		
1.20	20	Latteritic clay, reddish brown, hard.	
1.35	30/3 cm.		
1.50			
1.65			
1.80			
1.95			
2.10			
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-43*	STATION :	*0+850*	LOCATION :	*SAVANNAKHET*
DATE :	*22/05/99*	DEPTH :	*1.80* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.5	Silty sand, orangish brown, fine grain, very loose.	
0.30	0.5		
0.45	1		
0.60	3	Latteritic silty clay, reddish brown, medium stiff to hard.	
0.75	5		
0.90	5		
1.05	6		
1.20	13		
1.35	12		
1.50	20		
1.65	30		
1.80	20/8 cm.		
1.95			
2.10			
2.25			
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-44*	STATION :	*0+800*	LOCATION :	*SAVANNAKHET*
DATE :	*22/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.2	Clayey silt, brown, very soft.	
0.30	0.2		
0.45	0.2		
0.60	0.2		
0.75	0.2		
0.90	1		
1.05	1		
1.20	1		
1.35	4		
1.50	7	Latteritic clayey silt, reddish brown, stiff to hard.	
1.65	8		
1.80	14		
1.95	19		
2.10	22		
2.25	25		
2.40	22		
2.55	22		
2.70	17		
2.85	15		
3.00	11		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

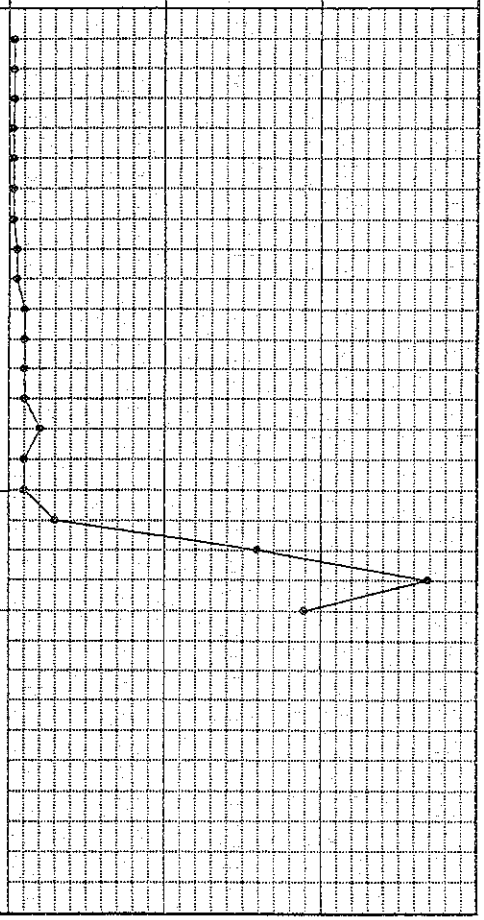
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-45*	STATION	: *0+750*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	0.33	Silty sand, orangish brown, very loose.
0.30	0.33	
0.45	0.33	
0.60	0.25	
0.75	0.25	
0.90	0.25	
1.05	0.25	
1.20	0.5	
1.35	0.5	
1.50	1	
1.65	1	
1.80	1	
1.95	1	
2.10	2	
2.25	1	
2.40	1	
2.55	3	Clayey sand, orangish brown, fine grain, dense.
2.70	16	
2.85	27	
3.00	19	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

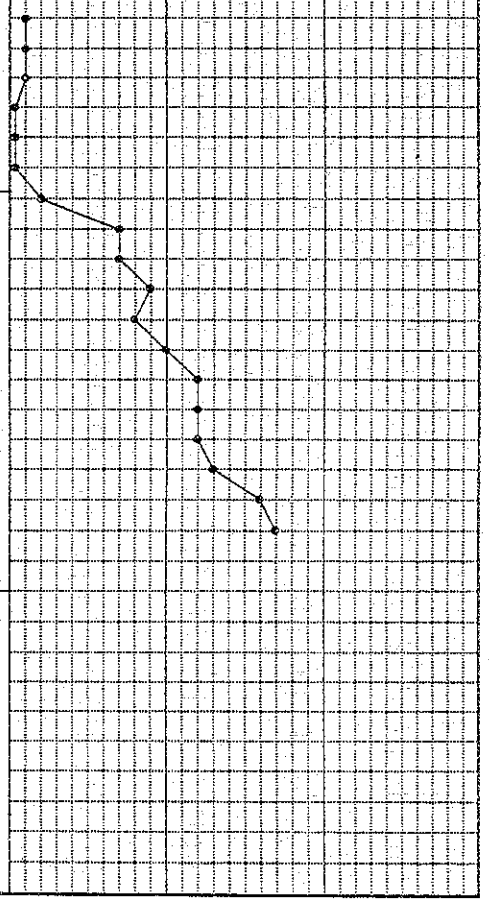
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-46*	STATION	: *0+700*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *2.85* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Clayey sand, orangish brown, very fine grain, very loose.
0.30	1	
0.45	1	
0.60	0.33	
0.75	0.33	
0.90	0.33	
1.05	2	
1.20	7	Latteritic clayey sand, orangish brown, fine grain, medium to dense.
1.35	7	
1.50	9	
1.65	8	
1.80	10	
1.95	12	
2.10	12	
2.25	12	
2.40	13	
2.55	16	
2.70	17	
2.85	35/8 cm.	
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-47*	STATION :	*0+650*	LOCATION :	*SAVANNAKHET*
DATE :	*22/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.25	Clayey sand, orangish brown, fine grain, very loose.	
0.30	0.25		
0.45	0.25		
0.60	0.25		
0.75	0.25		
0.90	0.25		
1.05	0.25		
1.20	0.25		
1.35	1		
1.50	1		
1.65	1		
1.80	1		
1.95	1		
2.10	2		
2.25	3	Clayey sand, orangish brown, very fine grain, medium dense.	
2.40	8		
2.55	11		
2.70	13		
2.85	14		
3.00	15		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-48*	STATION :	*0+600*	LOCATION :	*SAVANNAKHET*
DATE :	*22/05/99*	DEPTH :	*2.25* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.5	Sand, light brown, fine grain, very loose.	
0.30	0.5		
0.45	1		
0.60	0.5		
0.75	0.5		
0.90	1		
1.05	0.5		
1.20	0.5		
1.35	0.5		
1.50	0.5		
1.65	1		
1.80	2		
1.95	3	Clayey sand, yellowish brown, fine grain, very dense.	
2.10	2		
2.25	30/10 cm.		
2.40			
2.55			
2.70			
2.85			
3.00			
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

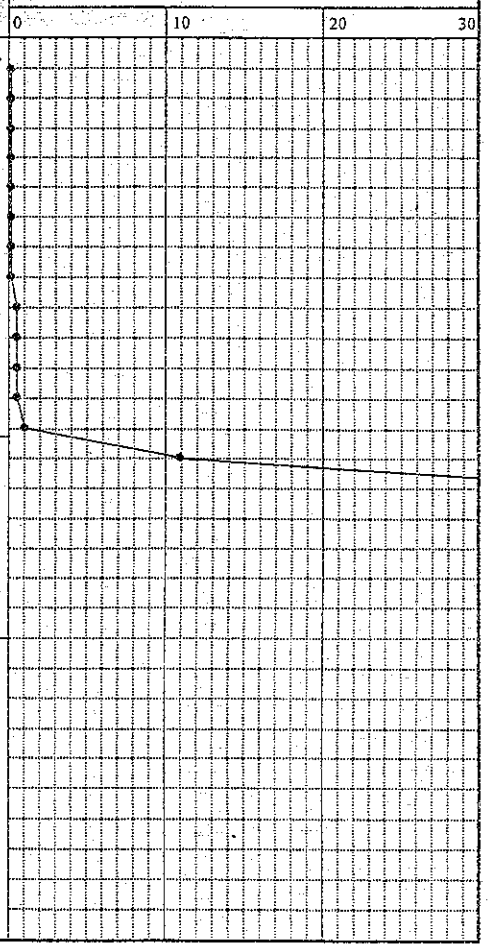
HOLE NO. : *HAS-49* | STATION : *0+550* | LOCATION : *SAVANNAKHET*

DATE : *22/05/99* | DEPTH : *2.25* M. | TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	0.12	Sand, orangish brown, fine grain, very loose.
0.30	0.12	
0.45	0.12	
0.60	0.12	
0.75	0.12	
0.90	0.12	
1.05	0.12	
1.20	0.12	
1.35	0.5	
1.50	0.5	
1.65	0.5	
1.80	0.5	
1.95	1	
2.10	11	
2.25	30/3 cm.	Clayey sand, orangish brown, fine grain, very dense.
2.40		
2.55		
2.70		
2.85		
3.00		
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

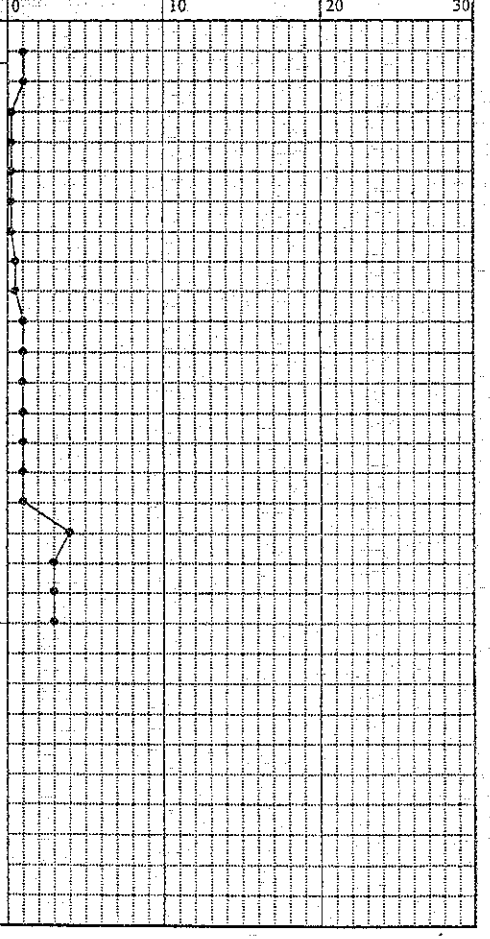
HOLE NO. : *HAS-50* | STATION : *0+500* | LOCATION : *SAVANNAKHET*

DATE : *22/05/99* | DEPTH : *3.00* M. | TEST BY : *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Oraganic sand, brown, fine grain, very loose.
0.30	1	
0.45	0.2	Clayey sand, orangish brown,
0.60	0.2	fine grain, very loose.
0.75	0.2	
0.90	0.2	
1.05	0.2	
1.20	0.5	
1.35	0.5	
1.50	1	
1.65	1	
1.80	1	
1.95	1	
2.10	1	
2.25	1	
2.40	1	
2.55	4	
2.70	3	
2.85	3	
3.00	3	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-51*	STATION	: *0+450*	LOCATION	: *SAVANNAKHET*
DATE	: *22/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	0.5	Sand, light orangish brown, fine grain, very loose.	
0.30	0.5		
0.45	0.2		
0.60	0.2	Silty sand, orangish brown, very fine grain, very loose.	
0.75	0.2		
0.90	0.2		
1.05	0.2		
1.20	1		
1.35	1		
1.50	1		
1.65	1		
1.80	1		
1.95	1		
2.10	1		
2.25	2		
2.40	3		
2.55	6	Latteritic silty sand, orangish brown, fine grain, medium dense.	
2.70	9		
2.85	7		
3.00	7		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-52*	STATION	: *0+400*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Organic silty sand, brown, fine grain, very loose.	
0.30	1		
0.45	0.5	Silty sand, orangish brown, very fine grain, very loose.	
0.60	0.5		
0.75	1		
0.90	0.5		
1.05	0.5		
1.20	1		
1.35	1		
1.50	2		
1.65	8	Latteritic silty sand, orangish brown, very fine grain, dense.	
1.80	14		
1.95	17		
2.10	18		
2.25	16		
2.40	17		
2.55	17		
2.70	17		
2.85	17		
3.00	18		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-53*	STATION	: *0+350*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand with some clay, orangish brown, fine grain, very loose.	
0.30	0.16		
0.45	0.16		
0.60	0.16		
0.75	0.16		
0.90	0.16		
1.05	0.16		
1.20	0.5		
1.35	0.5		
1.50	0.5		
1.65	0.5		
1.80	1		
1.95	1		
2.10	2		
2.25	2		
2.40	2		
2.55	7	Latteritic silty sand, orangish brown, very fine grain, medium to dense.	
2.70	9		
2.85	12		
3.00	12		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-54*	STATION	: *0+300*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	2	Sand with some clay, orangish brown, fine grain, very loose to loose.	
0.30	8		
0.45	6		
0.60	3		
0.75	2		
0.90	2		
1.05	3		
1.20	6		
1.35	5		
1.50	4		
1.65	3		
1.80	2		
1.95	2		
2.10	2		
2.25	3		
2.40	3		
2.55	3		
2.70	4		
2.85	4		
3.00	5		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

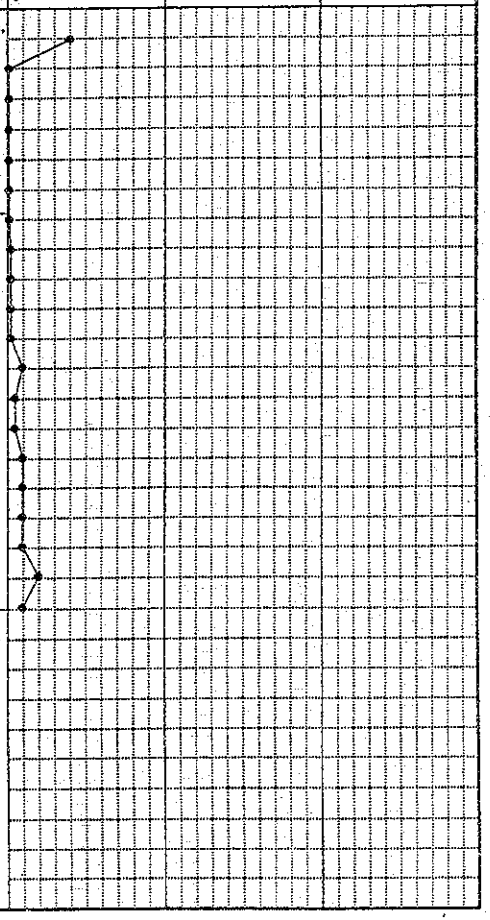
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-55*	STATION :	*0+250*	LOCATION :	*SAVANNAKHET*
DATE :	*23/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	4	Silty sand, brown, very fine grain, very loose.
0.30	0.16	
0.45	0.16	
0.60	0.16	
0.75	0.16	
0.90	0.16	
1.05	0.16	
1.20	0.25	Silty sand, orangish brown, very fine grain, very loose.
1.35	0.25	
1.50	0.25	
1.65	0.25	
1.80	1	
1.95	0.5	
2.10	0.5	
2.25	1	
2.40	1	
2.55	1	
2.70	1	
2.85	2	
3.00	1	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

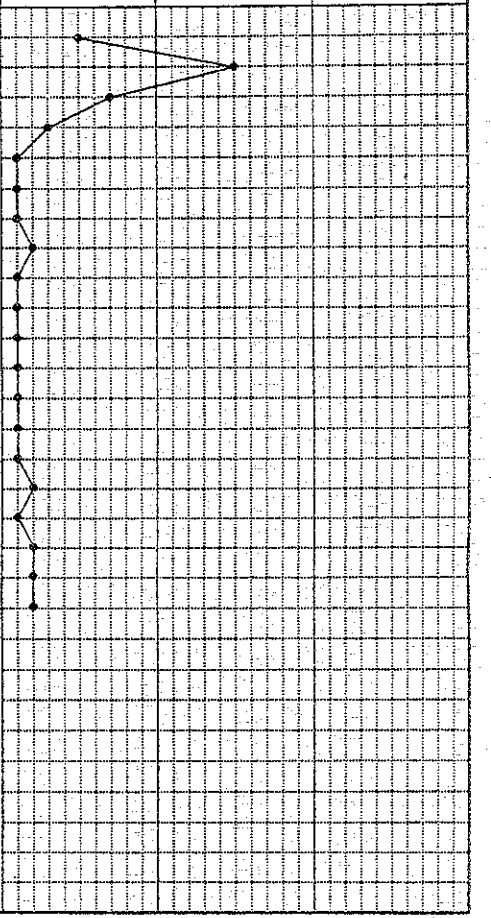
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAS-56*	STATION :	*0+205*	LOCATION :	*SAVANNAKHET*
DATE :	*23/05/99*	DEPTH :	*3.00* M.	TEST BY :	*KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	5	Organic sand, dark brown, fine to medium grain, loose.
0.30	15	
0.45	7	Sand, brown, fine to medium grain, medium dense.
0.60	3	
0.75	1	Silty sand, orangish brown, fine grain, very loose.
0.90	1	
1.05	1	
1.20	2	
1.35	1	
1.50	1	
1.65	1	
1.80	1	
1.95	1	
2.10	1	
2.25	1	
2.40	2	
2.55	1	
2.70	2	
2.85	2	
3.00	2	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

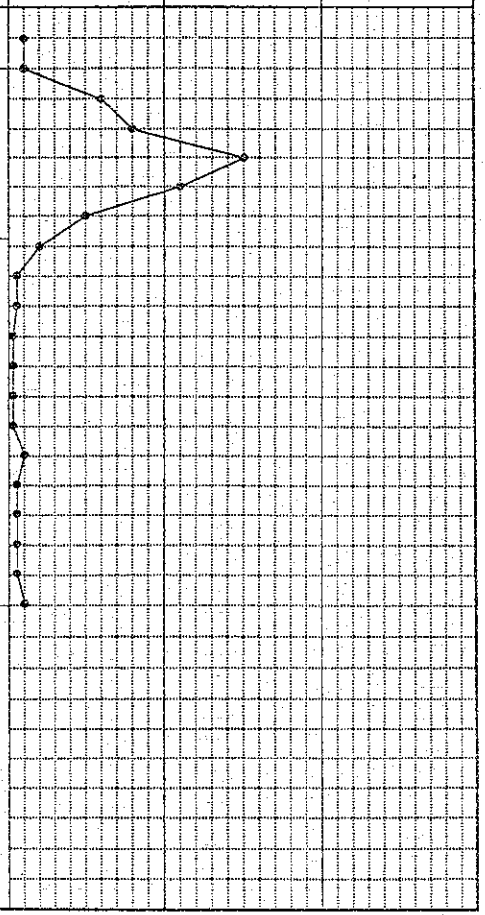
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-57*	STATION	: *0+150*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Organic sand, dark brown, fine
0.30	1	to medium grain, very loose.
0.45	6	Sand, brown, fine to medium
0.60	8	grain, medium dense.
0.75	15	
0.90	11	
1.05	5	
1.20	2	
1.35	0.5	Clayey sand, orangish brown,
1.50	0.5	fine grain, very loose.
1.65	0.25	
1.80	0.25	
1.95	0.25	
2.10	0.25	
2.25	1	
2.40	0.5	
2.55	0.5	
2.70	0.5	
2.85	0.5	
3.00	1	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

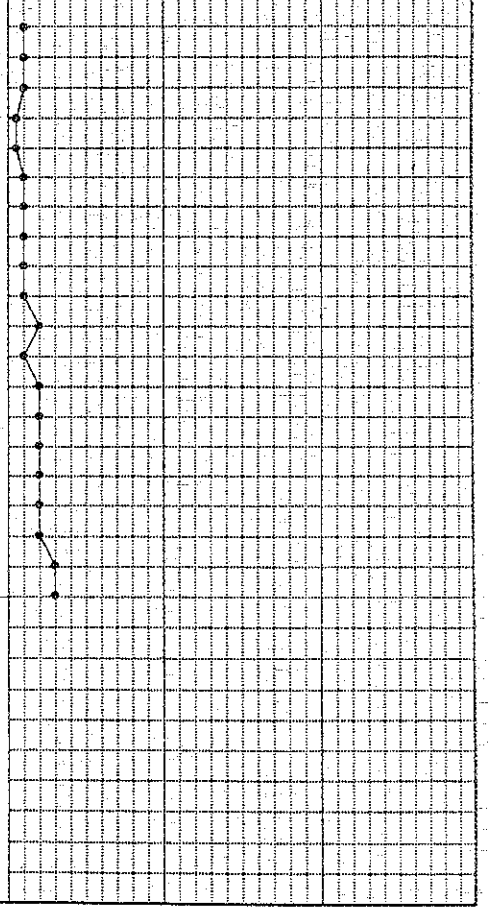
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-58*	STATION	: *0+100*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Silty sand, orangish brown, fine
0.30	1	to medium grain, very loose.
0.45	1	
0.60	0.5	
0.75	0.5	
0.90	1	
1.05	1	
1.20	1	
1.35	1	
1.50	1	
1.65	2	
1.80	1	
1.95	2	
2.10	2	
2.25	2	
2.40	2	
2.55	2	
2.70	2	
2.85	3	
3.00	3	
3.15		
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-59*	STATION	: *0+050*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, orangish brown, fine to medium grain, very loose.	
0.30	1		
0.45	0.1		
0.60	0.1		
0.75	0.1		
0.90	0.1		
1.05	0.1		
1.20	0.1		
1.35	0.1		
1.50	0.1		
1.65	0.1		
1.80	1		
1.95	2		
2.10	1		
2.25	1		
2.40	1		
2.55	1		
2.70	1		
2.85	1		
3.00	1		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAS-60*	STATION	: *0+010*	LOCATION	: *SAVANNAKHET*
DATE	: *23/05/99*	DEPTH	: *3.00* M.	TEST BY	: *KETKEO*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	8	Latteritic clay, reddish brown, back filled, stiff.	
0.30	21		
0.45	26		
0.60	11		
0.75	5	Silty sand, orangish brown, fine grain, loose to medium dense.	
0.90	4		
1.05	6		
1.20	6		
1.35	6		
1.50	7		
1.65	8		
1.80	9		
1.95	8		
2.10	6		
2.25	7		
2.40	7		
2.55	7		
2.70	5		
2.85	6		
3.00	6		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-1A*	STATION	: *1+500*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *16/05/99*	DEPTH	: *3.60*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, brown, very fine grain, medium dense.	
0.30	2		
0.45	3		
0.60	8		
0.75	9		
0.90	11		
1.05	11		
1.20	11		
1.35	11		
1.50	12		
1.65	13	Latteritic silty sand, brown, very fine grain, medium dense.	
1.80	14		
1.95	13		
2.10	14		
2.25	13		
2.40	13		
2.55	12		
2.70	14		
2.85	12		
3.00	13		
3.15	13		
3.30	14		
3.45	15		
3.60	16		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-1*	STATION	: *1+515*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *16/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, brown, very fine grain, medium dense.	
0.30	2		
0.45	2		
0.60	2		
0.75	3		
0.90	3		
1.05	3		
1.20	3		
1.35	5		
1.50	4		
1.65	5	Latteritic silty sand, brown, very fine grain, medium dense.	
1.80	7		
1.95	7		
2.10	5		
2.25	5		
2.40	6		
2.55	7		
2.70	7		
2.85	7		
3.00	7		
3.15	7		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

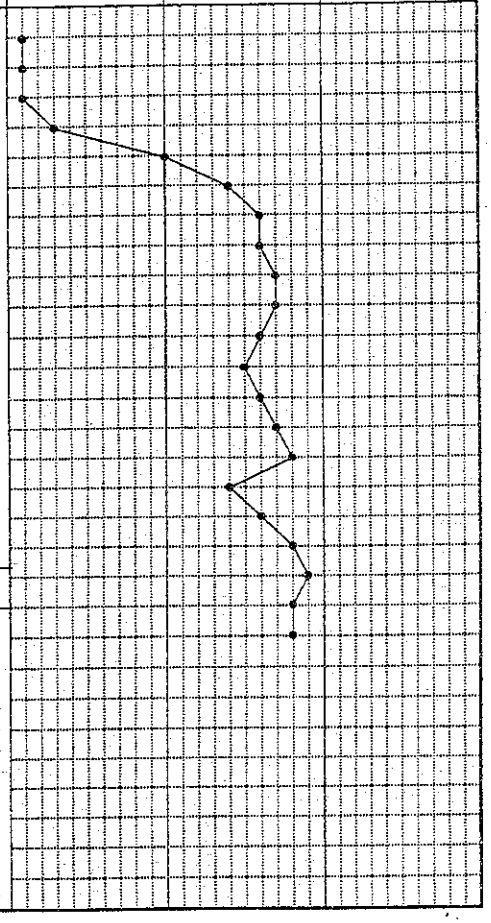
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-2*	STATION	: *1+563*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *16/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Silty clay brown, soft.
0.30	1	
0.45	1	
0.60	3	
0.75	10	
0.90	14	
1.05	16	
1.20	16	
1.35	17	
1.50	17	
1.65	16	very stiff.
1.80	15	
1.95	16	
2.10	17	
2.25	18	
2.40	14	
2.55	16	
2.70	18	
2.85	19	
3.00	18	Sandy clay, brown, very stiff.
3.15	18	
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

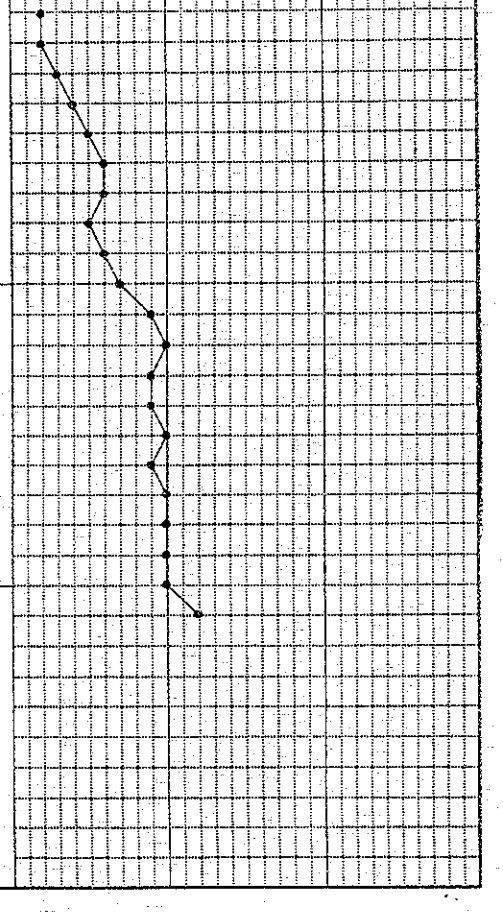
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-3*	STATION	: *1+613*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *16/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	2	Clay, brown, stiff.
0.30	2	
0.45	3	
0.60	4	
0.75	5	
0.90	6	
1.05	6	
1.20	5	
1.35	6	
1.50	7	
1.65	9	Clay, light brown, very stiff.
1.80	10	
1.95	9	
2.10	9	
2.25	10	
2.40	9	
2.55	10	
2.70	10	
2.85	10	
3.00	10	
3.15	12	
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

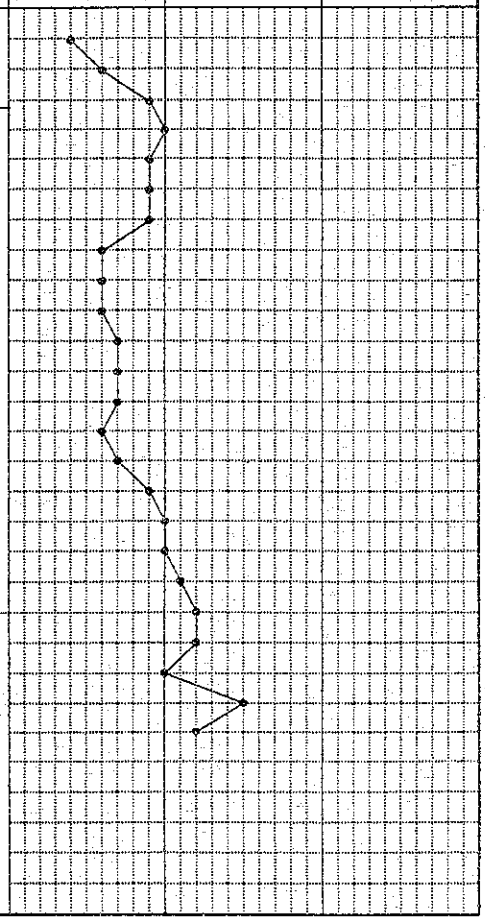
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-4*	STATION	: *1+663*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *16/05/99*	DEPTH	: *3.60*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	4	Clay, grayish brown, stiff.
0.30	6	
0.45	9	
0.60	10	
0.75	9	Clay, orangish brown, stiff to very stiff.
0.90	9	
1.05	9	
1.20	6	
1.35	6	
1.50	6	
1.65	7	
1.80	7	
1.95	7	
2.10	6	
2.25	7	
2.40	9	
2.55	10	
2.70	10	
2.85	11	
3.00	12	
3.15	12	
3.30	10	
3.45	15	
3.60	12	
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

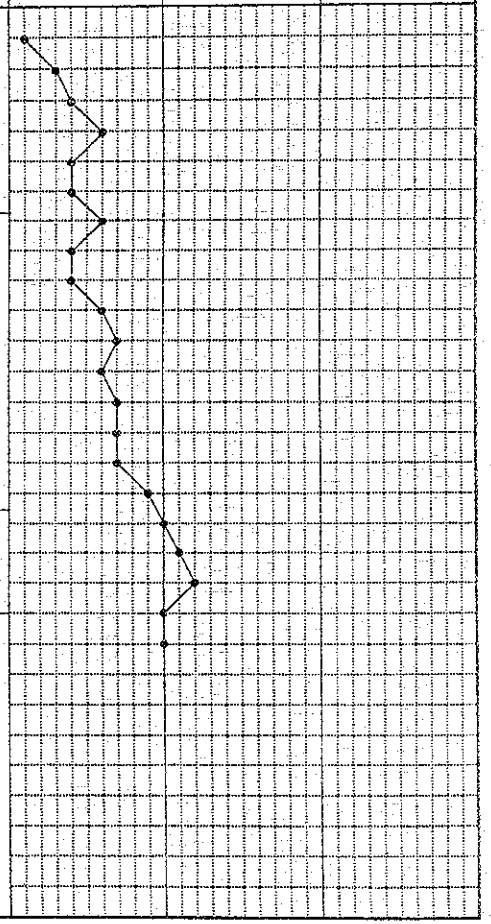
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-5*	STATION	: *1+713*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *15/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Clay, brown, medium stiff.
0.30	3	
0.45	4	
0.60	6	
0.75	4	
0.90	4	
1.05	6	
1.20	4	Clay, light brown, stiff.
1.35	4	
1.50	6	
1.65	7	
1.80	6	
1.95	7	
2.10	7	
2.25	7	
2.40	9	
2.55	10	
2.70	11	Clay, brown, very stiff.
2.85	12	
3.00	10	
3.15	10	
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



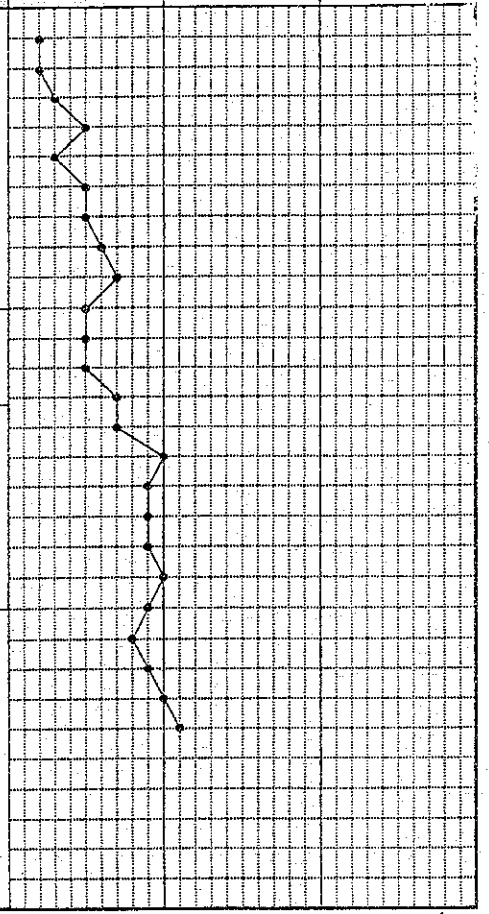
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-6*	STATION	: *1+763*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *15/05/99*	DEPTH	: *3.60*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	2	Clay, light brown, medium to stiff.	
0.30	2		
0.45	3		
0.60	5		
0.75	3		
0.90	5		
1.05	5		
1.20	6		
1.35	7		
1.50	5		
1.65	5	Sandy clay, brown, stiff with some latterite.	
1.80	5		
1.95	7		
2.10	7		
2.25	10	Clay, brown, very stiff.	
2.40	9		
2.55	9		
2.70	9		
2.85	10		
3.00	9		
3.15	8		
3.30	9		
3.45	10		
3.60	11		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



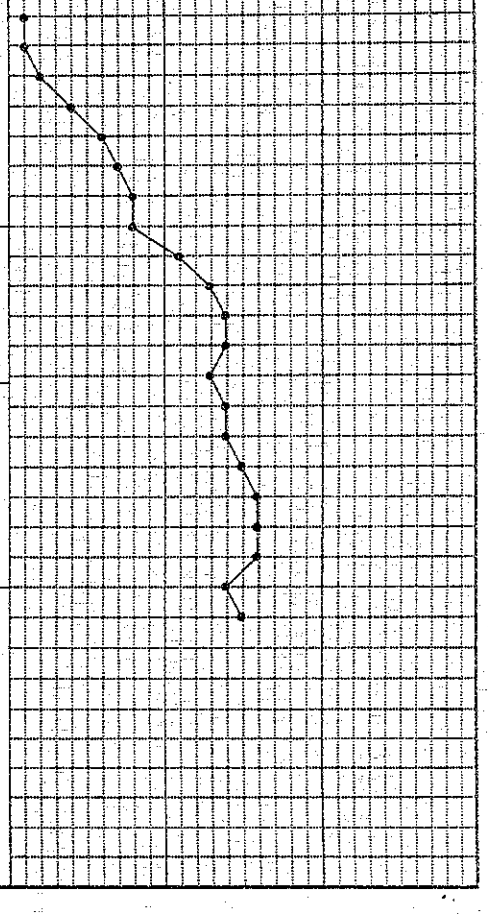
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-7*	STATION	: *1+813*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *15/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Clay, light brown, stiff.	
0.30	1		
0.45	2		
0.60	4		
0.75	6		
0.90	7		
1.05	8		
1.20	8		
1.35	11	Latteritic clay, brown, very stiff.	
1.50	13		
1.65	14		
1.80	14		
1.95	13		
2.10	14		
2.25	14	Clay, orangish brown, very stiff.	
2.40	15		
2.55	16		
2.70	16		
2.85	16		
3.00	14		
3.15	15		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



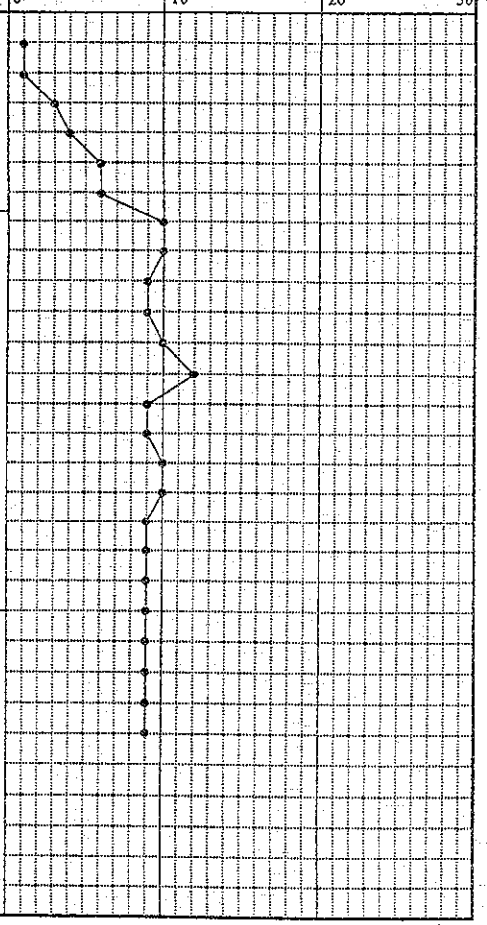
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-8*	STATION	: *1+863* FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *15/05/99*	DEPTH	: *3.60* M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Clay, light orangish brown, stiff.	
0.30	1		
0.45	3		
0.60	4		
0.75	6		
0.90	6		
1.05	10		
1.20	10	Clay, orangish brown, with some latterite, very stiff.	
1.35	9		
1.50	9		
1.65	10		
1.80	12		
1.95	9		
2.10	9		
2.25	10		
2.40	10		
2.55	9		
2.70	9		
2.85	9		
3.00	9		
3.15	9		
3.30	9		
3.45	9		
3.60	9		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



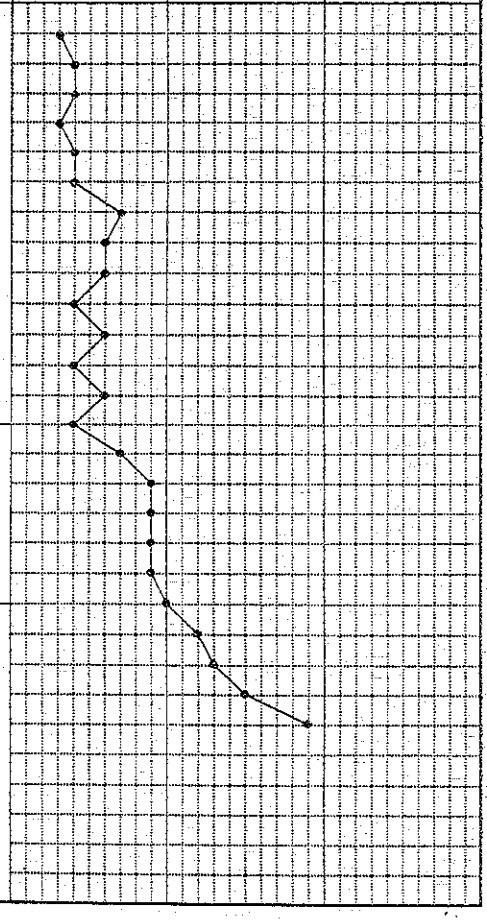
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-9*	STATION	: *1+913* FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *14/05/99*	DEPTH	: *3.60* M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	3	Clay, orangish brown, stiff.	
0.30	4		
0.45	4		
0.60	3		
0.75	4		
0.90	4		
1.05	7		
1.20	6		
1.35	6		
1.50	4		
1.65	6		
1.80	4		
1.95	6		
2.10	4		
2.25	7	Latteritic clay, orangish brown, very stiff.	
2.40	9		
2.55	9		
2.70	9		
2.85	9		
3.00	10		
3.15	12		
3.30	13		
3.45	15		
3.60	19		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



DYNAMIC CONE PENETRATION TEST

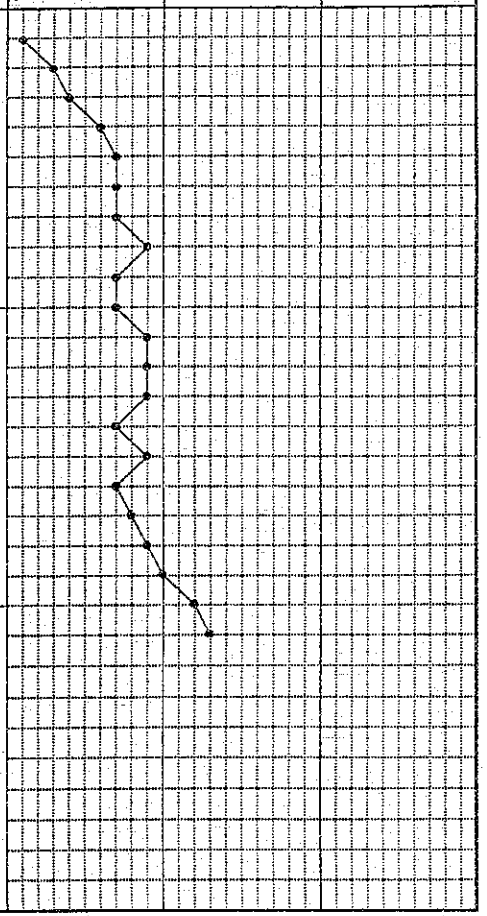
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-10*	STATION : *1+963*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*14/05/99*	DEPTH : *3.15*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Clay, orangish brown, stiff.
0.30	3	
0.45	4	
0.60	6	
0.75	7	
0.90	7	
1.05	7	
1.20	9	
1.35	7	
1.50	7	
1.65	9	Clay, orangish yellow, very stiff.
1.80	9	
1.95	9	
2.10	7	
2.25	9	
2.40	7	
2.55	8	
2.70	9	
2.85	10	
3.00	12	
3.15	13	
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

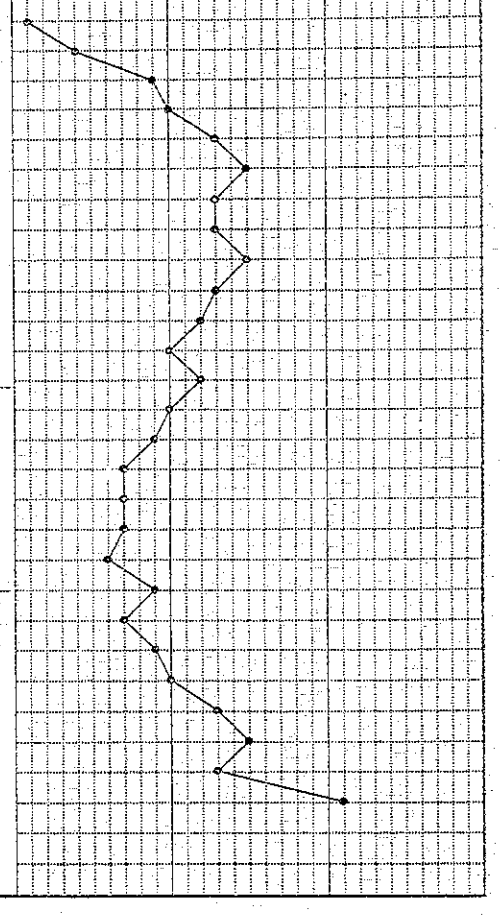
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-11*	STATION : *2+013*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*14/05/99*	DEPTH : *4.05*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Clay, brown, very stiff.
0.30	4	
0.45	9	
0.60	10	
0.75	13	
0.90	15	
1.05	13	
1.20	13	
1.35	15	
1.50	13	
1.65	12	
1.80	10	
1.95	12	
2.10	10	
2.25	9	Clay, yellowish brown, stiff.
2.40	7	
2.55	7	
2.70	7	
2.85	6	
3.00	9	
3.15	7	
3.30	9	
3.45	10	
3.60	13	
3.75	15	
3.90	13	
4.05	21	
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



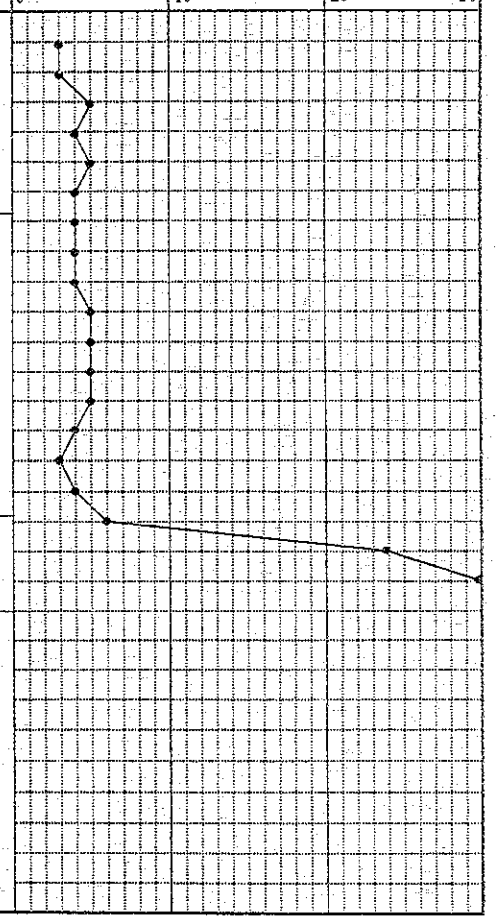
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-12*	STATION : *2+063*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*19/05/99*	DEPTH : *3.15*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty clay, dark brown, very soft.	
0.30	1		
0.45	1		
0.60	1		
0.75	2	Silty clay, yellowish brown, soft.	
0.90	2		
1.05	2		
1.20	3	Clay, brown, medium to very stiff.	
1.35	3		
1.50	4		
1.65	5		
1.80	5		
1.95	6		
2.10	7		
2.25	8		
2.40	11		
2.55	14		
2.70	14		
2.85	11		
3.00	18		
3.15	20		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-13*	STATION : *2+113*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*19/05/99*	DEPTH : *3.00*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	3	Clay, orangish brown, medium stiff.	
0.30	3		
0.45	5		
0.60	4		
0.75	5		
0.90	4		
1.05	4		
1.20	4	Clay, brown, medium stiff.	
1.35	4		
1.50	5		
1.65	5		
1.80	5		
1.95	5		
2.10	4		
2.25	3		
2.40	4		
2.55	6		
2.70	24	Silty clay, yellowish brown, very stiff.	
2.85	30		
3.00	20/8 cm.		
3.15			
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-14*	STATION	: *2+163*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *19/05/99*	DEPTH	: *3.60*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	2	Clay, gray and orangish brown, stiff.	
0.30	3		
0.45	3		
0.60	3		
0.75	4		
0.90	5		
1.05	5		
1.20	6		
1.35	6		
1.50	5		
1.65	10		
1.80	8		
1.95	7		
2.10	7		
2.25	7	Sandy clay, light orangish brown, fine grain, stiff.	
2.40	7		
2.55	7		
2.70	7		
2.85	8		
3.00	8		
3.15	11		
3.30	10		
3.45	10		
3.60	14		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-15*	STATION	: *2+213*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *19/05/99*	DEPTH	: *3.60*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light gray, very fine grain, loose.	
0.30	2		
0.45	3		
0.60	4		
0.75	5		
0.90	6		
1.05	8		
1.20	6		
1.35	6		
1.50	6		
1.65	7	Clayey sand, light gray, very fine grain, medium dense.	
1.80	8		
1.95	9		
2.10	9		
2.25	10		
2.40	14		
2.55	21		
2.70	16		
2.85	14		
3.00	13		
3.15	13		
3.30	9		
3.45	10		
3.60	12		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

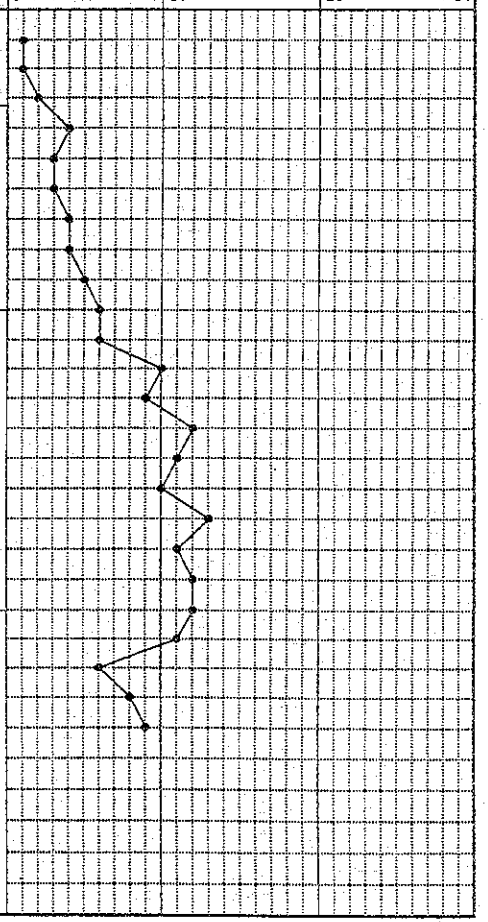
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-16*	STATION	: *2+263* FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *19/05/99*	DEPTH	: *3.60* M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light gray, very fine grain, very loose.	
0.30	1		
0.45	2		
0.60	4	Sandy clay, yellowish brown, very fine grain, medium stiff.	
0.75	3		
0.90	3		
1.05	4		
1.20	4		
1.35	5		
1.50	6		
1.65	6	Clayey silt, light gray, stiff.	
1.80	10		
1.95	9		
2.10	12		
2.25	11		
2.40	10		
2.55	13		
2.70	11		
2.85	12		
3.00	12		
3.15	11		
3.30	6		
3.45	8		
3.60	9		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



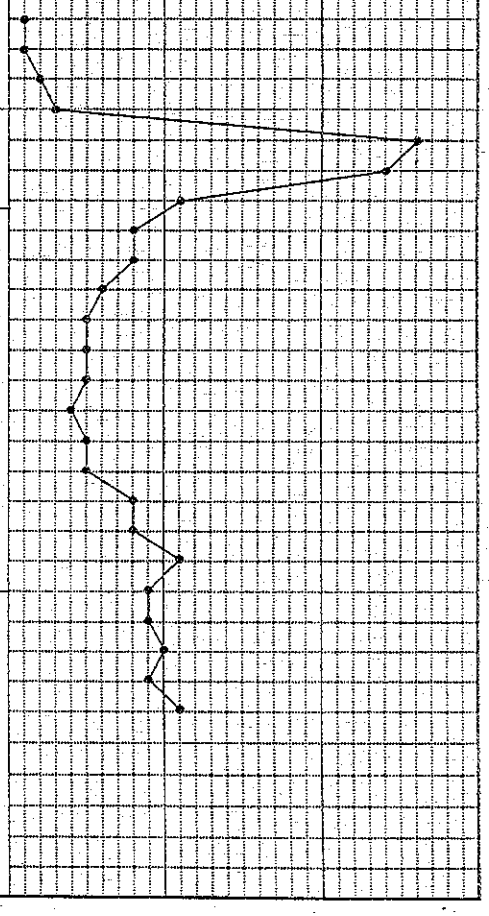
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-17*	STATION	: *2+313* FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *18/05/99*	DEPTH	: *3.60* M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light orangish brown, very fine grain, very loose.	
0.30	1		
0.45	2		
0.60	3		
0.75	26	Latteritic soil, reddish brown, very stiff.	
0.90	24		
1.05	11		
1.20	8	Sandy clay, yellowish brown, fine grain, medium to stiff.	
1.35	8		
1.50	6		
1.65	5		
1.80	5		
1.95	5		
2.10	4		
2.25	5		
2.40	5		
2.55	8		
2.70	8		
2.85	11		
3.00	9		
3.15	9		
3.30	10		
3.45	9		
3.60	11		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



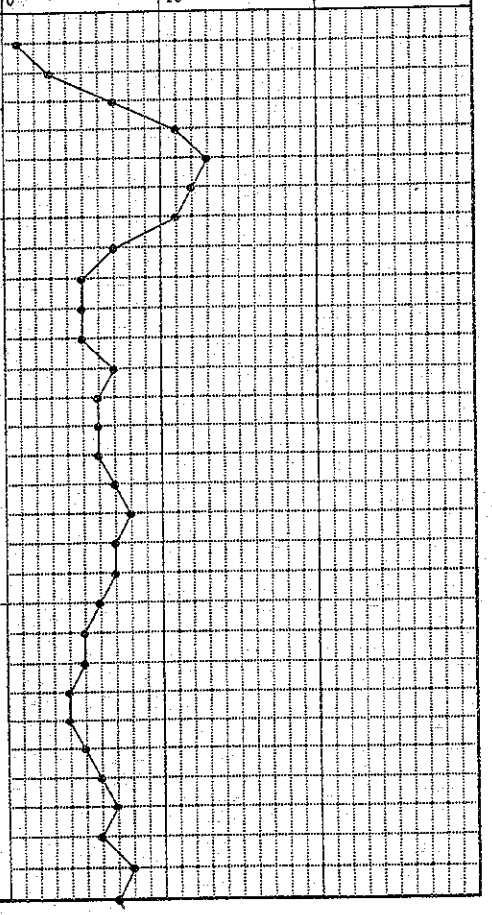
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-18*	STATION : *2+363*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *11.25*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light orangish brown, fine grain, loose.	
0.30	3		
0.45	7		
0.60	11	Latteritic clay, reddish brown, stiff.	
0.75	13		
0.90	12		
1.05	11		
1.20	7	Sandy clay, orangish brown, fine grain, medium stiff.	
1.35	5		
1.50	5		
1.65	5		
1.80	7		
1.95	6		
2.10	6		
2.25	6		
2.40	7		
2.55	8		
2.70	7		
2.85	7		
3.00	6		
3.15	5		
3.30	5		
3.45	4		
3.60	4		
3.75	5		
3.90	6		
4.05	7		
4.20	6		
4.35	8		
4.50	7		



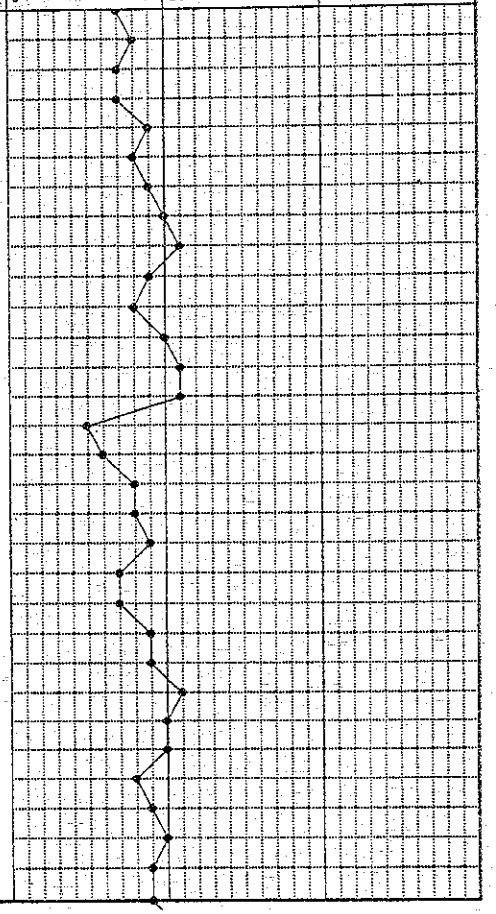
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-18*	STATION : *2+363*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *11.25*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
4.65	8		
4.80	7		
4.95	7		
5.10	9		
5.25	8		
5.40	9		
5.55	10		
5.70	11		
5.85	9		
6.00	8		
6.15	10		
6.30	11		
6.45	11		
6.60	5		
6.75	6		
6.90	8		
7.05	8		
7.20	9		
7.35	7		
7.50	7		
7.65	9		
7.80	9		
7.95	11		
8.10	10		
8.25	10		
8.40	8		
8.55	9		
8.70	10		
8.85	9		
9.00	9		



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-18*	STATION : *2+363*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *11.25*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
9.15	11		
9.30	12		
9.45	12		
9.60	13		
9.75	14		
9.90	15		
10.05	16		
10.20	16		
10.35	15		
10.50	15		
10.65	21		
10.80	20		
10.95	22		
11.10	24		
11.25	53		
11.40			
11.55			
11.70			
11.85			
12.00			
12.15			
12.30			
12.45			
12.60			
12.75			
12.90			
13.05			
13.20			
13.35			
13.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-19*	STATION : *2+413*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*22/05/99*	DEPTH : *3.15*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, light orangish brown, fine grain, very loose.	
0.30	1		
0.45	1		
0.60	1		
0.75	1		
0.90	2		
1.05	2		
1.20	30	Latteritic soil, reddish brown, very stiff.	
1.35	30		
1.50	23		
1.65	10		
1.80	7	Sandy clay, yellowish brown, fine grain, medium stiff.	
1.95	7		
2.10	8		
2.25	7		
2.40	8		
2.55	7		
2.70	7		
2.85	9		
3.00	11		
3.15	13		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-20*	STATION	: *2+463* FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *22/05/99*	DEPTH	: *3.60* M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sandy clay, light yellowish brown, very fine grain, very soft.	
0.30	1		
0.45	1		
0.60	1		
0.75	2		
0.90	1		
1.05	1		
1.20	1		
1.35	2	Clay, light orangish brown, medium stiff.	
1.50	5		
1.65	7		
1.80	7		
1.95	5		
2.10	5		
2.25	6		
2.40	5		
2.55	6		
2.70	6	Clay, orangish brown, medium stiff.	
2.85	6		
3.00	5		
3.15	5		
3.30	8		
3.45	7		
3.60	9		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-21*	STATION	: *2+513* FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *23/05/99*	DEPTH	: *10.50* M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light orangish brown, very fine grain, very loose.	
0.30	1		
0.45	2		
0.60	20	Latteritic oil, reddish brown, stiff.	
0.75	18		
0.90	9		
1.05	6		
1.20	5	Silty clay, yellowish brown, medium stiff.	
1.35	8		
1.50	6		
1.65	6		
1.80	6		
1.95	7		
2.10	6		
2.25	5		
2.40	6		
2.55	6		
2.70	7		
2.85	6		
3.00	7		
3.15	6		
3.30	6		
3.45	6		
3.60	7		
3.75	6		
3.90	8		
4.05	8		
4.20	7		
4.35	8		
4.50	7		

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAM-21*	STATION : *2+513* FROM POINT A	LOCATION : *MUKDAHARN*
DATE : *23/05/99*	DEPTH : *10.50* M.	TEST BY : *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
4.65	9		
4.80	8		
4.95	8		
5.10	7		
5.25	9		
5.40	8		
5.55	7		
5.70	10		
5.85	4		
6.00	6		
6.15	5		
6.30	6		
6.45	6		
6.60	5		
6.75	7		
6.90	8		
7.05	9		
7.20	9		
7.35	10		
7.50	8		
7.65	9		
7.80	9		
7.95	8		
8.10	7		
8.25	7		
8.40	8		
8.55	6		
8.70	9		
8.85	10		
9.00	8		

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAM-21*	STATION : *2+513* FROM POINT A	LOCATION : *MUKDAHARN*
DATE : *23/05/99*	DEPTH : *10.50* M.	TEST BY : *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
9.15	13		
9.30	16		
9.45	18		
9.60	17		
9.75	15		
9.90	16		
10.05	22		
10.20	21		
10.35	23		
10.50	56		
10.65			
10.80			
10.95			
11.10			
11.25			
11.40			
11.55			
11.70			
11.85			
12.00			
12.15			
12.30			
12.45			
12.60			
12.75			
12.90			
13.05			
13.20			
13.35			
13.50			

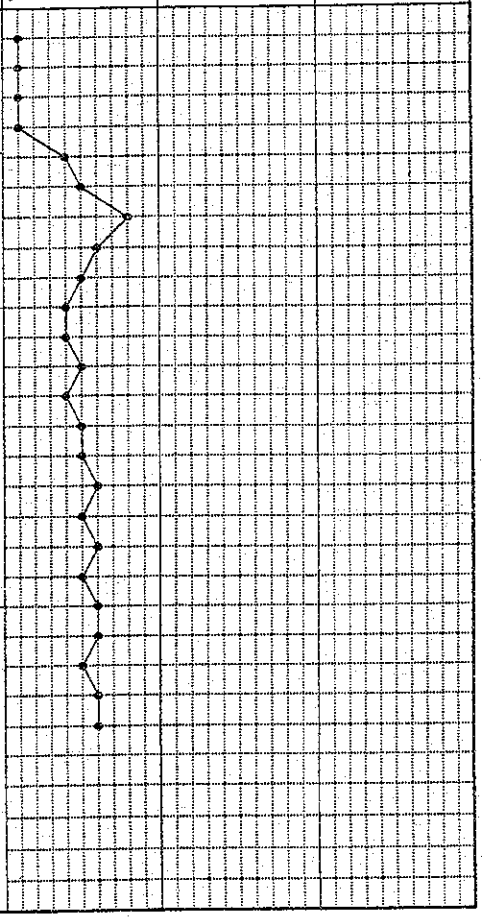
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-22*	STATION : *2+563*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*22/05/99*	DEPTH : *3.60*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sand, light orangish brown, very fine grain, very loose.	
0.30	1		
0.45	1		
0.60	1		
0.75	4		
0.90	5	Latteritic clay, reddish brown, medium stiff.	
1.05	8		
1.20	6		
1.35	5		
1.50	4		
1.65	4	Clay, reddish brown, medium stiff.	
1.80	5		
1.95	4		
2.10	5		
2.25	5		
2.40	6		
2.55	5		
2.70	6		
2.85	5		
3.00	6		
3.15	6		
3.30	5		
3.45	6		
3.60	6		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



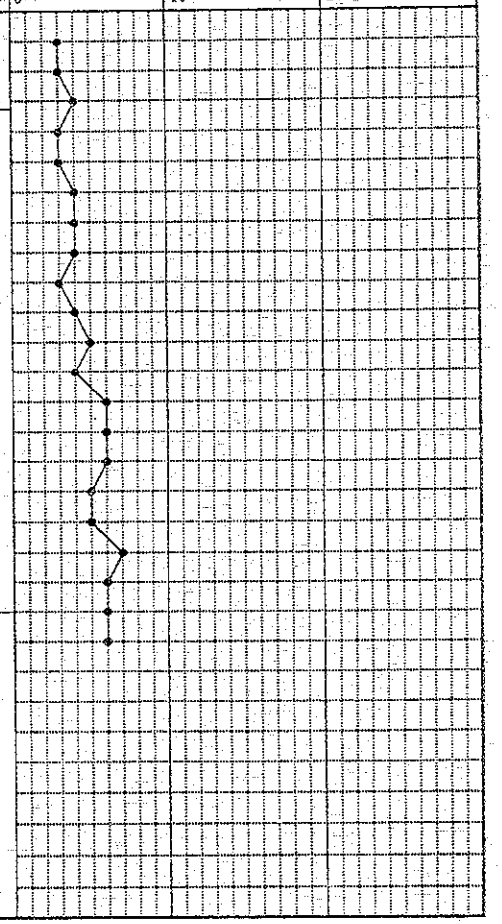
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-23*	STATION : *2+613*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*22/05/99*	DEPTH : *3.15*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	3	Clay, light orangish brown, soft.	
0.30	3		
0.45	4		
0.60	3	Clay, reddish brown, medium stiff.	
0.75	3		
0.90	4		
1.05	4		
1.20	4		
1.35	3		
1.50	4		
1.65	5		
1.80	4		
1.95	6		
2.10	6		
2.25	6		
2.40	5		
2.55	5		
2.70	7		
2.85	6		
3.00	6		
3.15	6		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



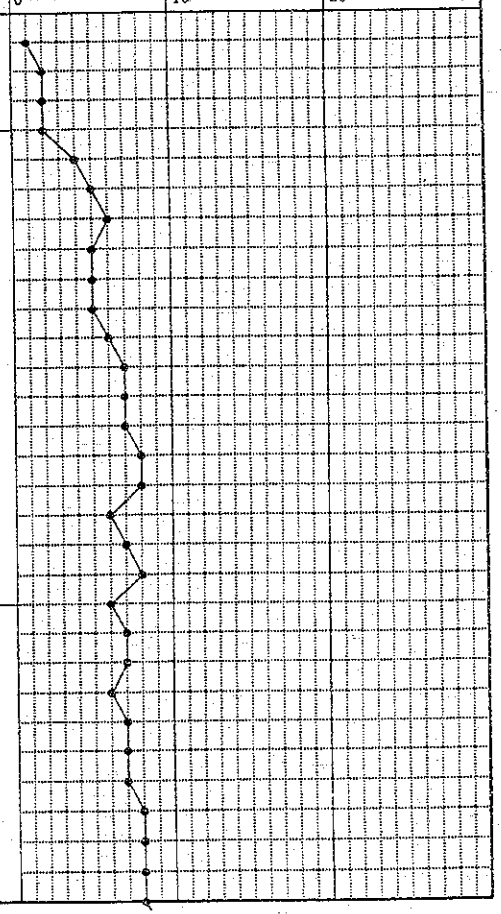
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-24*	STATION : *2+663*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*22/05/99*	DEPTH : *10.80*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Clay, orangish brown, soft.	
0.30	2		
0.45	2		
0.60	2		
0.75	4	Clay, reddish brown, medium stiff.	
0.90	5		
1.05	6		
1.20	5		
1.35	5		
1.50	5		
1.65	6		
1.80	7		
1.95	7		
2.10	7		
2.25	8		
2.40	8		
2.55	6		
2.70	7		
2.85	8		
3.00	6		
3.15	7		
3.30	7		
3.45	6		
3.60	7		
3.75	7		
3.90	7		
4.05	8		
4.20	8		
4.35	8		
4.50	8		



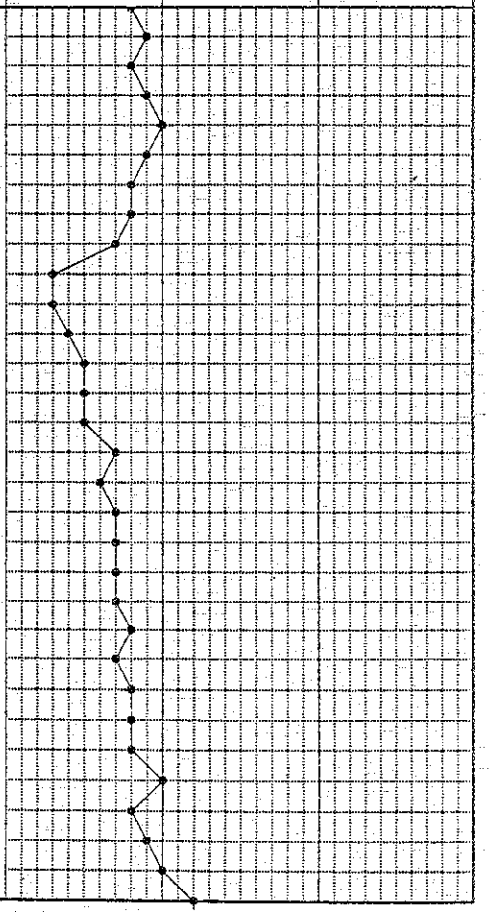
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-24*	STATION : *2+663*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*22/05/99*	DEPTH : *10.80*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
4.65	9		
4.80	8		
4.95	9		
5.10	10		
5.25	9		
5.40	8		
5.55	8		
5.70	7		
5.85	3		
6.00	3		
6.15	4		
6.30	5		
6.45	5		
6.60	5		
6.75	7		
6.90	6		
7.05	7		
7.20	7		
7.35	7		
7.50	7		
7.65	8		
7.80	7		
7.95	8		
8.10	8		
8.25	8		
8.40	10		
8.55	8		
8.70	9		
8.85	10		
9.00	12		



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-24*	STATION	: *2+663*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *22/05/99*	DEPTH	: *10.80*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
9.15	12		
9.30	13		
9.45	13		
9.60	14		
9.75	13		
9.90	15		
10.05	15		
10.20	14		
10.35	14		
10.50	15		
10.65	21		
10.80	52		
10.95			
11.10			
11.25			
11.40			
11.55			
11.70			
11.85			
12.00			
12.15			
12.30			
12.45			
12.60			
12.75			
12.90			
13.05			
13.20			
13.35			
13.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-25*	STATION	: *2+713*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *22/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light yellowish brown, very fine grain, very loose.	
0.30	2		
0.45	2		
0.60	5	Clay, reddish brown, medium stiff.	
0.75	4		
0.90	4		
1.05	5		
1.20	4		
1.35	4		
1.50	5		
1.65	6		
1.80	5		
1.95	8		
2.10	6		
2.25	8		
2.40	6		
2.55	7		
2.70	8		
2.85	7		
3.00	8		
3.15	6		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

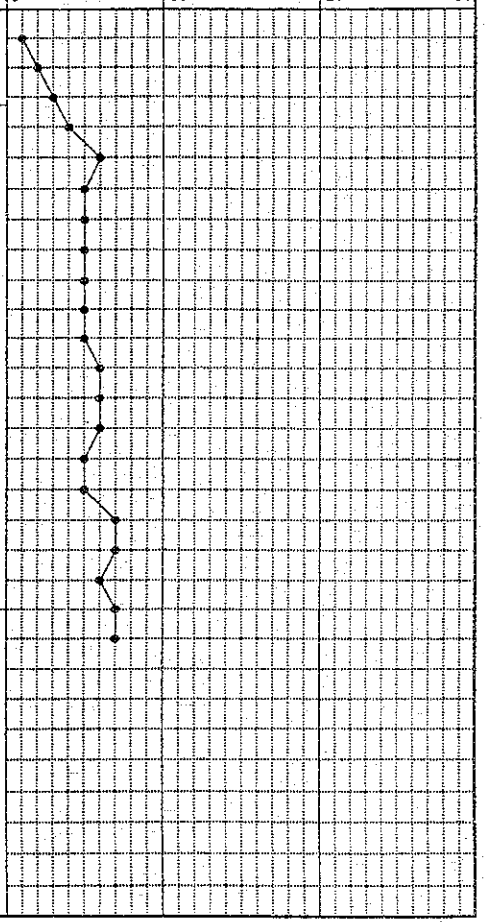
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAM-26*	STATION : *2+763* FROM POINT A	LOCATION : *MUKDAHARN*
DATE : *22/05/99*	DEPTH : *3.15* M.	TEST BY : *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light brown, very fine grain, very loose.	
0.30	2		
0.45	3		
0.60	4		
0.75	6	Clay, reddish brown, medium stiff.	
0.90	5		
1.05	5		
1.20	5		
1.35	5		
1.50	5		
1.65	5		
1.80	6		
1.95	6		
2.10	6		
2.25	5		
2.40	5		
2.55	7		
2.70	7		
2.85	6		
3.00	7		
3.15	7		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



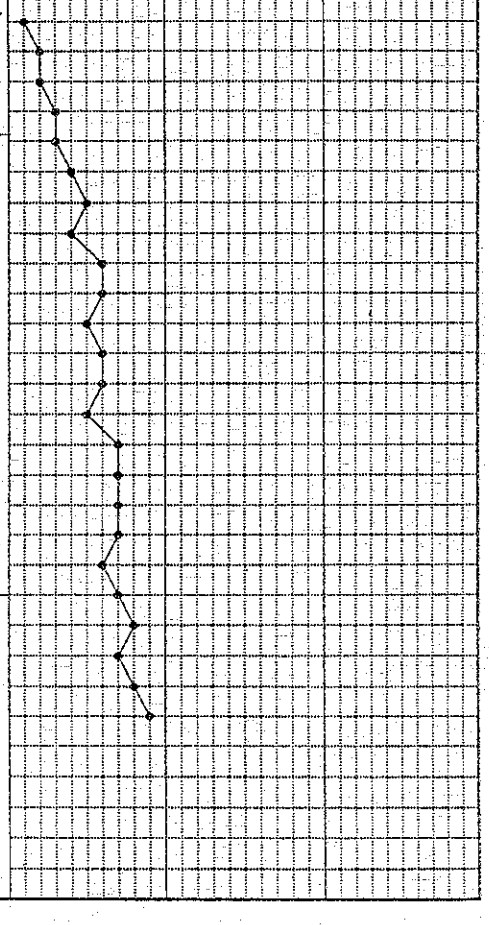
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAM-27*	STATION : *2+813* FROM POINT A	LOCATION : *MUKDAHARN*
DATE : *23/05/99*	DEPTH : *3.60* M.	TEST BY : *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Silty sand, light yellowish brown, very fine grain, very loose.	
0.30	2		
0.45	2		
0.60	3		
0.75	3		
0.90	4	Clay, reddish brown, medium stiff.	
1.05	5		
1.20	4		
1.35	6		
1.50	6		
1.65	5		
1.80	6		
1.95	6		
2.10	5		
2.25	7		
2.40	7		
2.55	7		
2.70	7		
2.85	6		
3.00	7		
3.15	8		
3.30	7		
3.45	8		
3.60	9		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-28*	STATION : *2+863*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *3.60*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	4	Sandy clay, light orangish brown, very fine grain, soft.	
0.30	8		
0.45	4		
0.60	4		
0.75	4		
0.90	4		
1.05	5		
1.20	4	Clay, reddish brown, medium stiff.	
1.35	4		
1.50	4		
1.65	5		
1.80	5		
1.95	6		
2.10	5		
2.25	6		
2.40	6		
2.55	6		
2.70	6	Clay, yellowish and orangish brown, medium stiff.	
2.85	7		
3.00	5		
3.15	6		
3.30	7		
3.45	8		
3.60	6		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-29*	STATION : *2+913*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *3.60*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM.	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Clay, reddish brown, medium stiff.	
0.30	2		
0.45	3		
0.60	3		
0.75	4		
0.90	3		
1.05	4		
1.20	4		
1.35	5		
1.50	5		
1.65	6		
1.80	5		
1.95	6		
2.10	5		
2.25	5		
2.40	5		
2.55	5		
2.70	6	Clay, orangish brown, medium stiff.	
2.85	7		
3.00	8		
3.15	9		
3.30	10		
3.45	12		
3.60	11		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

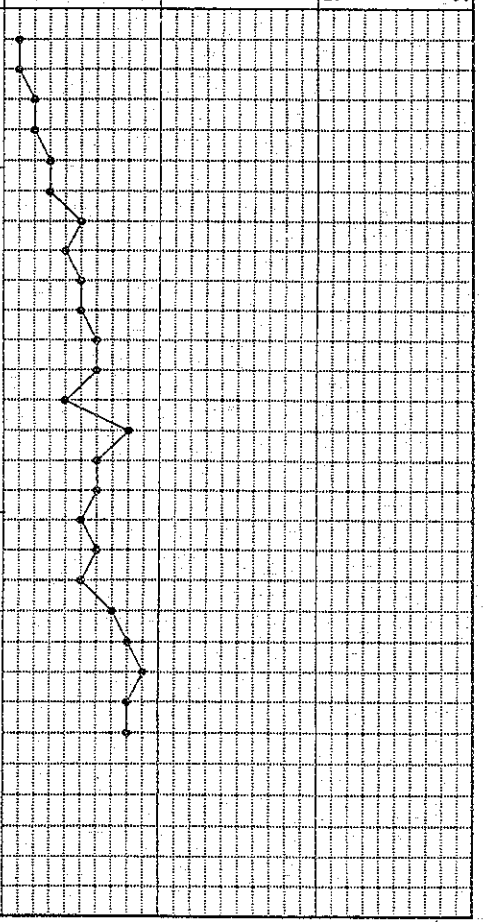
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAM-30*	STATION : *2+963* FROM POINT A	LOCATION : *MUKDAHARN*
DATE : *23/05/99*	DEPTH : *3.60* M.	TEST BY : *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	1	Sandy clay, light orangish brown, very fine grain, soft.	
0.30	1		
0.45	2		
0.60	2		
0.75	3		
0.90	3		
1.05	5	Clay, reddish brown, medium stiff.	
1.20	4		
1.35	5		
1.50	5		
1.65	6		
1.80	6		
1.95	4		
2.10	8		
2.25	6		
2.40	6		
2.55	5		
2.70	6	Clay, orangish brown, medium stiff.	
2.85	5		
3.00	7		
3.15	8		
3.30	9		
3.45	8		
3.60	8		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



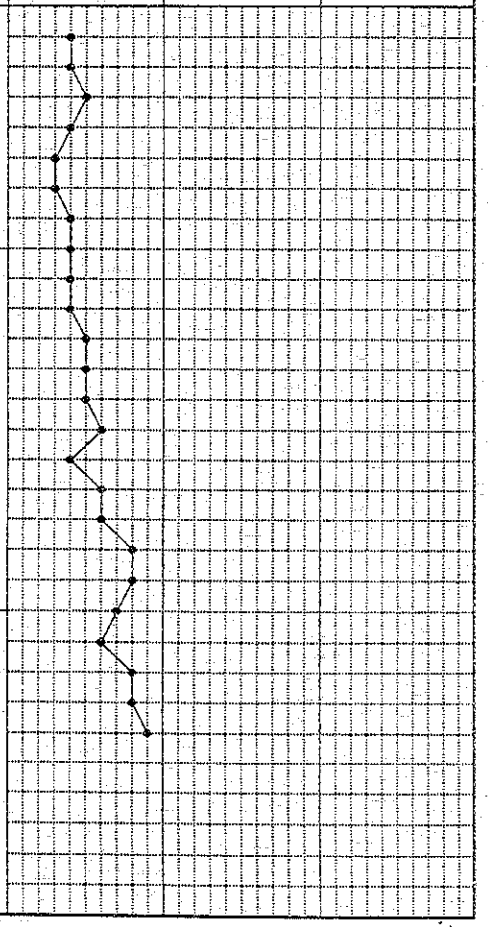
DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. : *HAM-31*	STATION : *3+013* FROM POINT A	LOCATION : *MUKDAHARN*
DATE : *23/05/99*	DEPTH : *3.60* M.	TEST BY : *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	4	Sand, light orangish brown, very fine grain, very loose.	
0.30	4		
0.45	5		
0.60	4		
0.75	3		
0.90	3		
1.05	4		
1.20	4		
1.35	4	Clay, orangish brown, medium stiff.	
1.50	4		
1.65	5		
1.80	5		
1.95	5		
2.10	6		
2.25	4		
2.40	6		
2.55	6		
2.70	8		
2.85	8		
3.00	7		
3.15	6		
3.30	8		
3.45	8		
3.60	9		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			



DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-32*	STATION	: *3+063*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *23/05/99*	DEPTH	: *3.60*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	3	Sandy clay, light brown, soft.	
0.30	4		
0.45	4		
0.60	5		
0.75	4		
0.90	5		
1.05	5		
1.20	5		
1.35	4	Clay, orangish brown, medium stiff.	
1.50	4		
1.65	5		
1.80	5		
1.95	6		
2.10	6		
2.25	6		
2.40	8		
2.55	7		
2.70	7		
2.85	8		
3.00	9		
3.15	9		
3.30	10		
3.45	9		
3.60	10		
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO.	: *HAM-33*	STATION	: *3+113*	FROM POINT A	LOCATION	: *MUKDAHARN*
DATE	: *23/05/99*	DEPTH	: *3.15*	M.	TEST BY	: *LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION	N-GRAPHIC SECTION 0 10 20 30
0.15	2	Clay, orangish brown, soft to medium stiff.	
0.30	2		
0.45	2		
0.60	3		
0.75	4		
0.90	3		
1.05	4		
1.20	4		
1.35	3		
1.50	4		
1.65	4		
1.80	5		
1.95	5		
2.10	5		
2.25	5		
2.40	6		
2.55	6		
2.70	6		
2.85	5		
3.00	5		
3.15	6		
3.30			
3.45			
3.60			
3.75			
3.90			
4.05			
4.20			
4.35			
4.50			

DYNAMIC CONE PENETRATION TEST

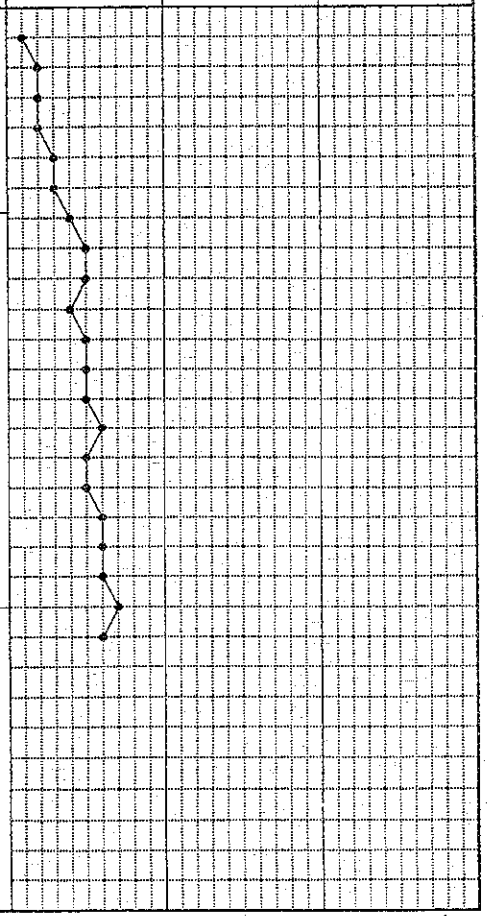
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-34*	STATION : *3+163*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *3.15*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	1	Clay, yellowish brown, soft.
0.30	2	
0.45	2	
0.60	2	
0.75	3	
0.90	3	
1.05	4	
1.20	5	Clay, orangish brown, medium stiff.
1.35	5	
1.50	4	
1.65	5	
1.80	5	
1.95	5	
2.10	6	
2.25	5	
2.40	5	
2.55	6	
2.70	6	
2.85	6	
3.00	7	
3.15	6	
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



DYNAMIC CONE PENETRATION TEST

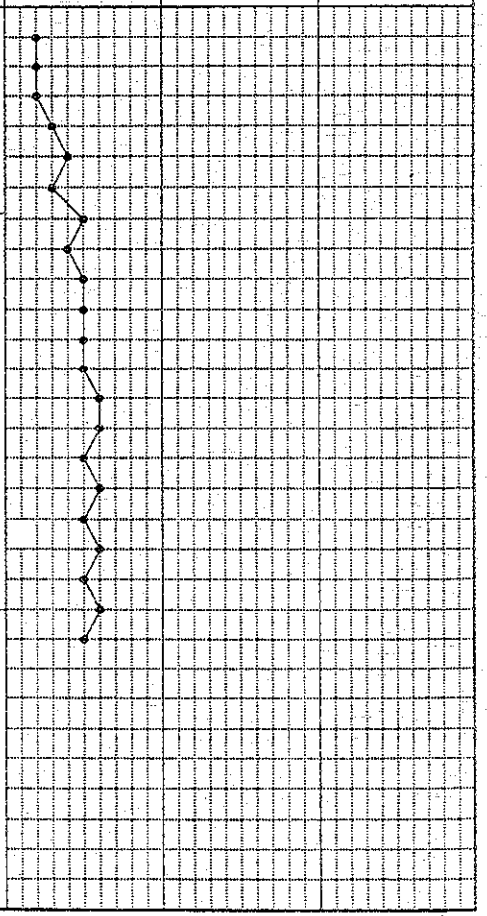
PROJECT : THE GEOLOGICAL SURVEY FOR THE DETAILED DESIGN OF THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

HOLE NO. :	*HAM-35*	STATION : *3+213*	FROM POINT A	LOCATION :	*MUKDAHARN*
DATE :	*23/05/99*	DEPTH : *3.15*	M.	TEST BY :	*LERTCHAI*

WEIGHT OF HAMMER 63.5 KG DROP HEIGHT 76 CM. CONE DIAMETER 60 MM.

DEPTH (M.)	N BLOWS/15CM	DESCRIPTION
0.15	2	Clay, yellowish brown, soft.
0.30	2	
0.45	2	
0.60	3	
0.75	4	
0.90	3	
1.05	5	
1.20	4	Clay, orangish brown, medium stiff.
1.35	5	
1.50	5	
1.65	5	
1.80	5	
1.95	6	
2.10	6	
2.25	5	
2.40	6	
2.55	5	
2.70	6	
2.85	5	
3.00	6	
3.15	5	
3.30		
3.45		
3.60		
3.75		
3.90		
4.05		
4.20		
4.35		
4.50		

N-GRAPHIC SECTION



A. Soil and Aggregate Material Test

A3. Laboratory Test Data

Table 1a Summary of Physical Properties for Borehole Samples from Mukdaharn for BM-1

Borehole No.	Sample No.	Depth (m) From	Depth (m) To	Water Content (%)	Total Unit Weight (ton/m^3)	Liquid Limit (%)	Plasticity Index (%)	Specific Gravity Gs	Grain Size (%) Gravel	Sand Coarse	Sand Medium	Sand Fine	Silt	Clay	SPT N Value	Undrained Shear Strength UC Test (ton/m^2)	Undrained Shear Strength UU Test (ton/m^2)	Coef. of Permeability k (cm/s)	Colour	USCS	Soil Description
BM-1	UD-1	0.50	1.00	18.8	2.12	33.8	15.8	2.57	1	1	2	3	42	51		9.9	13.9	-	Grayish Red	CL	Silty CLAY
BM-1	SS-1 SS-2	1.00 2.00	1.45 2.45	16.2	1.94	39.1	20.1	2.57	1	1	1	2	35	60	9 17			1.3E-08	Pale Brown	CL	Silty CLAY
BM-1	UD-2	1.00	1.50	17.6	2.04	40.5	20.8	2.57	0	1	1	2	40	56		23.2	29.1	-	Pale Yellowish Orange	CL	Silty CLAY
BM-1	SS-3 SS-4	3.00 4.00	3.45 4.45	13.0	2.04	44.2	21.2	2.63	4	1	0	1	39	55	30 45			6.4E-05	Pale Brown	CL	Silty CLAY
BM-1	SS-5 SS-6	5.00 6.00	5.45 6.45	14.7	2.02	44.0	20.5	2.63	3	1	1	0	46	49	39 >50			7.7E-07	Pale Brown	CL	Silty CLAY
BM-1	UD-3	5.50	6.00	20.7	2.04	37.7	15.9	2.63	1	3	2	4	41	49		13	15.7	-	Pale Yellowish Orange	CL	Silty CLAY
BM-1	SS-7 SS-8	7.00 8.00	7.45 8.45	18.4	-	36.9	15.7	2.61	9	1	1	1	40	48	41 28	-	-	4.5E-07	Pale Brown	CL	Silty CLAY
BM-1	SS-9	9.00	9.45	20.0	-	NP	NP	2.59	1	1	3	11	60	24	14	-	-	1.0E-07	Pale Brown	M	SILT with clay
BM-1	SS-10	10.00	10.45	21.6	-	NP	NP	2.61	2	0	2	11	63	22	14	-	-	6.4E-07	Dark Yellowish Brown	M	SILT with clay
BM-1	SS-11 SS-12	11.00 12.00	11.45 12.45	20.1	-	NP	NP	2.61	0	0	19	26	39	16	10 8	-	-	2.8E-06	Pale Brown	M	Sandy SILT
BM-1	SS-13 SS-14	13.00 14.00	13.45 14.45	20.2	-	NP	NP	2.61	3	3	45	19	23	7	19 24	-	-	2.6E-05	Dark Gray and Pale Yellowish Brown	SM	Silty SAND
BM-1	SS-15	15.00	15.45	5.9	-	NP	NP	2.65	37	24	21	5	9	4	>50	-	-	8.7E-05	Pale Yellowish Brown	SM	Silty SAND with gravel
BM-1	SS-16	15.62	15.77	6.3	-	NP	NP	2.59	7	4	8	15	46	20	>50	-	-	3.7E-05	Dusky Red	M	Sandy SILT

Note : NP denotes Non Plastic

* Insufficient soil for testing

Table 1b summary of Physical Properties for Borehole Samples from Mukdaharn for BM-2

Borehole No.	Sample No.	Depth (m)		Water Content (%)	Total Unit Weight (ton/m^3)	Liquid Limit (%)	Plasticity Index (%)	Specific Gravity Gs	Grain Size (%)						SPT N Value	Undrained Shear Strength		Coef. of	Colour	USCS	Soil Description
		From	To						Gravel	Sand			Silt	Clay		UC Test (ton/m^2)	UU Test (ton/m^2)	Permeability k (cm/s)			
										Coarse	Medium	Fine									
BM-2	UD-1	0.00	0.50	15.0	1.99	39.6	21.4	2.63	1	2	5	5	36	51		6.8	11.3	-	Pale Yellowish Orange	CL	Silty CLAY
BM-2	UD-2	0.50	1.00	11.7	2.06	40.7	19.3	2.63	8	3	4	1	36	48		24.3	27.1	-	Light Brown, Pale Reddish Brown	CL	Silty CLAY
BM-2	SS-1 SS-2	1.00 2.00	1.45 2.45	17.6	1.94	41.2	19.4	2.63	11	7	3	5	35	39	25 22	-	-	0.7E-08	Pale Brown	CL	Silty CLAY with sand
BM-2	SS-3	3.00	3.45	19.6	1.93	34.5	14.6	2.54	1	1	2	5	43	48	17	-	-	0.6E-08	Pale Brown	CL	Silty CLAY
BM-2	SS-4	4.00	4.45	22.0	-	30.6	11.0	2.67	1	2	1	9	41	46	18	-	-	0.3E-08	Pale Brown	CL	Silty CLAY
BM-2	SS-5	5.00	5.45	19.6	1.91	36.5	15.1	2.65	0	1	1	3	45	50	22	-	-	1.0E-08	Pale Brown	CL	Silty CLAY
BM-2	UD-3	5.00	5.50	22.9	2.06	35.0	13.2	2.65	1	2	1	2	39	55		23.1	20.7	-	Pale Yellowish Orange	CL	Silty CLAY
BM-2	SS-6 SS-7	6.00 7.00	6.45 7.45	26.2	-	NP	NP	2.64	0	1	5	23	51	20	5 6	-	-	0.6E-08	Pale Brown	M	Sandy SILT
BM-2	SS-8	8.00	8.45	27.2	-	NP	NP	2.62	0	1	5	23	53	18	8	-	-	0.7E-08	Dark Yellowish Brown	M	Sandy SILT
BM-2	SS-9 SS-10	9.00 10.00	9.45 10.45	16.1	-	31.7	10.8	2.68	0	5	10	7	35	43	37 49	-	-	0.6E-08	Pale Brown	CL	Silty CLAY
BM-2	SS-11	11.00	11.45	13.9	-	NP	NP	2.65	0	7	16	11	42	24	>50	-	-	1.8E-08	Dusky Red	M	Sandy SILT

Note : NP denotes Non Plastic

* Insufficient soil for testing

Table 1c Summary of Physical Properties for Borehole Samples from River for BR-1 to BR-5

Borehole No.	Sample No.	Depth (m)		Water Content (%)	Total Unit Weight (ton/m^3)	Liquid Limit (%)	Plasticity Index (%)	Specific Gravity Gs	Grain Size (%)					SPT N Value	Coef. Of Permeability k (cm/s)	Colour	USCS	Soil Description
		From	To						Gravel	Sand			Silt+Clay					
										Coarse	Medium	Fine						
BR-1	SS-1	0.00	0.45	1.8	-	NP	NP	2.66	94	1	4	0	1	>50	2.3E-02	Pale Brown to Pale Yellowish Brown	GW	Well graded GRAVEL with sand
BR-2	SS-1	0.00	0.45	17.6	-	NP	NP	2.61	33	19	46	1	1	2	1.7E-02	Pale Brown to Grayish Brown	SP	Poorly graded SAND
BR-2	SS-2	1.00	1.45	24.7	-	NP	NP	2.57	0	49	50	0	1	8	2.0E-02	Pale Brown to Dark Yellowish Brown	SP	Poorly graded SAND
BR-2	SS-3 SS-4	2.00	2.45	1.4	-	NP	NP	2.68	90	8	1	1	0	20 17	1.6E-02	Pale Brown to Grayish Brown	GP	Poorly graded GRAVEL with sand
BR-3	SS-1 SS-2	0.00 1.00	0.45 1.45	18.2	-	NP	NP	2.62	11	45	42	1	1	3 17	1.4E-02	Grayish Brown	SP	Poorly graded SAND
BR-3	SS-3 SS-4	2.00 3.00	2.45 3.45	20.8	-	NP	NP	2.62	5	63	32	0	0	18 25	3.6E-02	Grayish Brown	SP	Poorly graded SAND
BR-3	SS-5	4.00	4.45	6.1	-	NP	NP	2.66	91	7	1	1	0	>50	3.3E-02	Grayish Brown to Yellowish Gray	GP	Poorly graded GRAVEL with sand
BR-4	SS-1 SS-2	0.00 1.00	0.45 1.45	32.6	-	NP	NP	2.57	0	51	48	1	0	1 17	1.4E-02	Grayish Brown	SP	Poorly graded SAND
BR-4	SS-3 SS-4	2.00 3.00	2.45 3.45	22.4	-	NP	NP	2.60	2	52	44	1	1	28 8	9.5E-03	Grayish Brown	SP	Poorly graded SAND
BR-5	SS-1 SS-2	0.00 1.00	0.45 1.45	24.3	-	NP	NP	2.62	0	30	69	1	0	2 15	2.7E-02	Grayish to Blackish Red	SP	Poorly graded SAND
BR-5	SS-3 SS-5	2.00 3.00	2.45 3.45	24.4	-	NP	NP	2.59	0	52	47	0	1	24 28	2.4E-02	Grayish to Blackish Red	SP	Poorly graded SAND

Note : NP denotes Non Plastic

* Insufficient foe soil testing

Table 1d Summary of Physical Properties for Borehole Samples from Savannakhet for BS-1

Borehole No.	Sample No.	Depth (m)		Water Content (%)	Total Unit Weight (ton/m^3)	Liquid Limit (%)	Plasticity Index (%)	Specific Gravity Gs	Grain Size (%)						SPT N Value	Coef. of Permeability k (cm/s)	Colour	USCS	Soil Description
		From	To						Gravel	Sand			Silt	Clay					
										Coarse	Medium	Fine							
BS-1	SS-2 SS-3	1.00 2.00	1.45 2.45	17.7	-	41.0	19.8	2.58	3	2	1	2	44	48	19 28	0.6E-08	Pale Brown	CL	Silty CLAY
BS-1	SS4 SS-5	3.00 4.00	3.45 4.45	16.9	-	38.4	18.5	2.58	3	1	1	2	43	50	8 >50	3.1E-08	Pale Brown	CL	Silty CLAY
BS-1	SS-6 SS-7	5.00 6.00	5.45 6.45	19.0	-	29.4	11.9	2.60	0	0	4	16	31	49	48 32	0.7E-08	Pale Brown	CL	Silty CLAY with sand
BS-1	SS-8 SS-9	7.00 8.00	7.45 8.45	20.9	-	31.8	13.4	2.56	0	1	4	15	33	47	21 22	0.7E-08	Pale Brown	CL	Silty CLAY with sand
BS-1	SS-10 SS-11	9.00 10.00	9.45 10.45	20.0	-	29.9	9.1	2.58	33	1	2	6	27	31	19 >50	1.5E-08	Pale Brown and Grayish Brown	CL	Gravelly CLAY

Note : NP denotes Non Plastic

* Insufficient soil for testing

Table 1e Summary of Physical Properties for Borehole Samples from Savannakhet for BS-2

Borehole No.	Sample No.	Depth (m)		Water Content (%)	Totai Unit Weight (ton/m^3)	Liquid Limit (%)	Plasticity Index (%)	Specific Gravity Gs	Grain Size (%)						SPT N Value	Coef. of Permeability k (cm/s)	Colour	USCS	Soil Description
		From	To						Gravel	Sand			Silt	Clay					
										Coarse	Medium	Fine							
BS-2	SS-1	0.00	0.45	18.0	-	26.5	12.1	2.79	1	3	4	3	42	47	2	2.1E-08	Grayish Brown	CL	Silty CLAY
BS-2	SS-2 SS-3	1.00 2.00	1.45 2.45	23.8	1.85	43.8	21.6	2.64	1	2	1	1	43	52	15 22	0.6E-08	Pale Brown	CL	Silty CLAY
BS-2	SS-4 SS-5	3.00 4.00	3.45 4.45	23.6	1.83	34.0	12.3	2.63	0	1	1	1	41	56	16 18	0.4E-08	Pale Brown	CL	Silty CLAY
BS-2	SS-6 SS-7	5.00	5.45	27.8	-	32.6	11.4	2.57	4	2	1	4	43	46	22 14	0.7E-0.8	Pale Brown	CL	Silty CLAY
BS-2	SS-8	7.00	7.45	26.8	-	29.6	10.1	2.58	2	2	3	19	34	40	24	1.3E-08	Grayish Brown	CL	Silty CLAY with sand
BS-2	SS-9	8.00	8.45	32.4	-	*	*	2.58	1	1	2	12	39	45	15	0.4E-08	Grayish Brown	-	Silty CLAY with sand
BS-2	SS-10	9.00	9.45	29.1	-	NP	NP	2.65	3	3	17	33	34	10	30	0.4E-08	Dark Reddish Brown	SM	Silty SAND
BS-2	SS-11	10.00	10.45	23.0	-	30.8	8.7	2.64	47	3	5	7	18	20	>50	1.5E-08	Dark Reddish Brown	GC	Clayey GRAVEL with sand

Note : NP denotes Non Plastic

* Insufficient soil for testing

Table 2 Summary of Undrained Shear Characteristics of Borehole Samples from Mukdaharn

Borehole No.	Sample No.	Depth (m)		Unconfined Cmpression Test			Unconsolidated Undrained Test (Confining Stress = 5 ton/m^2)			Colour	USCS	Soil Description
		From	To	Water Content (%)	Undrained Shear Strength (ton/m^2)	Modulus @ 50% c_u (ton/m^2)	Water Content (%)	Undrained Shear Strength (ton/m^2)	Modulus @ 50% c_u (ton/m^2)			
BM-1	UD-1	0.50	1.00	18.7	9.9	497	18.9	13.9	344	Grayish Red	-	Silty CLAY
BM-1	UD-2	1.00	1.50	17.6	23.2	1197	17.8	29.1	1452	Pale Yellowish Orange	-	Silty CLAY
BM-1	UD-3	5.50	6.00	20.0	13.0	995	21.4	15.7	773	Pale Yellowish Orange	-	Silty CLAY
BM-2	UD-1	0.00	0.50	15.0	6.8	208	15.0	11.3	1050	Pale Yellowish Orange	-	Silty CLAY
BM-2	UD-2	0.50	1.00	11.7	24.3	2992	15.3	27.1	2135	Light Brown, Pale Reddish Brown	-	Silty CLAY
BM-2	UD-3	5.00	5.50	25.7	23.1	1199	20.1	20.7	837	Pale Yellowish Orange	-	Silty CLAY

Table 3a Summary of Permeability Test Results of Borehole Samples from Mukdaharn for BM-1

Borehole No.	Sample No.	Soil Description	USCS	Dry Unit Weight (ton/m^3)	Before Permeability Test			After Permeability Test			Coefficient of Permeability (cm/s)
					Total Unit Weight (ton/m^3)	Water Content (%)	Degree of Saturation (%)	Total Unit Weight (ton/m^3)	Water Content (%)	Degree of Saturation (%)	
BM-1	SS-1 SS-2	Silty CLAY	CL	1.76	2.05	16.5	92	2.19	17.7	100	1.3E-08*
BM-1	SS-3 SS-4	Silty CLAY	CL	1.70	1.93	13.5	65	2.11	22.13	100	6.4E-05**
BM-1	SS-5 SS-6	Silty CLAY	CL	1.60	1.90	18.6	76	1.96	22.7	92	7.7E-07
BM-1	SS-7 SS-8	Silty CLAY	CL	1.60	1.87	16.7	69	1.97	22.4	94	4.5E-07
BM-1	SS-9	SILT with clay	M	1.68	2.01	19.3	93	2.00	22.2	99	1.0E-07
BM-1	SS-10	SILT with clay	M	1.78	2.01	12.8	72	2.08	15.2	89	6.4E-07
BM-1	SS-11 SS-12	Sandy SILT	M	1.60	1.86	15.9	66	1.98	22.9	96	2.8E-06
BM-1	SS-13 SS-14	Silty SAND	SM	1.65	1.90	15.5	69	1.97	21.9	93	2.6E-05
BM-1	SS-15	Silty SAND with gravel	SM	1.84	1.98	7.8	47	2.14	16.9	100	8.7E-05
BM-1	SS-16	Sandy SILT	M	1.87	2.05	9.6	65	2.13	15.4	99	3.7E-05

Remarks : * From consolidation test

** High value

Table 3b Summary of Permeability Test Result of Borehole Samples from Mukdaharn for BM-2

Borehole No.	Sample No.	Soil Description	USCS	Dry Unit Weight (ton/m^2)	Before Permeability Test			After Permeability Test			Coefficient of Permeability (cm/s)
					Total Unit Weight (ton/m^2)	Water Content (%)	Degree of Saturation (%)	Total Unit Weight (ton/m^2)	Water Content (%)	Degree of Saturation (%)	
BM-2	SS-1,SS2	Silty CLAY with sand	CL	1.60	1.90	18.9	77	2.08	21.4	100	0.7E-08 *
BM-2	SS-3	Silty CLAY	CL	1.67	1.96	17.2	84	2.10	16.8	100	0.6E-08 *
BM-2	SS-4	Silty CLAY	CL	1.63	1.93	18.1	76	2.08	17.7	93	0.3E-08 *
BM-2	SS-5	Silty CLAY	CL	1.66	1.98	19.3	86	2.12	19.1	100	1.0E-08 *
BM-2	SS-6,SS-7	Sandy SILT	M	1.72	2.00	16.5	81	2.12	16.1	95	0.6E-08 *
BM-2	SS-8	Sandy SILT	M	1.72	2.00	16.2	81	2.12	16.0	97	0.7E-08 *
BM-2	SS-9,SS-10	Silty CLAY	CL	1.66	1.96	18.0	79	2.11	19.3	100	0.6E-08 *
BM-2	SS-11	Sandy SILT	M	1.71	1.99	16.3	79	2.12	17.5	99	1.8E-08 *

Note : (*) Permeability value obtained from consolidation test at vertical stress of 10 ton / m^2

Table 3c Summary of Permeability Test Result of Borehole Samples from River for BR-1 to BR-5

Borehole No.	Sample No.	Soil Description	USCS	Dry Unit Weight (g/cc)	Before Permeability Test			After Permeability Test			Coefficient of Permeability (cm/s)
					Total Unit Weight (g/cc)	Water Content (%)	Degree of Saturation (%)	Total Unit Weight (g/cc)	Water Content (%)	Degree of Saturation (%)	
BR-1	SS-1	Well graded GRAVEL with sand	GW	1.88	1.92	2.07	13	1.97	6.14	38	2.3E-02
BR-2	SS-1	Poorly graded SAND	SP	1.79	1.85	3.3	19	2.09	17.45	98	1.7E-02
BR-2	SS-2	Poorly graded SAND	SP	1.63	1.70	4.6	20	1.92	17.9	80	2.0E-02
BR-2	SS-3 SS-4	Poorly graded GRAVEL with sand	GP	1.89	1.94	2.8	18	2.06	9.2	59	1.6E-02
BR-3	SS-1 SS-2	Poorly graded SAND	SP	1.67	1.74	4.3	20	2.03	21.4	99	1.4E-02
BR-3	SS-3 SS-4	Poorly graded SAND	SP	1.64	1.71	4.2	18	1.97	22.2	93	3.6E-02
BR-3	SS-5	Poorly graded GRAVEL with sand	GP	1.76	1.83	4.1	21	2.01	13.5	72	3.3E-02
BR-4	SS-1 SS-2	Poorly graded SAND	SP	1.56	1.63	4.3	17	1.92	25.4	96	1.4E-02
BR-4	SS-3 SS-4	Poorly graded SAND	SP	1.65	1.72	4.6	20	2.00	22.6	99	9.5E-03
BR-5	SS-1 SS-2	Poorly graded SAND	SP	1.54	1.62	5.1	19	1.94	25.5	96	2.7E-02
BR-5	SS-3 SS-4	Poorly graded SAND	SP	1.55	1.63	5.3	20	1.95	25.7	99	2.4E-02

Table 3d Summary of Permeability Test Result of Borehole Samples from Suvannakhet

Borehole No.	Sample No.	Soil Description	USCS	Dry Unit Weight (ton/m^2)	Before Permeability Test			After Permeability Test			Coefficient of Permeability (cm/s)
					Total Unit Weight (ton/m^2)	Water Content (%)	Degree of Saturation (%)	Total Unit Weight (ton/m^2)	Water Content (%)	Degree of Saturation (%)	
BS-1	SS-2,SS-3	Silty CLAY	CL	1.79	2.12	18.40	100	2.24	17.30	100	0.6E-08 *
BS-1	SS-4,SS5	Silty CLAY	CL	1.59	1.87	17.4	73	2.07	21.7	100	3.1E-08 *
BS-1	SS-6,SS-7	Silty CLAY with sand	CL	1.69	1.96	16.2	84	2.12	18.2	100	0.7E-08 *
BS-1	SS-8,SS-9	Silty CLAY with sand	CL	1.72	2.02	17.4	87	2.16	17.5	100	0.7E-08 *
BS-1	SS-10,SS-11	Gravelly CLAY	CL	1.85	2.13	15.2	95	2.27	14.0	100	1.5E-08 *
BS-2	SS-1	Silty CLAY	CL	1.78	2.06	15.5	77	2.17	13.5	82	2.1E-08 *
BS-2	SS-2,SS-3	Silty CLAY	CL	1.87	2.16	15.3	99	2.30	19.9	100	0.6E-08 *
BS-2	SS-4,SS-5	Silty CLAY	CL	1.85	2.13	14.9	94	2.28	14.7	100	0.4E-08 *
BS-2	SS-6,SS-7	Silty CLAY	CL	1.72	2.01	16.7	87	2.12	16.0	100	0.7E-08 *
BS-2	SS-8	Silty CLAY with sand	CL	1.69	1.97	16.4	81	2.11	17.1	100	1.3E-08 *
BS-2	SS-9	Silty CLAY with sand	-	1.60	1.88	17.5	74	2.02	18.9	94	0.4E-08 *
BS-2	SS-10	Silty SAND	SM	1.59	1.84	15.7	62	2.03	20.5	95	0.4E-08 *
BS-2	SS-11	Clayey GRAVEL with sand	GC	1.66	1.96	18.1	81	2.07	16.6	94	1.5E-08 *

Note : (*) Permeability value obtained from consolidation test at vertical stress of 10 ton / m^2

Table 4 Summary of Unconfined Compression Tests on Rock Samples

Borehole No.	Sample No.	Depth (m)	Total Unit Weight (ton/m^3)	Specific Gravity (Gs)	Unconfined Compressive Strength (ton/m^2)	Strain at Failure (%)	Young's Modulus (ton/m^2)	Rock Type
BR-1	1	3.00-5.77	2.6	2.68	2,028	0.8	341,321	Sandstone
BR-2	1	6.75-9.50	2.4	2.64	2,661	1.0	264,862	Sandstone
BR-3	1	4.50-9.50	2.5	2.63	1,901	0.8	217,339	Mudstone
BR-4	1	4.40-9.40	2.4	2.69	2,154	0.8	236,189	Sandstone
BR-5	1	6.50-6.20	2.4	2.64	2,363	0.8	406,296	Sandstone
BR-6	1	6.50-9.20	2.5	2.64	1,120	0.5	358,249	Sandstone
BM-1	1	15.75-21.00	2.5	2.68	2,859	0.8	376,534	Mudstone
BM-2	1	11.45-17.00	2.3	2.69	410	0.1	410,000	Mudstone
BS-1	1	11.50-17.00	2.3	2.66	1,457	0.9	218,395	Sandstone
BS-2	1	11.00-16.80	2.4	2.69	1,901	0.6	401,094	Sandstone

Table 5 Summary of Physical Properties for Approach Road

Location	Borehole No.	Water Content (%)	Dry Unit Weight (ton/m^3)	Liquid Limit (%)	Plasticity Index (%)	Specific Gravity Gs	Grain Size (%)						Colour	USCS	Soil Description
							Gravel	Sand			Silty	Clay			
								Coarse	Medium	Fine					
Mukdaharn	BH-1+300	17.1	1.66*	NP	NP	2.62	1	1	18	19	48	13	Grayish Brown	M	Sandy SILT
Mukdaharn	BH-2+400	19.0	1.56*	NP	NP	2.65	1	2	16	17	52	12	Pale Brown	M	Sandy SILT
Mukdaharn	BH-3+500	20.7	1.67*	NP	NP	2.63	2	2	13	10	64	9	Grayish Brown	M	Sandy SILT
Mukdaharn	BH-4+600	19.4	1.65*	NP	NP	2.61	3	4	16	8	61	8	Grayish Brown	M	Sandy SILT
Savannakhet	BH-1+200	11.2	1.40*	NP	NP	2.65	0	10	47	10	19	14	Grayish Red	SM	Silty SAND
Savannakhet	BH-2+300	17.8	1.42*	NP	NP	2.58	0	8	42	14	18	18	Grayish Red	SM	Silty SAND
Savannakhet	BH-3+400	21.5	1.42*	NP	NP	2.64	0	9	38	14	23	16	Grayish Red	SM	Silty SAND
Savannakhet	BH-4+500	14.5	1.45*	NP	NP	2.62	0	8	35	13	27	17	Grayish Red	SM	Silty SAND
Savannakhet	BH-5+600	17.9	1.43*	NP	NP	2.60	0	7	30	14	30	19	Grayish Red	SM	Silty SAND
Savannakhet	BH-6+700	17.0	1.40*	NP	NP	2.64	0	8	35	14	26	17	Grayish Red	SM	Silty SAND
Savannakhet	BH-7+800	17.1	1.29*	NP	NP	2.60	0	9	29	13	26	23	Grayish Red	SM	Silty SAND
Savannakhet	BH-8+900	17.5	1.54*	NP	NP	2.60	0	13	31	10	26	20	Grayish Red	SM	Silty SAND

Note : * Data from Field Density Test

Table 6 Summary of Material Test Results for Approach Road

Location	Borehole No.	Field Density Test		Compaction Test		Soaked CBR Value					Coefficient of Permeability, k	Colour	USCS	Soil Description
		Dry Unit Weight (ton/m^3)	Water Content (%)	Mam.Dry Density (ton/m^3)	Optimum Moisture Content (%)	Dry Density (%)	Moisture Content (%)	Swelling Index (%)	CBR @ 0.1 in (%)	CBR @ 0.2 in (%)	cm/sec			
Mukdaharn	BH-1+300	1.66	19.6	1.99	8.6	1.60	19.5	-0.1	0.5	0.4	3.33E-07	Grayish Brown	M	Sandy SILT
Mukdaharn	BH-2+400	1.56	20.1	1.99	8.3	1.58	16.3	-0.4	0.3	0.4	2.31E-06	Pale Brown	M	Sandy SILT
Mukdaharn	BH-3+500	1.67	19.2	2.00	8.0	1.69	17.3	-0.1	0.6	0.8	1.61E-07	Grayish Brown	M	Sandy SILT
Mukdaharn	BH-4+600	1.65	16.6	1.98	8.7	1.66	16.0	0.0	0.6	0.5	3.61E-07	Grayish Brown	M	Sandy SILT
Savannakhet	BH-1+200	1.40	24.3	2.07	9.3	1.41	25.0	-0.8	0.1	0.1	2.60E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-2+300	1.42	15.6	2.02	9.3	1.44	19.0	-1.3	0.2	0.2	1.61E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-3+400	1.42	22.0	2.06	9.6	1.43	27.1	-0.3	1.2	1.0	4.03E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-4+500	1.45	20.6	2.05	9.2	1.48	24.1	-0.2	1.7	1.4	1.30E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-5+600	1.43	16.3	2.06	9.5	1.42	24.7	-0.3	0.3	0.2	2.50E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-6+700	1.40	16.9	2.09	9.2	1.42	23.3	-3.0	0.4	0.3	1.59E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-7+800	1.29	18.7	2.06	9.5	1.32	24.1	-3.1	0.2	0.2	2.23E-08	Grayish Red	SM	Silty SAND
Savannakhet	BH-8+900	1.54	15.3	2.02	10.3	1.53	24.6	-3.7	0.2	0.2	1.59E-08	Grayish Red	SM	Silty SAND

Table 7a Summary of Material Test Results for Fine Material

Location	Borehole No.	Sample No.	Grain Size (%)					pH Value	Salinity NaCl	Average DL (%)	USCS	Soil Description
			Gravel	Sand			Silty+ Clay					
				Coarse	Medium	Fine						
Savannakhet	SF-1	No.1	6	22	70	1	1	6.7	0.0	0.142	SP	Poorly graded SAND
Savannakhet	SF-2	No.2	4	20	74	1	1	6.8	0.0	0.153	SP	Poorly graded SAND
Savannakhet	SF-3	No.3	3	22	72	2	1	7.0	0.0	0.176	SP	Poorly graded SAND
Pakse	PF-1	No.1	0	6	89	2	3	7.1	0.0	0.104	SP	Poorly graded SAND
Pakse	PF-2	No.2	0	6	89	2	3	6.9	0.0	0.160	SP	Poorly graded SAND
Pakse	PF-3	No.3	1	7	88	3	1	6.8	0.0	0.114	SP	Poorly graded SAND
Mukdaharn	MF-1	No.1	2	37	55	2	4	6.8	0.0	0.208	SP	Poorly graded SAND
Mukdaharn	MF-2	No.2	2	37	58	1	2	6.9	0.0	0.230	SP	Poorly graded SAND
Mukdaharn	MF-3	No.3	6	46	46	2	0	6.8	0.0	0.179	SM	Poorly graded SAND

Table 7b Summary of Material Test Results for Coarse Material

Location	Borehole No.	Sample No.	Grain Size (%)					pH Value	Salinity NaCl (g/l)	LA Abrasion, % of Wear (%)	USCS	Soil Description
			Gravel	Sand			Silty+ Clay					
				Coarse	Medium	Fine						
Savannakhet	SC-1	No.1	100	0	0	0	0	8.2	0.0	28.6	GP	Poorly graded Gravel
Savannakhet	SC-2	No.2	100	0	0	0	0	8.0	0.0	28.7	GP	Poorly graded Gravel
Savannakhet	SC-3	No.3	100	0	0	0	0	7.7	0.0	29.6	GP	Poorly graded Gravel
Thakhek	TC-1	No.1	100	0	0	0	0	9.1	0.0	23.8	GP	Poorly graded Gravel
Thakhek	TC-2	No.2	100	0	0	0	0	9.1	0.0	23.5	GP	Poorly graded Gravel
Thakhek	TC-3	No.3	100	0	0	0	0	8.7	0.0	23.6	GP	Poorly graded Gravel
Mukdaharn	MC-1	No.1	100	0	0	0	0	7.6	0.0	30.3	GP	Poorly graded Gravel
Mukdaharn	MC-2	No.2	100	0	0	0	0	7.9	0.0	29.2	GP	Poorly graded Gravel
Mukdaharn	MC-3	No.3	100	0	0	0	0	8.2	0.0	28.1	GP	Poorly graded Gravel

Table 7c Summary of Material Test Results for Banking Material

Location	Borehole No.	Sample No.	Grain Size (%)					Compaction Test		CBR Value									pH Value	Salinity NaCl	USCS	Soil Description
			Gravel	Sand			Silty+ Clay	Mam. Dry Density	Optimum Moisture Content	Soaked					Unsoaked							
				Coarse	Medium	Fine				Dry Density	Moisture Content	Swelling index	CBR @ 0.1 in	CBR @ 0.2 in	Dry Density	Moisture Content	CBR @ 0.1 in	CBR @ 0.2 in				
								(ton/m^3)	(%)	(ton/m^3)	(%)	(%)	(%)	(%)	(ton/m^3)	(%)	(%)	(%)		(g/l)		
Savannakhet	BM-1	No.1	4	7	13	5	71	1.91	13.0	1.88	13.3	0.5	8.0	7.4	1.84	12.5	104.5	93.2	4.3	0.0	-	Sandy CLAY
Savannakhet	BM-1	No.2	68	4	3	1	24	1.97	12.6	2.01	12.8	1.2	17.6	19.8	2.03	12.5	29.0	40.0	5.0	0.0	GM	Silty GRAVEL
Savannakhet	BM-1	No.3	21	8	6	2	63	1.88	14.2	1.89	15.8	2.3	10.8	10.8	1.88	14.6	54.5	49.9	4.5	0.0	-	Gravelly CLAY with sand
Savannakhet	BM-2	No.1	1	10	22	9	58	1.94	13.1	1.97	12.1	1.3	33.1	32.6	1.95	12.2	82.7	84.3	4.1	0.0	-	Sandy CLAY
Savannakhet	BM-2	No.2	39	9	14	6	32	1.96	12.8	1.93	16.0	0.2	6.6	8.1	2.02	11.5	16.5	20.7	4.4	0.0	GC	Clayey GRAVEL with sand
Savannakhet	BM-2	No.3	22	6	10	4	58	1.85	17.0	1.82	14.7	0.2	13.7	10.8	1.89	16.0	93.3	87.6	4.3	0.0	-	Sandy CLAY with gravel
Mukdaharn	BM-3	No.1	0	22	32	6	40	2.10	9.2	2.10	10.0	0.3	20.0	23.0	2.09	9.7	25.3	31.5	4.2	0.0	-	Clayey SAND
Mukdaharn	BM-3	No.2	1	17	35	9	38	2.09	9.2	2.11	10.6	0.2	9.4	12.6	2.08	10.2	18.0	22.9	4.5	0.0	-	Clayey SAND
Mukdaharn	BM-3	No.3	1	11	38	7	43	2.12	6.1	2.05	11.5	0.1	66.8	97.4	2.12	5.3	105.8	>105	5.1	0.0	SM	Silty SAND

Table 8 Summary of Sieve Analysis for River Bed Sample of Second Mekong Bridge Construction Project

Location	Sample No.	Type of Sample	Grain Size (%)					Colour	USCS	Soil Description
			Gravel	Sand			Silty+ Clay			
				Coarse	Medium	Fine				
River Bed	No.1	SAND	38	41	20	1	0	Pale to Grayish Brown	SP	Poorly graded SAND with gravel
River Bed	No.2	GRAVEL	96	2	2	0	0	Pale to Grayish Brown	GW	Well graded GRAVEL

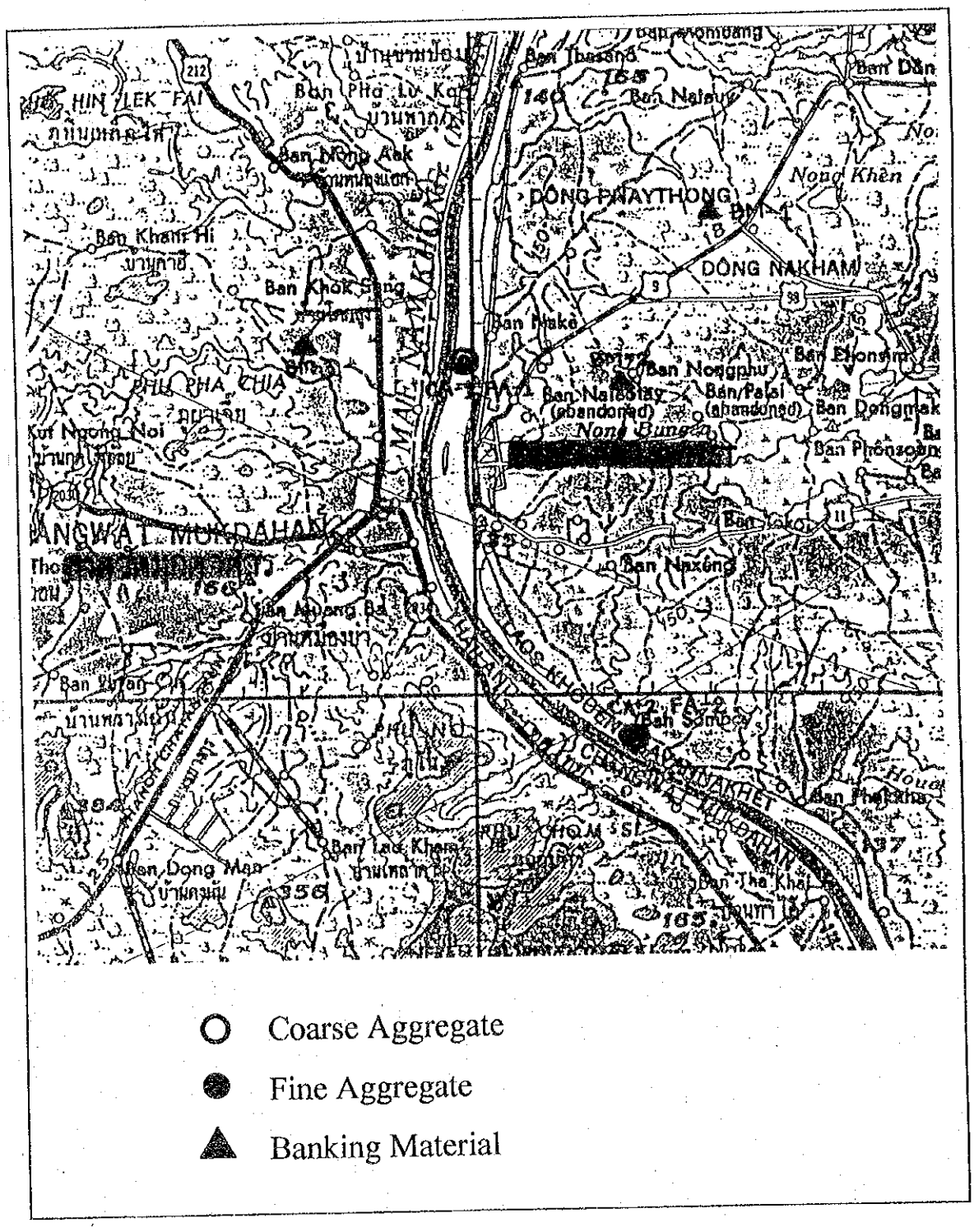
Table 9 Summary of Alkali-Silica Reaction Test Results

Location	Borehole No.	Sample No.	Original Material	USCS	Original Soil Description	Average Axial Strain (DL, %) @ Curing Time (day)											Average DL (%)
						1*	2**	3	5	7	9	10	11	12	13	16	
Savannakhet	SC-1	No.1	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.053	0.055	0.070	0.126	0.170	-	-	0.175	-	0.201	0.148
Savannakhet	SC-2	No.2	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.048	0.066	0.129	0.196	0.253	-	-	0.238	-	0.257	0.209
Savannakhet	SC-3	No.3	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.049	0.049	0.148	0.179	0.210	-	-	0.252	-	0.268	0.219
Thakhek	TC-1	No.1	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.057	0.098	0.123	0.165	0.160	-	-	0.185	-	0.213	0.156
Thakhek	TC-2	No.2	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.041	0.066	0.081	0.111	0.114	-	-	0.122	-	0.153	0.113
Thakhek	TC-3	No.3	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.044	0.097	0.139	0.180	0.184	-	-	0.206	-	0.214	0.169
Mukdaharn	MC-1	No.1	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.045	0.096	0.123	0.131	-	0.139	-	-	0.167	0.191	0.146
Mukdaharn	MC-2	No.2	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.042	0.076	0.098	0.125	-	0.139	-	-	0.151	0.179	0.137
Mukdaharn	MC-3	No.3	Coarse Aggregate	GP	Poorly graded Gravel	0.000	0.050	0.074	0.139	0.136	-	0.179	-	-	0.160	0.184	0.135
Savannakhet	SF-1	No.1	Fine Aggregate	SP	Poorly graded SAND	0.000	0.048	0.071	0.089	0.150	0.166	-	-	-	0.184	0.191	0.142
Savannakhet	SF-2	No.2	Fine Aggregate	SP	Poorly graded SAND	0.000	0.044	0.053	0.098	0.149	0.167	-	-	-	0.187	0.196	0.153
Savannakhet	SF-3	No.3	Fine Aggregate	SP	Poorly graded SAND	0.000	0.053	0.058	0.072	0.109	0.131	-	-	-	0.203	0.230	0.176
Pakse	PF-1	No.1	Fine Aggregate	SP	Poorly graded SAND	0.000	0.051	0.071	0.085	0.111	0.135	-	-	0.142	-	0.155	0.104
Pakse	PF-2	No.2	Fine Aggregate	SP	Poorly graded SAND	0.000	0.041	0.051	0.056	0.079	0.119	-	-	0.158	-	0.201	0.160
Pakse	PF-3	No.3	Fine Aggregate	SP	Poorly graded SAND	0.000	0.041	0.054	0.084	0.089	0.104	-	-	0.118	-	0.155	0.114
Mukdaharn	MF-1	No.1	Fine Aggregate	SP	Poorly graded SAND	0.000	0.064	0.083	0.099	0.146	0.204	-	0.250	-	-	0.272	0.208
Mukdaharn	MF-2	No.2	Fine Aggregate	SP	Poorly graded SAND	0.000	0.052	0.076	0.105	0.154	0.177	-	0.234	-	-	0.282	0.230
Mukdaharn	MF-3	No.3	Fine Aggregate	SM	Poorly graded SAND	0.000	0.051	0.080	0.113	0.148	0.208	-	0.231	-	-	0.231	0.179

Note : 1* denotes Curing in Air 2** denotes Curing in Water @ 80°c

Cement used = Portland cement Type I

Average DL = Axial Strain @ 16 days - Axial Strain @ 2 days

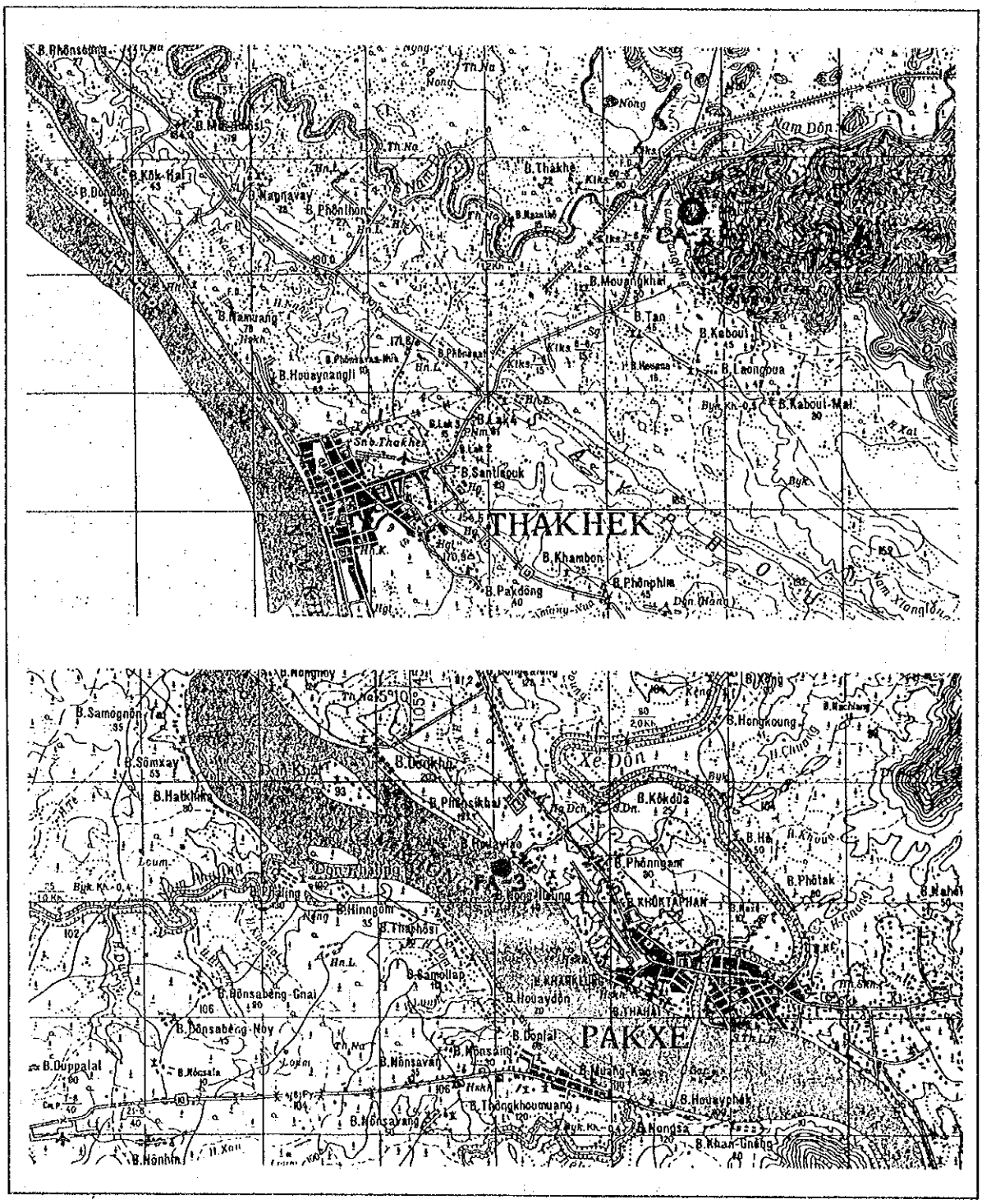


○ Coarse Aggregate

● Fine Aggregate

▲ Banking Material

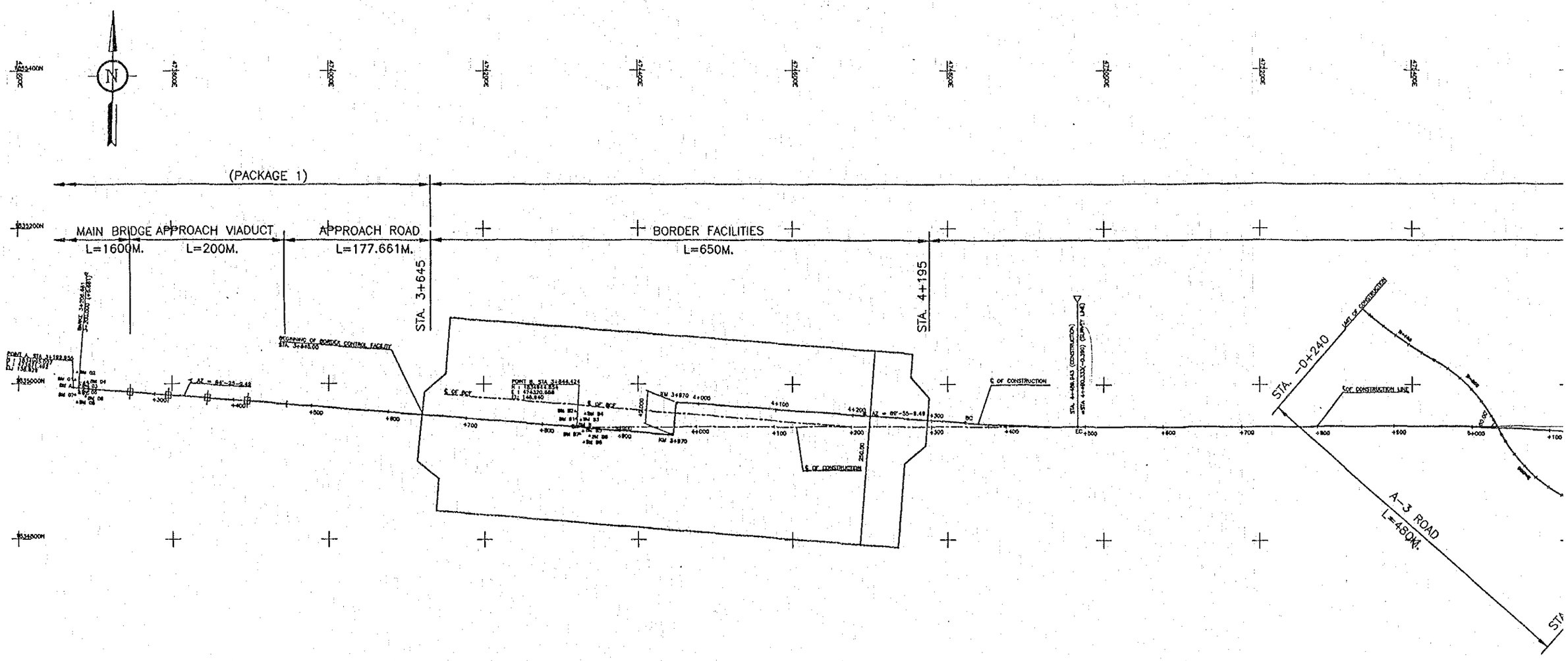
Location of material sampling at Mukdaharn and Savannakhet



Location of material sampling at Thakhek and Pakxe

B. Topographic Survey Result

B1. Bench Mark Data-The Lao PDR side



REV.	DATE	DESCRIPTION	APPROVED

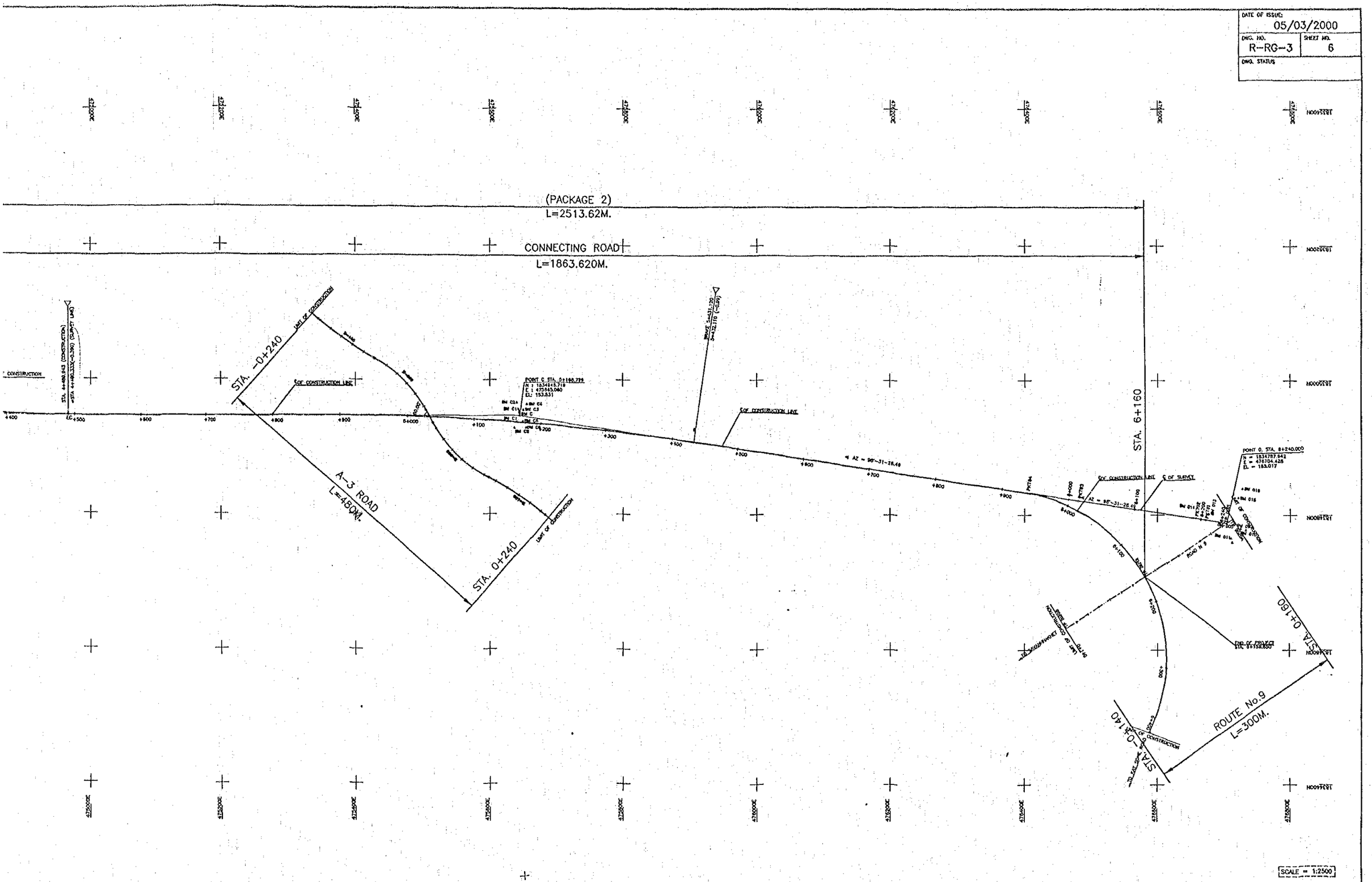
PROJECT STUDY TEAM

ORIENTAL CONSULTANTS CO., LTD.

in association with

NIPPON KOEI CO., LTD.

DATE OF ISSUE: 05/03/2000	
DWG. NO. R-RG-3	SHEET NO. 6
DWG. STATUS	



REV.	DATE	DESCRIPTION	APPROVED

PROJECT STUDY TEAM
ORIENTAL CONSULTANTS CO., LTD.
in association with
NIPPON KOEI CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY
LAO PEOPLE'S DEMOCRATIC REPUBLIC
MINISTRY OF COMMUNICATION, TRANSPORT, POST AND CONSTRUCTION
KINGDOM OF THAILAND
MINISTRY OF TRANSPORT AND COMMUNICATIONS
DEPARTMENT OF HIGHWAYS

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

QUALITY RECORD	NAME	SIGNATURE	DATE
DESIGN	H. Ohta		
DESIGN CHECK	Y. Masubuchi		
SUBMITTED	A. Hirotani		
APPROVED	P. Viraphanth		
	Mr.S. Temiyabutra		

DWG. TITLE:
ALIGNMENT LAYOUT
LAO PDR SIDE
B1-1

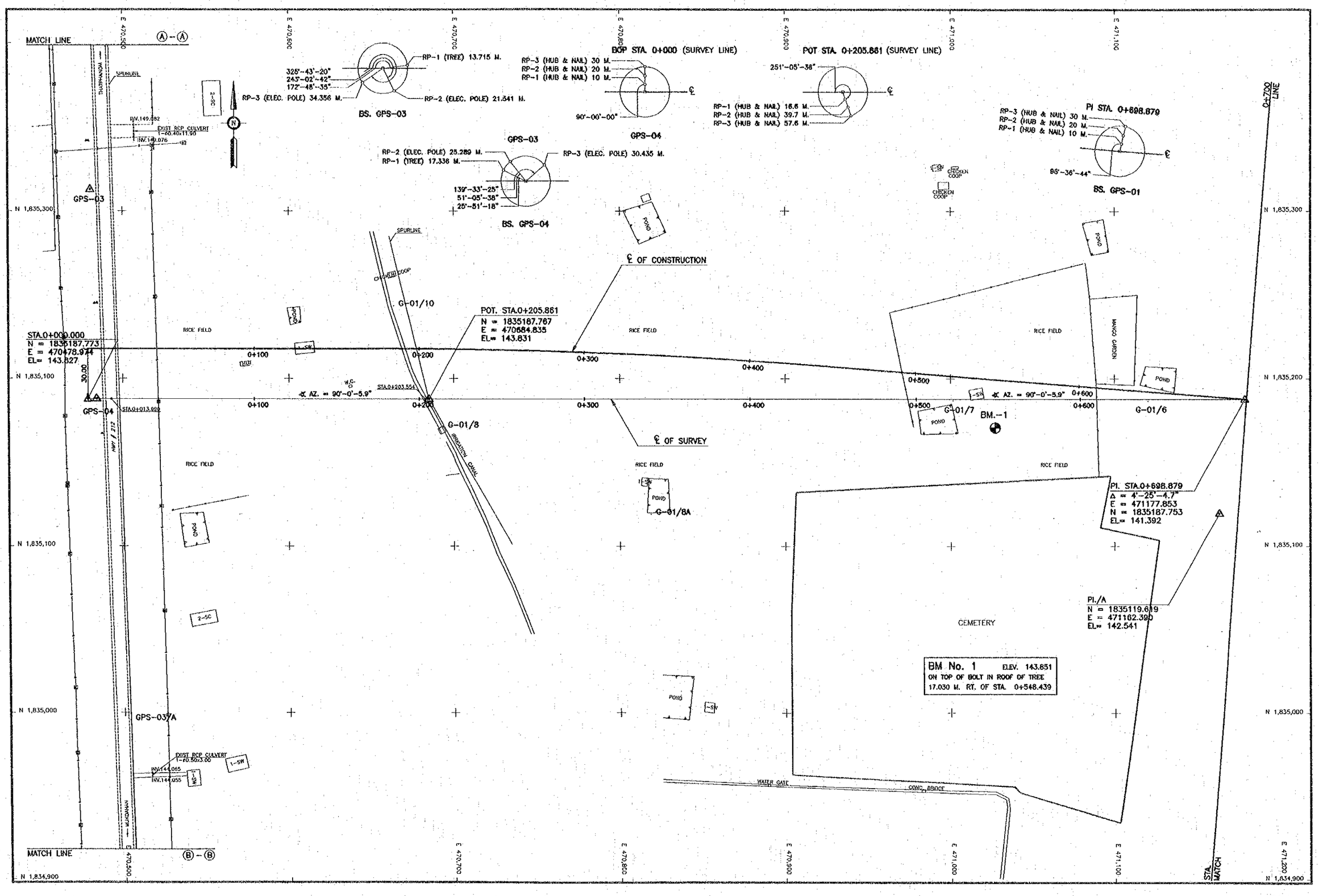
C:\-SUB\OKI\ROW-LAO.dwg

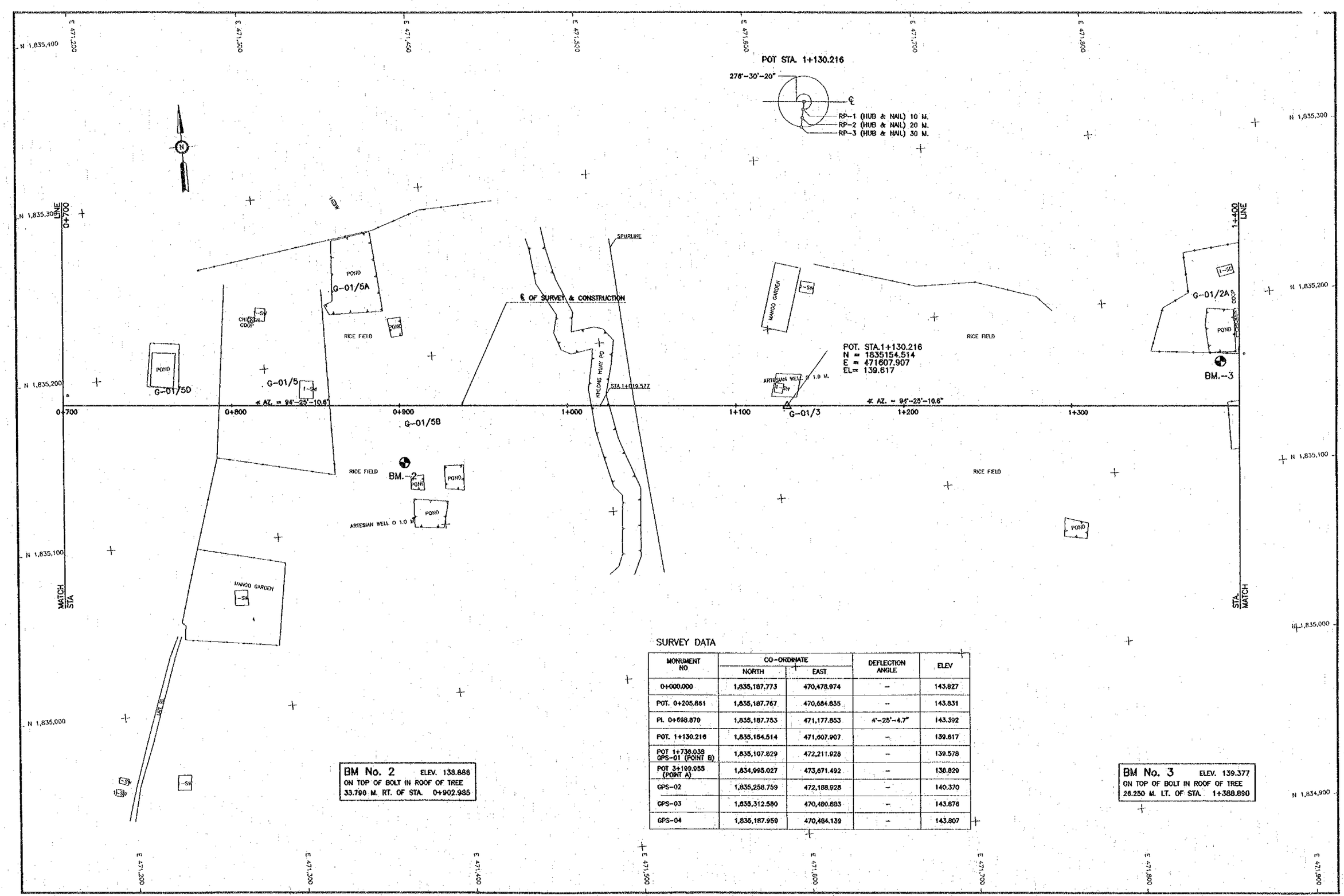
List of Coordinate Calculation of BM System.

PCOD	POINT	X	Y	Z
GPS	01	1835107.829	472211.928	139.577
BM	A	1834995.027	473671.492	138.829
BM	B	1834944.854	474320.686	148.940
BM	C	1834946.719	475645.060	153.531
BM	00	1834787.942	476704.428	165.017
BM	01	1835004.670	473674.142	138.971
BM	02	1835014.561	473675.786	138.705
BM	03	1834999.103	473680.624	138.902
BM	04	1835003.179	473689.755	138.826
BM	05	1834989.857	473680.052	139.019
BM	06	1834984.686	473688.611	138.819
BM	07	1834985.555	473674.697	138.839
BM	08	1834976.082	473677.903	138.749
BM	09	1834780.417	476726.163	164.595
BM	010	1834777.800	476733.722	164.693
BM	011	1834765.869	476710.893	164.624
BM	012	1834760.111	476712.579	164.669
BM	013	1834801.504	476677.557	163.888
BM	014	1834810.470	476659.791	163.891
BM	015	1834825.822	476722.568	163.689
BM	016	1834839.351	476729.047	163.450
BM	B1	1834956.548	475579.830	148.414
BM	B2	1834966.467	475578.560	148.724
BM	B3	1834955.250	475586.169	148.519
BM	B4	1834963.870	475591.237	149.080
BM	B5	1834941.380	475589.612	148.905
BM	B6	1834936.131	475598.123	148.885
BM	B7	1834937.819	475585.829	148.253
BM	B8	1834927.245	475591.505	146.700
BM	C1	1834956.475	475642.863	153.090
BM	C2	1834966.260	475640.659	152.591
BM	C3	1834955.256	475650.230	153.131
BM	C4	1834963.826	475655.422	152.219
BM	C5	1834937.868	475649.712	154.140
BM	C6	1834929.016	475654.365	154.710
BM	C7	1834937.473	475641.251	154.564
BM	C8	1834928.246	475637.449	155.195

B. Topographic Survey Result

B2. Bench Mark Data-Thailand side


MATCH LINE
Ⓐ – Ⓐ
E 470,500
E 470,600
E 470,700
E 470,800
E 470,900
E 471,000
E 471,100
E 471,200
N 1,835,300
N 1,835,200
N 1,835,100
N 1,835,000
N 1,834,900
SPURLINE
THAPHANOM
R/W.149.052
EXIST RCP CULVERT
1-Ø0.40x11.90
INV.149.076
2-SC
GPS-03
RP-1 (TREE) 13.715 M.
326°-43'-20"
245°-02'-42"
172°-48'-35"
RP-3 (ELEC. POLE) 34.356 M.
RP-2 (ELEC. POLE) 21.341 M.
BS. GPS-03
BOP STA. 0+000 (SURVEY LINE)
RP-3 (HUB & NAIL) 30 M.
RP-2 (HUB & NAIL) 20 M.
RP-1 (HUB & NAIL) 10 M.
90°-00'-00"
GPS-04
POT STA. 0+205.861 (SURVEY LINE)
251°-05'-38"
RP-1 (HUB & NAIL) 16.6 M.
RP-2 (HUB & NAIL) 39.7 M.
RP-3 (HUB & NAIL) 57.6 M.
PI STA. 0+698.879
RP-3 (HUB & NAIL) 30 M.
RP-2 (HUB & NAIL) 20 M.
RP-1 (HUB & NAIL) 10 M.
95°-36'-44"
BS. GPS-01
GPS-03
RP-2 (ELEC. POLE) 25.289 M.
RP-1 (TREE) 17.336 M.
RP-3 (ELEC. POLE) 30.435 M.
139°-33'-25"
51°-05'-38"
25°-51'-18"
BS. GPS-04
CHICKEN COOP
POND
℄ OF CONSTRUCTION
G-01/10
POT. STA.0+205.861
N = 1835187.767
E = 470684.835
EL= 143.831
STA.0+000.000
N = 1835187.773
E = 470478.944
EL= 143.827
RICE FIELD
MANGO GARDEN
0+100
0+200
0+300
0+400
0+500
0+600
30.00
W.C.
STA.0+203.554
℄ AZ. = 90°-0'-5.9"
STA.0+013.695
G-01/8
IRRIGATION CANAL
G-01/7
BM.-1
G-01/6
℄ OF SURVEY
G-01/8A
PI. STA.0+698.879
Δ = 4°-25'-4.7"
E = 471177.853
N = 1835187.753
EL= 141.392
PI./A
N = 1835119.619
E = 471162.390
EL= 142.541
CEMETERY
BM No. 1 ELEV. 143.851
ON TOP OF BOLT IN ROOF OF TREE
17.030 M. RT. OF STA. 0+548.439
GPS-03A
EXIST RCP CULVERT
1-Ø0.50x3.00
INV.144.065
INV.144.055
1-SW
WATER GATE
CONC. BRIDGE
0+700 LINE
STA. MATCH
HWY # 212

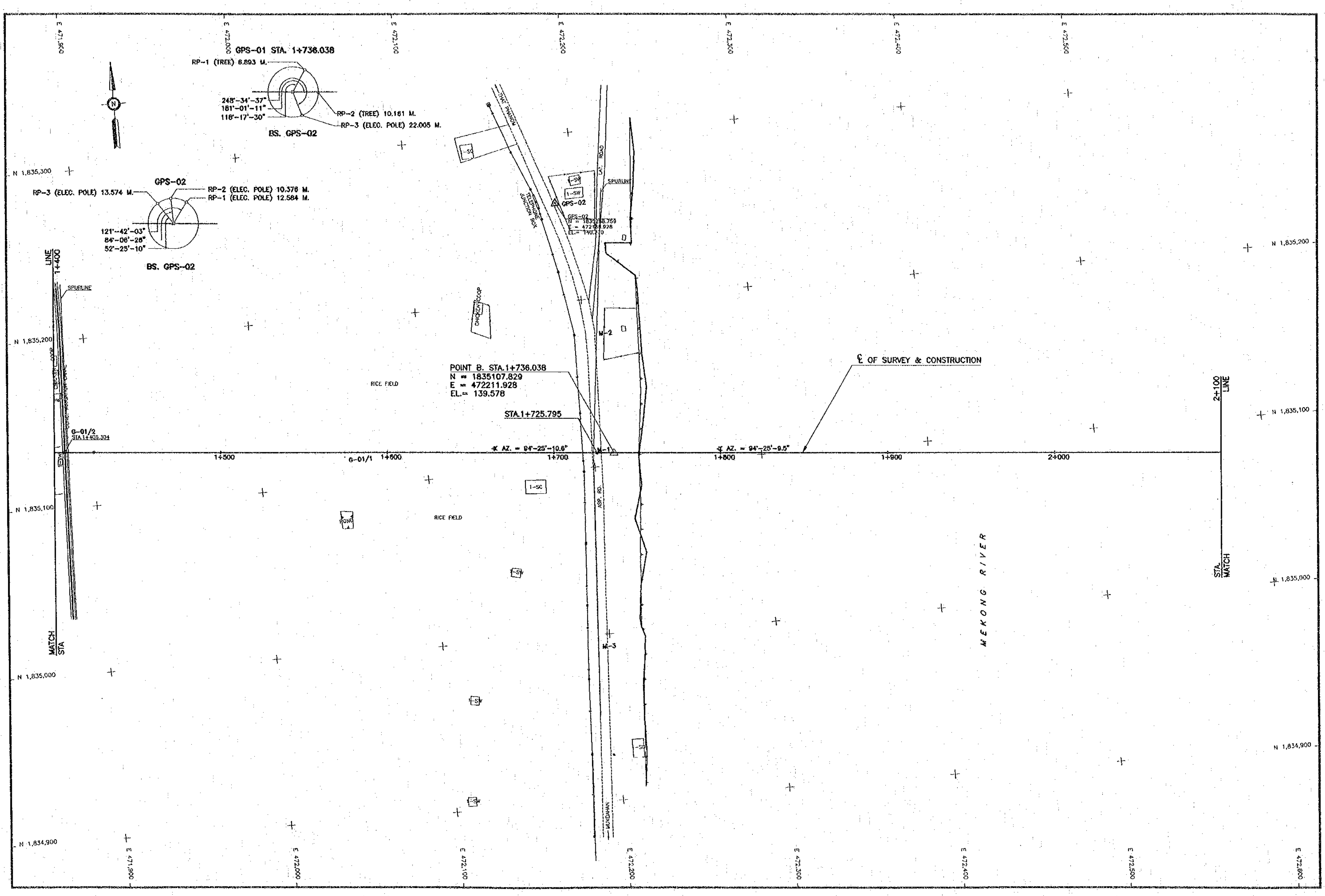


BM No. 2 ELEV. 138.886
ON TOP OF BOLT IN ROOF OF TREE
33.790 M. RT. OF STA. 0+902.985

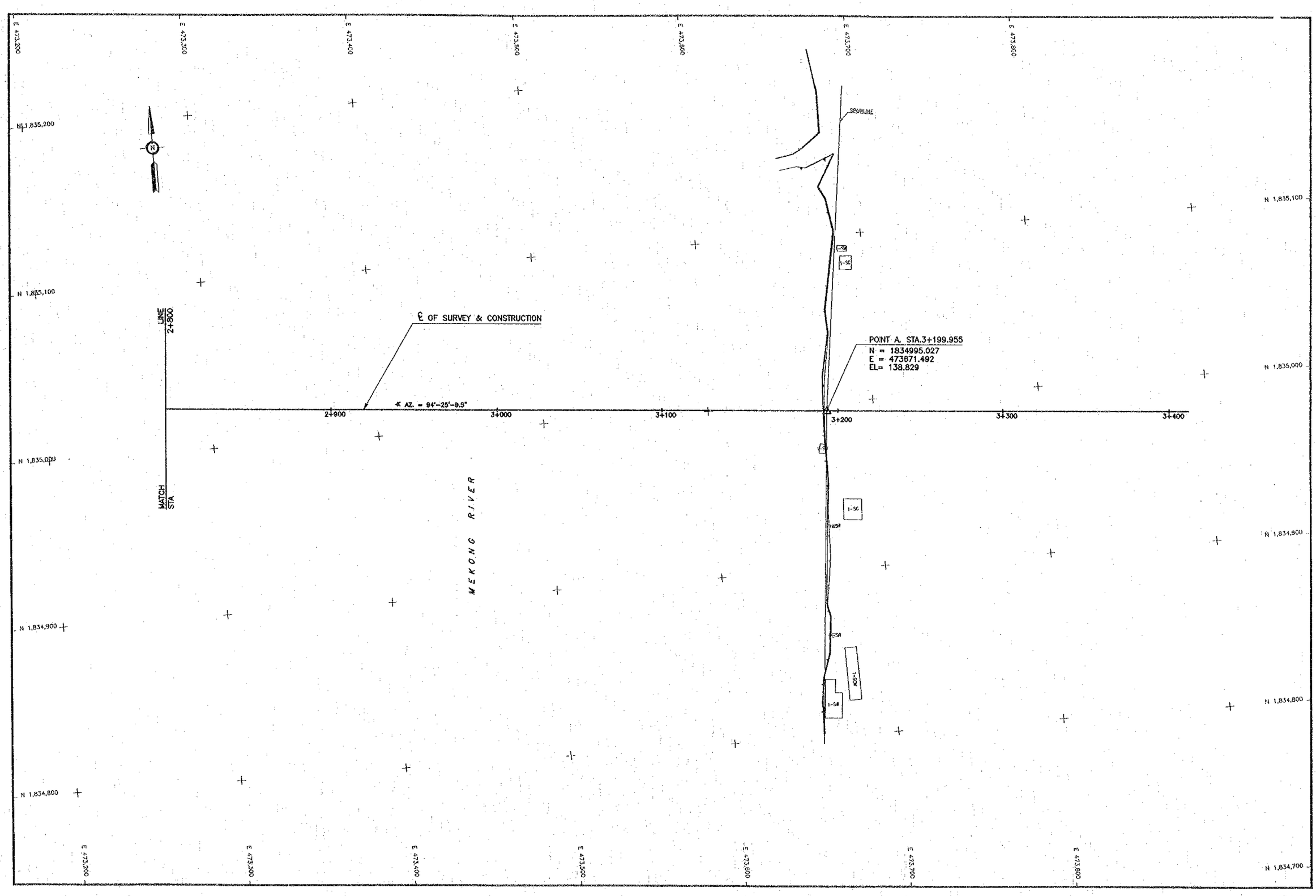
BM No. 3 ELEV. 139.377
ON TOP OF BOLT IN ROOF OF TREE
26.250 M. LT. OF STA. 1+388.880

SURVEY DATA

MONUMENT NO	CO-ORDINATE		DEFLECTION ANGLE	ELEV
	NORTH	EAST		
0+000.000	1,835,187.773	470,478.974	--	143.827
POT. 0+205.881	1,835,187.767	470,684.835	--	143.831
PI. 0+698.870	1,835,187.753	471,177.853	4°-25'-4.7"	143.392
POT. 1+130.216	1,835,154.514	471,607.907	--	139.617
POT 1+736.038 GPS-01 (POINT B)	1,835,107.829	472,211.928	--	139.578
POT 3+199.055 (POINT A)	1,834,995.027	473,671.492	--	138.829
GPS-02	1,835,258.759	472,188.928	--	140.370
GPS-03	1,835,312.580	470,480.683	--	143.676
GPS-04	1,835,187.959	470,484.139	--	143.807



GPS-01 STA. 1+736.038
RP-1 (TREE) 6.893 M.
248°-34'-37"
181°-01'-11"
118°-17'-30"
RP-2 (TREE) 10.161 M.
RP-3 (ELEC. POLE) 22.005 M.
BS. GPS-02
GPS-02
RP-3 (ELEC. POLE) 13.574 M.
RP-2 (ELEC. POLE) 10.376 M.
RP-1 (ELEC. POLE) 12.584 M.
121°-42'-03"
84°-06'-28"
52°-25'-10"
BS. GPS-02
LINE 1+400
MATCH STA
G-01/2
RICE FIELD
POINT B. STA.1+736.038
N = 1835107.829
E = 472211.928
EL.= 139.578
STA.1+725.795
℄ OF SURVEY & CONSTRUCTION
℄ AZ. = 94°-25'-10.6"
℄ AZ. = 94°-25'-9.5"
1+500
G-01/1
1+600
1+700
1+800
1+900
2+000
RICE FIELD
M-2
M-3
SPURLINE
ROAD
MEKONG RIVER
2+100 LINE
MATCH STA


E 473,200
E 473,300
E 473,400
E 473,500
E 473,600
E 473,700
E 473,800
N 1,835,200
N 1,835,100
N 1,835,000
N 1,834,900
N 1,834,800
N 1,834,700
SEVERLINE
℄ OF SURVEY & CONSTRUCTION
LINE 2+800
MATCH STA
MEKONG RIVER
AZ. = 94°-25'-9.5"
2+900
3+000
3+100
3+200
3+300
3+400
POINT A. STA.3+199.955
N = 1834995.027
E = 473671.492
EL= 138.829
1-SC
1-SW
1-SP

STA.	BS	HI	IFS	FS	ELEV.(MSL)	REMARK
GPS-01	1.957	141.535			139.578	
1+750.000			2.05		139.49	RIVERBANK
1+729.000			1.85		139.69	Edge of Asp. Rd.
1+726.000			1.37		140.17	CL
1+723.000			1.48		140.06	Edge of Asp. Rd.
1+720.000			2.09		139.45	
1+700.000			2.08		139.46	
M-1			1.455		140.08	
M-1			1.278		140.257	
M-3			1.506		140.029	
TP-1	0.568	139.892		2.211	139.324	
1+680.000			1.43		138.46	
1+660.000			2.1		137.79	
1+640.000			2.31		137.58	
1+620.000			2.33		137.56	
1+600.000			2.32		137.57	
1+580.000			2.59		137.30	
TP-2	1.767	139.507		2.152	137.74	
G-01/1			1.669		137.838	
1+560.000			1.9		137.61	
1+540.000			1.88		137.63	
1+520.000			1.87		137.64	
1+500.000			1.83		137.68	
1+480.000			1.75		137.76	
1+460.000			1.66		137.85	
1+440.000			1.54		137.97	
1+420.000			1.36		138.15	
G-01/2			0.458		139.049	
TP-3	1.446	140.495		0.458	139.049	
1+410.939			2.30		138.20	
1+409.939			1.73		138.77	
1+407.539			1.36		139.14	IRR. CANAL
1+406.639			1.95		138.55	IRR. CANAL
1+406.039			1.95		138.55	IRR. CANAL
1+405.139			1.37		139.13	IRR. CANAL
1+400.000			1.53		138.97	
1+380.000			2.41		138.09	
BM-3				1.111	139.384	**DE = +0.007**

STA.	BS	HI	IFS	FS	ELEV.(MSL)	REMARK
BM-3	0.258	139.635			139.377	
1+360.000			1.78		137.86	
1+340.000			1.71		137.93	
1+320.000			1.8		137.84	
1+300.000			1.75		137.89	
1+280.000			1.86		137.78	
TP-1	1.593	139.736		1.492	138.143	
1+260.000			2		137.74	
1+240.000			1.88		137.86	
1+220.000			1.87		137.87	
1+200.000			1.86		137.88	
1+180.000			1.63		138.11	
1+160.000			1.09		138.65	
1+140.000			1.31		138.43	
G-01/3			0.3		139.436	
TP-2	0.281	139.717		0.3	139.436	
1+120.000			0.48		139.24	
1+100.000			2.13		137.59	
1+080.000			2.51		137.21	
TP-3	1.249	138.561		2.405	137.312	
1+060.000			1.39		137.17	
1+040.000			1.48		137.08	
1+028.000			1.38		137.18	
1+026.000			0.82		137.74	
1+023.500			0.88		137.68	KLONG HUAYPO
1+020.000			2.77		135.79	KLONG HUAYPO
1+018.500			3.2		135.36	KLONG HUAYPO
1+016.500			2.84		135.72	KLONG HUAYPO
1+013.400			0.87		137.69	KLONG HUAYPO
1+008.000			0.97		137.59	
WL			3		135.561	
G-A/4			0.91		137.651	
TP-4	1.439	139.09		0.91	137.651	
1+000.000			1.91		137.18	
0+980.000			1.9		137.19	
0+960.000			1.85		137.24	
0+940.000			1.86		137.23	
0+920.000			1.58		137.51	
BM-2				0.209	138.881	**DE = -0.005**

STA.	BS	HI	IFS	FS	ELEV.(MSL)	REMARK
BM-2	2.258	141.144			138.886	
0+900.000			2.28		138.86	
0+880.000			1.47		139.67	
0+860.000			0.48		140.66	
TP-1	1.565	142.609		0.1	141.044	
0+840.000			1.25		141.36	
0+820.000			0.93		141.68	
0+800.000			0.84		141.77	
G-1/5			0.702		141.907	
0+780.000			1.21		141.40	
0+760.000			1.73		140.88	
0+740.000			1.73		140.88	
0+720.000			1.71		140.90	
0+700.000			1.47		141.14	
TP-2	0.411	141.455		1.565	141.044	
BM-2				2.568	138.887	DE = +0.001

STA.	BS	HI	IFS	FS	ELEV.(MSL)	REMARK
GPS-04	1.319	145.126			143.807	
0+018.878			0.893		144.23	
0+020.000			1.13		144.00	
0+040.000			1.29		143.84	
0+060.000			1.51		143.62	
0+080.000			1.41		143.72	
0+100.000			1.46		143.67	
0+120.000			1.13		144.00	
TP-1	1.34	145.195		1.271	143.855	
G-01/9			1.259		143.936	
0+140.000			1.21		143.99	
0+160.000			1.5		143.70	
0+180.000			1.36		143.84	
0+200.000			1.23		143.97	
0+202.300			0.88		144.32	
0+203.000			0.88		144.32	IRR.CANAL
0+203.600			1.32		143.88	IRR.CANAL
0+204.400			1.32		143.88	IRR.CANAL
0+206.000			0.87		144.33	IRR.CANAL
0+207.000			0.87		144.33	
0+208.000			1.37		143.83	
G-01/8			0.454		144.741	
0+220.000			1.36		143.84	
0+240.000			1.45		143.75	
0+260.000			1.46		143.74	
0+280.000			1.59		143.61	
TP-2	1.101	144.874		1.422	143.773	
0+300.000			1.26		143.61	
0+320.000			1.45		143.42	
0+340.000			1.45		143.42	
0+360.000			1.56		143.31	
0+380.000			1.49		143.38	
0+400.000			1.54		143.33	
0+420.000			1.3		143.57	
0+440.000			1.5		143.37	
0+460.000			1.69		143.18	
0+480.000			1.54		143.33	
0+500.000			0.86		144.01	
G-01/7			0.599		144.275	

STA.	BS	HI	IFS	FS	ELEV.(MSL)	REMARK
TP-3	1.06	145.335		0.599	144.275	
0+520.000			1.84		143.50	
0+540.000			1.9		143.44	
BM-1				1.49	143.845	DE = -0.006

STA.	BS	HI	IFS	FS	ELEV.(MSL)	REMARK
BM-1	0.748	144.599			143.851	
0+560.000			1.44		143.16	
0+580.000			1.25		143.35	
0+600.000			1.80		142.80	
0+620.000			1.37		143.23	
0+640.000			1.84		142.76	
G-01/6			1.651		142.948	
0+660.000			2.31		142.29	
0+680.000			2.86		141.74	
BM-1				0.748	143.851	DE = 0.000

STATION	INSTRUMENT	BACKSIGHT	N	E	Hor. Ang.	Dist. (m.)
POINT A STA.3+199.955			1834995.027	473671.492	(Coordinate by GPS)	
POINT B (GPS-01) STA.1+736.038			1835107.829	472211.928	(Coordinate by GPS)	
		POINT A	1834995.027	473671.492		
	GPS-01		1835107.829	472211.928	180-00-00	327.604
STA.1+408.434			1835133.074	471885.298		
		GPS-01	1835107.829	472211.928		
	STA.1+408.434		1835133.074	471885.298	270-00-00	13.950
STA.1+408.434 (OFF. 13.95 m. LT.)			1835146.983	471886.373		
		STA.1+408.434	1835133.074	471885.298		
	STA.1+408.434 (OFF. 13.95 m. LT.)		1835146.983	471886.373	270-00-00	41.030
STA.1+367.404 (OFF. 13.95 m. LT.)			1835150.145	471845.465		
		STA.1+408.434 (OFF. 13.95 m. LT.)	1835146.983	471886.373		
	STA.1+367.404 (OFF. 13.95 m. LT.)		1835150.145	471845.465	90-00-00	13.950
STA.1+367.404			1835136.236	471844.390		
		STA.1+367.404 (OFF. 13.95 m. LT.)	1835150.145	471845.465		
	STA.1+367.404		1835136.236	471844.390	270-00-00	237.188
POT.STA.1+130.216 (Conc. Monument)			1835154.514	471607.907		
		G-1/5	1835189.770	471298.168		
	G-1/6		1835186.625	471120.161	359-53-30.1	57.703
PI.STA.0+698.879 (Conc. Monument)			1835187.753	471177.853		
		PI.STA.0+698.879	1835187.753	471177.853		
	STA.0+510		1835187.758	470988.874	180-00-00	304.139
POT.STA.0+205.861 (Conc. Monument)			1835187.767	470684.835		
		G-1/7	1835187.019	471001.625		
	STA.0+510		1835187.758	470988.874	176-39-07	491.122
STA.0+018.878 (Steel Bolt)			1834187.772	470497.852		
		STA.0+205.861	1835187.767	470684.835		
	STA.0+018.878		1834187.772	470497.852	180-00-00	18.878
STA.0+000 (Conc. Monument)			1835187.773	470478.974		

C. Water Flow Velocity Survey

SURVEY REPORT

Water Flow Velocity Survey

The Second Mekong International Bridge Construction Project

1. Scope of works

1.1 Current Measurement Locations

The field survey for the current measurement of Mekong river is made at proposed bridge area of the project to find the water flow velocity. The current measurement will be carried out at a total of 30 locations along Bridge centerline and both offset lines from centerline with 100 meters offset each side.

1.2 Period of Current Measurement

Measurement will be made To at the fastest current.

1.3 Observation Points for Water Flow Velocity

At each location of current measurement, the measurement will be observed at every meters dept: 3m, 6m, 9m,…., and specially at 0.2m the depth.

2. Survey method

2.1 Horizontal Control Station

The reference shore station "GPS-01"was established at Bridge centerline on the river bank (Thai Side). The UTM co-ordinates were referred from RTSD(Royal Thai Survey Department) monument with UTM projection, Indian datum 1975 and Zone 48. In order to control the boat, three of temporary control stations were established on river bank (Thai side). First point was at Bridge centerline, the others two points were at 100 meters offset line on either side.

2.2 Vertical Control Station

To check the water level during the measurement period, staff gauge of Mukdahan Hydrology Office, Department of Energy Development and Promotion, was used as reference at every 3 hours, started from 6 A.M. to 6 P.m., during the measurement period.

The elevation of zero reading of the staff gauge is +124.226 meters above MSL.

2.3 Measurement Period

From JICA recommendation, the measurement period should be scheduled from August 30th to September 6th, 1999. The current measurement was carried out between September 1st and 2nd, 1999.

2.4 Plan of Current Measurement Position

The plan of current measurement position was prepared and submitted to the designer, and got the approval later. The plan consisted of 30 locations of measurement position . There are three seperated lines (line"L", line"C" and line"R") across Mekong river and on each line will have 10 locations of measurement position.

2.5 Current Measurement Method

2.5.1 Equipments setting and checking

On shore : Total station was set up at control station of each line and fixed the direction to correct line. It's used to navigate the survey boat during observation. One unit of GPS instrument was set up at monument no."GPS-01"and checked.

On boat : Echo sounder, current meter, one unit of GPS instrument and reflector were established on survey boat and checked.

2.5.2 Positioning

The boat can not be anchored at determine position easily. It was always move to downstream quickly, so the position of the boat was held steady by experience boatman. The survey boat position was navigated by Total Station instrument both in direction and in distance all the time. The communication between surveyor on shore and boatman was done by using walkie-talkie. The surveyor on shore told the boatman everytime the boat was out off the location and the boatman will try to adjust the boat into the correct position before starting the next observation. During each observation of each location was made, the GPS was recorded for the real location of it.

2.5.3 Water depth

After the boat came into correct location and before the observation will be started, the water depth of this location was measured by an echo sounder.

2.5.4 Current measurement

The current measurement was made by NEYRPIC current meter. First observation was done for the depth of 0.2 of water depth and others were taken at 3 meters depth interval until its close to the river bed . The number of propeller revolutions were

recorded from audio signal within the time of each observation not less than 40 seconds and not greater than 70 seconds.

2.5.5 Velocity Computation

Flow velocity of each observation was computed from the following formulae;

$$V = 0.231\ N + 0.016$$

Where :

V = Flow velocity in "meters/second"

N = Number of propeller revolution in "revolution/second"

3. Current Measurement Results

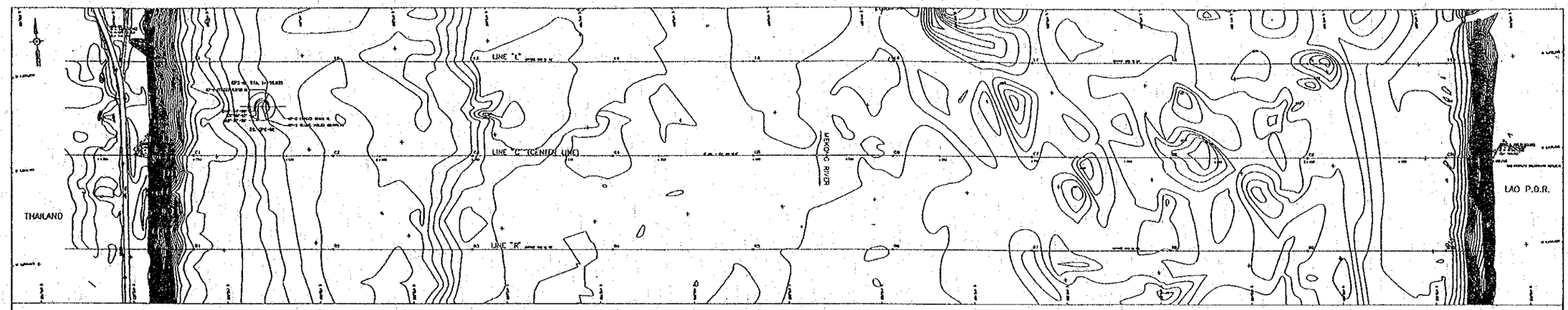
3.1 Current Measurement Drawing

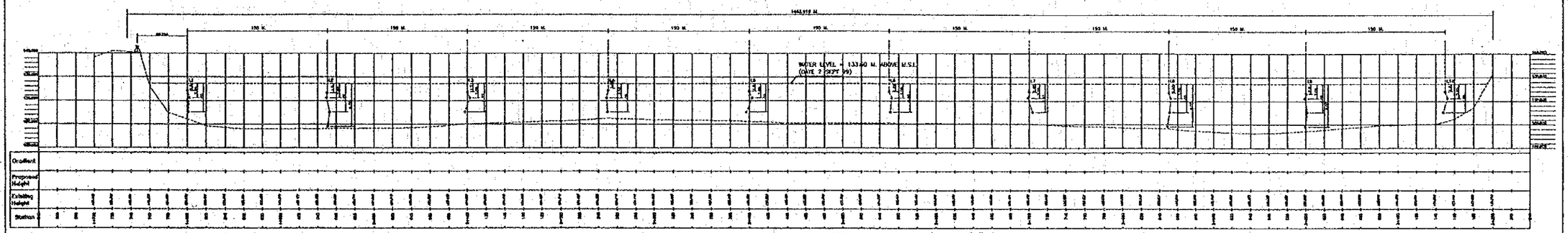
The data from GPS was processed by SKI software to find the co-ordinates of each observation position and use in preparing the current measurement drawing.(see Appendix A) The water level was calculated from staff gauge records.

3.2 Current Measurement Computation

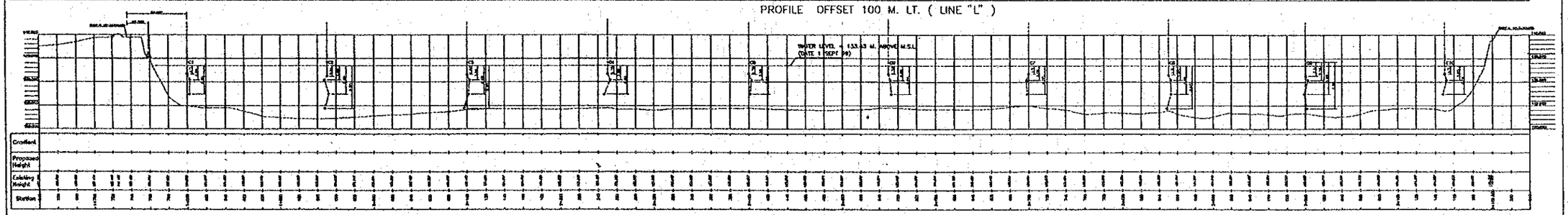
All the current measurement record such as revolution of propeller, time , water depth, distance, ect. were transferred to micro computer in preparing of the computation sheet.(see Appendix B)

Appendix A. Current Measurement Drawing

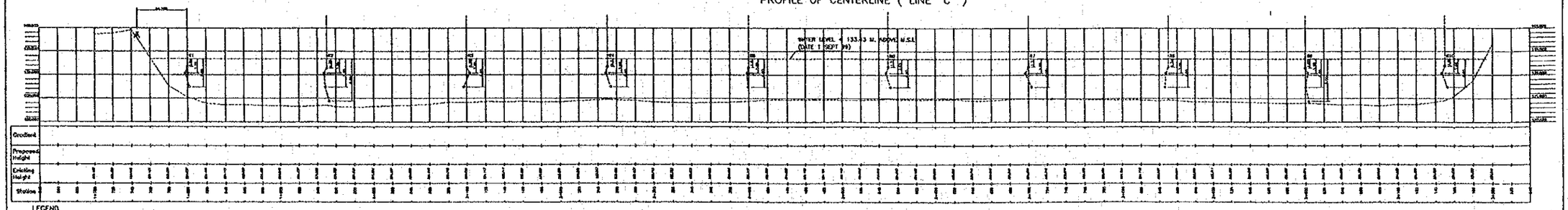




PROFILE OFFSET 100 M. LT. (LINE "L")



PROFILE OF CENTERLINE (LINE "C")



PROFILE OFFSET 100 M. RT. (LINE "R")

LEGEND

- HORIZONTAL + VERTICAL CONTROL
- CURRENT MEASUREMENT LOCATION
- SURVEY STATION

REV.	DATE	DESCRIPTION	APPROVED

PROJECT STUDY TEAM
ORIENTAL CONSULTANTS CO., LTD.
in association with
NIPPON KOEI CO., LTD.

JICA JAPAN INTERNATIONAL COOPERATION AGENCY
MINISTRY OF COMMUNICATIONS, TRANSPORT, POST AND CONSTRUCTION, LAO PRD
MINISTRY OF TRANSPORT AND COMMUNICATIONS DEPARTMENT OF HIGHWAYS THAILAND

THE SECOND MEKONG INTERNATIONAL BRIDGE CONSTRUCTION PROJECT

QUALITY RECORD	NAME	SIGNATURE	DATE
DESIGN			
DRAWN			
DESIGN CHECK			
DRAFTING CHECK			
APPROVED			

DWG. TITLE:

CURRENT MEASUREMENT SURVEY

Appendix B. Current Measurement Computation

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line L (100 Meter Upstream)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
	0		0							0		
		46		3.75	172.50						0.893	154.093
L1	46		7.50			1.50	48	400	1.941	1.787		
						3.00	51	400	1.828			
						6.00	44	300	1.591			
		150		8.50	1275.00						1.712	2,182.179
L2	196		9.50			1.90	50	400	1.864	1.636		
						3.00	42	300	1.666			
						6.00	45	300	1.556			
						9.00	48	300	1.460			
		150		9.00	1350.00						1.521	2053.943
L3	346		8.50			1.70	44	300	1.591	1.406		
						3.00	51	300	1.375			
						6.00	56	300	1.254			
		150		7.90	1185.00						1.492	1768.281
L4	496		7.30			1.46	42	300	1.666	1.578		
						3.00	42	300	1.666			
						6.00	50	300	1.402			
		150		7.65	1147.50						1.547	1775.374

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line L (100 Meter Upstream)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
L5	646		8.00			1.60	45	300	1.556	1.516		
						3.00	44	300	1.591			
						6.00	50	300	1.402			
		150		8.15	1222.50						1.462	1786.959
L6	796		8.30			1.66	46	300	1.523	1.407		
						3.00	45	300	1.556			
						6.00	41	200	1.143			
		150		8.35	1252.50						1.475	1847.736
L7	946		8.40			1.68	43	300	1.628	1.543		
						3.00	43	300	1.628			
						6.00	51	300	1.375			
		150		8.90	1335.00						1.516	2024.079
L8	1096		9.40			1.88	41	300	1.706	1.489		
						3.00	43	300	1.628			
						6.00	45	300	1.556			
						9.00	44	200	1.066			
		150		9.70	1455.00						1.536	2234.854
L9	1246		10.00			2.00	40	300	1.749	1.583		
						3.00	41	300	1.706			

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line L (100 Meter Upstream)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
						6.00	41	300	1.706			
						9.00	60	300	1.171			
		150		9.00	1350.00						1.460	1971.167
L10	1396		8.00			1.60	48	300	1.460	1.337		
						3.00	55	300	1.276			
						6.00	55	300	1.276			
		45		4.00	180.00						0.669	120.353
	1441											
					11925.00							17919.02

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line C (Center Line)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
	0		0							0		
		40		4.25	170.00						0.888	150.983
C1	40		8.50			1.70	50	400	1.864	1.776		
						3.00	51	400	1.828			
						6.00	57	400	1.637			
		150		9.85	1477.50						1.760	2600.968
C2	190		11.20			2.24	54	400	1.727	1.744		
						3.00	51	400	1.828			
						6.00	54	400	1.727			
						9.00	55	400	1.696			
		150		10.25	1537.50						1.592	2447.238
C3	340		9.30			1.86	49	400	1.902	1.439		
						3.00	53	400	1.759			
						6.00	42	200	1.116			
						9.00	48	200	0.979			
		150		9.10	1365.00						1.479	2018.617

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line C (Center Line)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
C4	490		8.90			1.78	42	300	1.666	1.519		
						3.00	44	300	1.591			
						6.00	54	300	1.299			
		150		8.90	1335.00						1.629	2175.222
C5	640		8.90			1.78	49	400	1.902	1.740		
						3.00	51	400	1.828			
						6.00	47	300	1.490			
		150		8.85	1327.50						1.696	2252.074
C6	790		8.80			1.76	41	300	1.706	1.653		
						3.00	52	400	1.793			
						6.00	48	300	1.460			
		150		8.65	1297.50						1.567	2033.821
C7	940		8.50			1.70	45	300	1.556	1.482		
						3.00	49	300	1.430			
						6.00	48	300	1.460			
		150		9.00	1350.00						1.564	2111.364

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line C (Center Line)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
C8	1090		9.50			1.90	53	400	1.759	1.646		
						3.00	41	300	1.706			
						6.00	43	300	1.628			
						9.00	47	300	1.490			
		150		10.10	1515.00						1.705	2583.685
C9	1240		10.70			2.14	47	400	1.982	1.765		
						3.00	48	400	1.941			
						6.00	41	300	1.706			
						9.00	49	300	1.430			
		150		9.60	1440.00						1.644	2367.418
C10	1390		8.50			1.70	42	300	1.666	1.523		
						3.00	43	300	1.628			
						6.00	55	300	1.276			
		45		4.25	191.25						0.762	145.657
	1435											
					13006.25							20887.05

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line R (100 Metre Down Stream)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
	0		0							0		
		39		4.10	159.90						0.807	129.060
R1	39		8.20			1.64	41	300	1.706	1.614		
						3.00	41	300	1.706			
						6.00	49	300	1.430			
		150		9.05	1357.50						1.638	2223.783
R2	189		9.90			1.98	45	400	2.069	1.662		
						3.00	43	300	1.628			
						6.00	43	300	1.628			
						9.00	53	300	1.324			
		150		9.35	1402.50						1.621	2273.898
R3	339		8.80			1.76	54	400	1.727	1.581		
						3.00	42	300	1.666			
						6.00	52	300	1.349			
		150		8.65	1297.50						1.544	2003.166
R4	489		8.50			1.70	51	400	1.828	1.507		

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line R (100 Metre Down Stream)

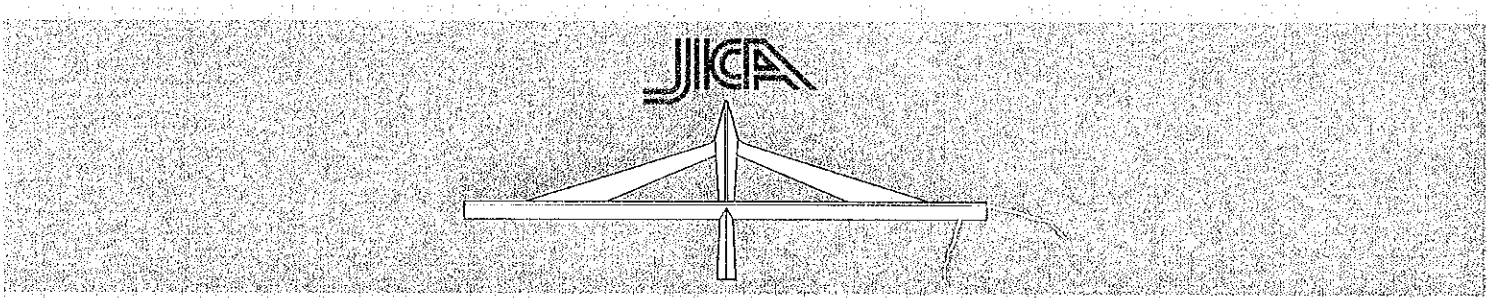
Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
						3.00	43	300	1.628			
						6.00	44	200	1.066			
		150		8.75	1312.50						1.608	2110.420
R5	639		9.00			1.80	50	400	1.864	1.709		
						3.00	41	300	1.706			
						6.00	45	300	1.556			
		150		8.75	1312.50						1.665	2185.084
R6	789		8.50			1.70	41	300	1.706	1.621		
						3.00	42	300	1.666			
						6.00	47	300	1.490			
		150		8.50	1275.00						1.631	2079.972
R7	939		8.50			1.70	53	400	1.759	1.642		
						3.00	41	300	1.706			
						6.00	48	300	1.460			
		150		8.60	1290.00						1.668	2151.669
R8	1089		8.70			1.74	41	300	1.706	1.694		

CURRENT MEASUREMENT RECORD

The Second Mekong International Bridge Construction Project

Line R (100 Metre Down Stream)

Location	Dist from Start Point (M)	Width (M)	Depth (M)	Mean Depth (M)	Area (Sq.M)	Measure Depth (M)	Time (Sec)	Revolution (Round)	Velocity (M/Sec)	Mean Velocity Vertical (M/Sec)	Mean Velocity Section (M/Sec)	Flow Volume (Cu.M/Sec)
						3.00	40	300	1.749			
						6.00	43	300	1.628			
		150		9.05	1357.50						1.675	2273.751
R9	1239		9.40			1.88	51	400	1.828	1.656		
						3.00	52	400	1.793			
						6.00	43	300	1.628			
						9.00	51	300	1.375			
		150		8.45	1267.50						1.551	1965.447
R10	1389		7.50			1.50	47	300	1.490	1.446		
						3.00	46	300	1.523			
						6.00	53	300	1.324			
		44		3.75	165.00						0.723	119.255
	1433											
					12197.40							19515.50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