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	o or de t	· ESSA')	1	2	3		5		ε.	7	. 8
DPY DE			1.424	1.453	1.473	1.414	1.38	35			:
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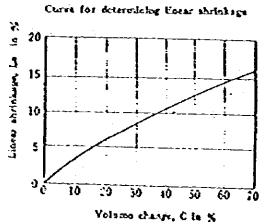
### COMPACTION TEST

FOR REPORTING

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alamaio, a republic e loci.	Hil	a Irr.	( Plood )	Dike )	, (DA		Sept.	1981
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TEST NO (NOTE L'ESSA)	1	2	3	Ł	5	E	7	ξ.
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MEAN WATER CONTENT	26.37	28.96	30.19	33.01	34.67			
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MOULE)	ho	1	WEIG (PO	21	15 1	160E DAMET (DAMETRE INT	;	10,2		CAPADTE	; 942	
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	CATION_Canal_Route_					
SA	MPLE No. TP-2 (0.3 -	1.45)		na li	arga Labor	atory
	No		No			No.
Bil	F_37.72 DW 26.44	WW.3	7.53 DIV26.3	2	WW	
DЖ	7 26.44 rif 9.83	DW 20	6-32 rw 9.1	7-	DW	
₩.	_11.28_ iv _16.61	3. 1	1.21 W, 17.1	5	W,	
	w= 67.9 %		v=: 65.4 9.	į		
	Specimen No.		1		2	
l [-e	Wet seil reduce (Volume of mere				18.2	
LIMIT	Dry soil returne (Velome of there	ery) Ya cor	10		10.02	-
	Shrinkage volume (YYo) cmt	ہ ایک نے نے میں ممالی	8		8.18	
SHRINKAGE	V-V6 V/6 7+x100%		48.2		47.7	
3	Strinking limit Same (1'-Ve ).	- 100)e	19.7		17.7	
SE	<u> </u>		0.16		0.17	<u>-</u>
4.	Strikes Hall Garden Co. C. C. C. C. C. C. C. C. C. C. C. C. C.	( )×1:0;	16.0	<u> </u>	17.0	
30 30	Dry soil roture	Yo cm!	10.0	<u> </u>	10.02	
SERINKAGE	Dry Soll verice	We g	16.61		17.15	
<u> </u>		5_ 17	1.66	j	1.71	
	faital water content	35	67.9	İ	65.4	
ME ANGE		— — — — — — — — — — — — — — — — — —			_ <u>-</u>	
	Sanistage limit	***	19.7	i	17.7	
ğ	Velaus charge Cut	M (18-14)	80	ļ 	81.5	<del></del>
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riser	Supply (1-3/	1(0)	17.8	<u>.                                    </u>	18.0	
		: !				
اد کرد اد کیا	-1 - P, (10)		0.44	i i	0.41	
252		- <del>4./(</del> 85	2.27	j	2.44	
<u>"</u> "	by frecometer weth	<u>ત્રું</u>	2.66	! !	2.66	
(Re	marks) 🧪 : Valt weich of	18 85:8°			: - <del></del>	



Note: Test is made on soil sample passing 0.4mm sieve

27. K. Form No. 3143

-	ومدودها فالتوجو فيتيانها بيدية الإناسة بمتعدد فيستجيد	*******	يرب بيسيني أيدمم بيمانات بالرساعة وكساوه		
I .	CATION_Canal_Route		Date Sept.	81	~
SA	MPLR No. TP-4 (1.0 -	1.84)	. Test by Bin	a karga Lab	oratory
	Ro	! !	No.		No.
171	7 36,01 DW 23.80	14.14		_ ww	
DR	23.80 TW 9.82	DV7	7W	<i>D</i> NY	<i>T</i> W
1	12,21 W. 13,98		W		w
	10 to 87.34 %	14	i==		%
	SPECIMEN No.		1	2	3
	Wet soil referse (Velvese of exerci-	") V (#*	18.00	···	
LIME	Dep soil volume (Volume of exerce	Your	7.20		
	Stricking reduces (V-Vo) cert		10.80		-1
SHRINKAGE	Y-Ya 11.×100%		77.25		
S	Striature limit Smu- (1-10)	×195)85	10.09		
SH	Status Hait obtained from L& G	17-1-1	0.139		-
	Dry soil rolons		13.90		<u> </u>
X V	Ory Soil reight	Ve ses	7.20		
SHRINKACE	Strictoge rate guille	111 t	13.98	·	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	light water costrat	- 27	1.94		<del> </del>
ME ANGE			87.34		<del></del>
	Shriekage limit	** 5 !	10.09		<del></del>
हुह हिंह		٠,-٠٠) ٦	148.9	<del></del>	
User	Surlatage Limits 1-14-5	(0) + (65 ) * .	26.2		i
	······				
	K 10)		0.37		
S S S	Specific gravity of sell obtained	<u> ១ភូស</u> ្ន	2.66	<del></del>	
- G	त्र प्रकासस कराके		2.56		<u> </u>
	marks   10 : Unit weight of	water		Curt fot determinis	r lisear shrinkage
			. × × × × × × × × × × × × × × × × × × ×	e	
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15 15 10 10 29 30 10 50 60 10

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Note: Test is mide on soil sample ressing Odman sieve

N. E. Form No. 3145

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1.00	CATION Conel Route	: ************************************	, DateSep	t. 81	
SAI	WPLE No. TP-7(1.6 - 2	OM)	, Test by Bin	a Marga Labo	oratory
	No	ļ	No		No
K'II	8 38.65 NW 28.20	77	DW	WW	
DIS	28.20 117 9.08	DW		DW -	
17.	10.45 W. 19.12	W	W	w.	w
	n= 54.6 %	<u>;</u>	)	i i <u>l</u> n sa	
	SPECIMEN No.		)	2	
£-4	Wet soil solute (Volume of exerci			· <del></del>	
LIMIT	Leg sell reduce (Volume of men-	<sup>(45</sup> ) Yo (185	9,8		
i i	Striction roters (V-Yo) cm'		8.2		<u> </u>
SHRINKAGE	V. Ve. 10 x 100%		42.9	<del></del>	
3	Stricture Heat Smar (V-Vo	×100)%	11.7		
ES.	Sprakter inch	1	0,192		
N N	Stricking that obtained from R & G ** or ( ) P		19.2		
× V V	Dry foil volume Dry Soil weigh:	ν (α)	9.8		
SHEINKAGE RATIO		₩a 4 4 ] 2 ]+	19.12		
<u>\$</u>	laitel water coatent	<u>}[+</u>	1.95 54.6		
8			24•Ω		
ANGE	Shishen linit	we to	11.7	<del></del>	
हिंदु		w,-s <sub>1</sub> ) ?	83.6		
Licer	Shrinking Limited 1 - 3 V	100 +100 )%	18.3		
<u>*</u> 1	1 - 8.				
	k (6)		0.32	<del></del>	
328	Specific gravity of coll obscioed	- 1100	3,09		
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Yolome change, C to X

Note: Test is taids ou soil sample passing O.4mm sieve

#### SPECIFIC GRAVITY & WATER ABSORPTION OF SAND

10CATION: Bila Irrigation Project (River Material)

DATE: September, 1981.

TESTED BY : Bina Karga Laboratory of P.U.

Sample ko.	RIA 1	RM 2	RIA 4	
Test No.	1	. 5	3	4
Wt. of Flask + Water	669.7	668.7	352.2	
wt. of Flask	169.7	168.7	102.2	
Vol. of Flask	500	500	250	
Wt. of Plask + SSD Sand	425.8	452.3	313.7	
#t. of SSD Sand	256.1	283.6	211.5	
Jt. of Flask+Water+SSD Send	822.3	840.2	482.4	
Vol. of sand	103.5	112.1	81.3	
Specific Gravity of SSD Sand	2.47	2.53	2.60	
Liean Value	2.47	2.53	2,60	
At. of Dry Sand	250.4	277.9	208.7	
Water Absorption &	2.2	2.0	1.3	
Reen Value	2.2	2.0	1.3	
	Test No.  Wt. of Flask + Water  Wt. of Flask  Vol. of Flask  Wt. of Flask + SSD Sand  Wt. of SSD Sand  Wt. of Flask+Water+SSD Sand  Vol. of sand  Specific Gravity of SSD Sand  Liean Value  Wt. of Dry Sand  Water Absorption %	Test No. 1  Wt. of Flask + Water 669.7  Wt. of Flask 169.7  Vol. of Flask 500  Wt. of Flask + SSD Sand 425.8  Wt. of SSD Sand 256.1  Wt. of Flask+Water+SSD Sand 822.3  Vol. of sand 103.5  Specific Gravity of SSD Sand 2.47  Ean Value 2.47  Wt. of Dry Sand 250.4  Water Absorption 2.2	Test No. 1 2  Wt. of Flask + Water 669.7 668.7  Wt. of Flask 169.7 168.7  Vol. of Flask 500 500  Wt. of Flask + SSD Sand 425.8 452.3  Wt. of SSD Sand 256.1 283.6  Wt. of Flask+Water+SSD Sand 822.3 840.2  Vol. of sand 103.5 112.1  Specific Gravity of SSD Sand 2.47 2.53  Wt. of Dry Sand 250.4 277.9  Water Absorption 2 2.2 2.0	Test No.       1       2       3         #t. of Flask + Water       669.7       668.7       352.2         #t. of Flask       169.7       168.7       102.2         Vol. of Flask       500       500       250         #t. of Flask + SSD Sand       425.8       452.3       313.7         #t. of SSD Sand       256.1       283.6       211.5         #t. of Flask+Water+SSD Send       822.3       840.2       482.4         Vol. of sand       103.5       112.1       81.3         Specific Gravity of SSD Sand       2.47       2.53       2.60         #t. of Dry Sand       250.4       277.9       208.7         Vater Absorption       2.2       2.0       1.3

#### SPECIFIC GRAFITY & WATER ABSORPTION OF GRAVEL

LOCATION: BILA IRRIGATION PROJECT DATE: SEPTEMBER 1981 (RIVER MATERIAL)

TESTED BY: BINA MARGA LABORATORY OF P.U.

SAMPLE No.:		BRM	BRM
TEST llo. :			
OVENDRY WEIGHT OP SAMPLE	(A)	6114	
SATURATED SURFACE-DRY WEIGHT OF SAMPLE	(B)	6202	
WEIGHT OF SAMPLE IN WATER	(c)	3930	
APPARENT SPECIFIC GRAVITY = $\frac{A}{A-C}$ =		2.79	
BULK SPECIFIC GRAVITY = B = E-C =		2.73	
BULK SPECIFIC GRAVITY (OVEN DRY) = $\frac{A}{B-C}$	- =	2,69	·
PERCENTAGE OF ABSORBTION = $\frac{B-A}{A}$ x (SATURATED SURFACE-DRY BASIS)	100%=	1,44	

#### LOG OF TEST PIT FOR POPROW AND FOUNDATION INVESTIGATIONS

Location Bila Intake Site Place Side of Hill (Left Bank)

HOLE NO. IP - O(L) EL

EPTH	CLAS SYMB	SIFICATION QL	CLASSIFICATION AND DESCRIPION
(M)	lettek	GRAPHIC	OF MATERIAL
-	<u>GF</u>	000000	0.00-0.25m GRAVEL-Silty CLAY; dry-moisture; with some weed roots; dark brown; approx 10-20% gravel (P+4.76) to 15-20mm mean size
0.25	GM-GC	00000000	
•	(G-M - G-C)		mean size; wet; light yellow brown.
1.0	**************************************	0 0	0.50z-120m; compact; approx. 30-50% gravel (P+4.76) to 100m maximum size and to 15mm mean size; wet; light yellow brown; talus
1.4	-4.76mm C'H	0 0	-1.405: large gravels; to 30055 saxisus
	# # # # #	000	size; high permeability; optimus road materials; difficult excavation by scoop. Stop by large gravels.
	!   		Estimation; 0.25m-1.40m, suitable embank- ment material for Canal; under 1.4m, sui-
	! 		table road material; Talus material,
		<u>.</u>	(possible to transport material directly)
		:	· ·

# 1.06 OF TEST PIT FOR BORPOW AND FOUNDATION INVESTIGATIONS

Location Canal	Place Side of Hill
HOLE NO. TP-	- 1 <u>FL</u>

DE FTH!	SYMBO		CLASSIFICATION AND DESCRIPION OF MATERIAL
(nl)	LETTER	GRAPHIC	Lean CLAY, with some weed roots; black;
0.3	<u>CF</u>		Silty CLAY, medium plasticity, high dry
0.6	CL -	0,000,000	strength; without gravel; wet condition; light brown.  0.1-0.7m GRAVEL-SAND; 50mm maximum size;
0.7	G-F	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	small amount of nonplastic fines.  -0.7m: SILT, SILTY CALY MIXTURE with GRAVEN
-1.0		• o	well compacted; light yellow; a ratio of gravel (P-4.76m) is 40% (maximum), 10-20% mean P-4.76m; 50mm maximum size, 15mm mean
	GM (	6 0 	size; vet condition; space of gravel is well compacted with silt or clay or silty clay; Partly light brown; -4.76mm soil
	GC	0 0	CH (CLAY).  Estimation; optimum embankment materials;
	GM S GC	0 0	high bearing capacity; difficult excavation by scoop; high natural water content but moderately water content after excavated
-2.0		0 0	materials; Talus material.  (possible to transport material directly)
	-4.76m		
		<b>b</b> 0	
3.0		0 0	not ground water, after rain. Stopped.

LOG OF	TEST F	717			
FOR BC	DRROW AND	FOUND/	ITION IN	VESTIGA	TIONS

	Lo	cation	Canal	route Place Boundary of paddy at	nd hill
		<u>H</u>	OLE NO.	IP - 2 EL.	
	•		.,,		
DE	РТН	CLASS SYMBO	SIFICATION )L	CLASSIFICATION_AND_DESCRIPION	
.0	m)	LETTER	GRAPHIC ·	OF MATERIAL	
- <del>                                     </del>	·	<u>C</u> F		Lean CLAY, with some weed root;	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	0.3			Silty CLAY, highly weathered silt- stone; partly sand, weathered sand-	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
-   -		CL		stone; moist; light yellow brown;	
	0.9				
. н	10 - <del>-</del>			Siltstone - Sandstone, moderately weathered; light grey; low cementation.	
		Sis T		- 1.10 m ground water . Stopped by hard layer .	
- H - H H	1.4	- 72 1.4		Estimation: -1.40 m high bearing capacity: 0.9 - 1.4 m high slaking	
				by dry shrinkage and wet expansion; moderately embankment material after slaking with water; difficult exca-	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
				vation by scoop	
				(If not dry, possible to transport directly)	
			1.		
		1			

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LOG 0	F TEST	<u>P[]</u>			
FOR	BORROW A	ND FOUNDATION	l in	VEST	IGATIONS

Locati	On Canal Roi	ite	<i>Pl</i> a	CC Paddy
	HOLE NO.	TP -	3 1	EL.

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T-		CLAC	SIFICATION		- :	
Ŋ	EPIH I			OF THE PROPERTY AND DESCRIPTION		7.7.7.7
[_		SYMBO	11	CLASSIFICATIONAND_DESCRIPION		<del></del> : <del></del>
-	(m)		00101110	OF MATERIAL		-1
	.(7//6)	LETTEK!	GRAPH IC		1	: i
- <b>b</b>		ļ		and the same	1	
目				CLAY, with some paddy's root; black	∦	
	1.2	CF		wet . I like the second of the second	_ []	E
— H	0.2	}		Clayey SAND, highly weathered silt-	- N	
#				Clayey Skird , lithirty meathered Stra-	·K	<del></del>
. 8				stone; high clayey and silty; medi-	- 4	77, 2017
			: 1	um dry strength; moist; light yel-	H	7 1-1133
··· [		77.137		low brown; no gravel		
		-:			-4	
					-	<u> </u>
				Estimation; suitable material for	-	-41-45
				embankment, if sprinkle with water.	. 1	THE THE
E		1		Alluvial material ( syrface ) ; Molas	╌┟	
- 6	-1.0-	-sc-		se soil material ( If not dry , po-		
	1.0-	-50-		se sorr material ! ( It wor ard ! bo.	-	111111
1				ssible to transport material direct-		
	<b>!</b>			_1y_)	-	
Ţ	}					
	1					
	<del>]</del>				ĪĪ	1 12 12 12 1
[	1				-	
				1.6 m ground water	- 4	
			2.4 1.7	1.10 B Stomid water in the state of the stat	1	
[					Ţ	
	<b>1</b>			100000000000000000000000000000000000000	1	K
	<b>]</b>				J	=======================================
	1.9	Sis-Ss		Stopped by hard layer		
	-20 -	15.5	1	Tatalinea ay matu tayer	1	
	3	[	-2	1.9n - 2.01 \ Siltstone-Sandstone	-	<b>N</b>
E	3		I	moderately-weathered-and cementation-	! .	<b>1</b>
	1			light grey; moderate bearing capaci-	,	
	<b></b>			ty ; difficult excavation by scoop.	1	
:_ [	1			ty; difficult excavation of scoop t		
Ţ,		1	<b>1</b> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_	
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	<b>]</b>			- منها المستعدد والمستعدد المستعدد	H	
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<del></del> :		L	OG OF	TEST PIT	
			FOR BC	RROW AND FOUNDATION INVESTIGATIONS	<u></u>
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	Lo	cation	Cana1	route Place Side of the hill.	
		22 2 20 2	IOLE NO	TP = 4 EL.	
		<i></i>	IULE NO.		
<b></b>	ملما سعيب. ••				
	DE PIH		SIFICATION	CLASSIFICATION AND DESCRIPTION	
		SYMB		CLASSIFICATION_AND_DESCRIPION_OF_MATERIAL	
	(M)	LETTER	GRAPHIC -	Y THE TANK T	0
		<u> </u>		Silty CLAY with some weed root	
<u> </u>		- <u>CF</u> -		black; dry	
	0.4			CLAY, high clayey and dry strength;	
	ļ			high dry shrinkage; light blue grey; highly weathered siltstone.	
			• .= .= .= .= .= .= .= .= .= .= .= .= .=		
	<b></b>	<del>- 11</del> -			
	1.0	- CH		Estimation; moderately suitable es- banksent material; but need sprink-	- 1 25-1-52-52
	<b>I</b>			ling with water	
	<b>]</b>			transport raterial directly)	
			1		
		11111111111			- 1
	-2.0	S-M	1011070 077 042	SAND mixture, with SILT	
	2.2	(S-C)		Stopped by hard layer .	
		- 4 - 1 -		-2.0 m - 2.2 m; mixed with gravel	
			-	compact with silt and silty sand;	
			1,1	difficult excavation by scoop ; Kuddy	
				soil Esterial	
	· 🖁 🚊 🗀				2027244
	<b>B</b>	-11-:			

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			·	and the second of the second o	
				and the second s	
			ΔC - ΔC	TECT DIT	
			EUD DE	TEST PLT RROW AND FOUNDATION INVESTIGATIONS	
		- 12			
			Cenal R	oute Place ( Kalola R. Right Bar	
	Lo	cation	Opila 2	Pluce ( Kalola R. Right Bar	ok_)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		······································	IOLE NO.	IP - 5 EL.	<u> </u>
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:	· · · · ·	64.16	cicio ix Did		
	DE PIH	SYMB	SIFICATION	CLASSIFICATION_AND_DESCRIPION	
- <u>-</u>	(nl)	1	GRAPH IC	OF_MATERIAL	
	ļ 	LLIICK	UNRITIC	CLAY, with some weed roots; black;	
	0.2	<u>CF</u>		moist.	
	<b>]</b>			CLAY; high plasticity = medium plas-	
				ticity	
	<b></b>			yery weak layer i no mixture with gravel; easy excavation by scoop.	- 17 HE WAR 17 1
	H	<del>-</del>	<del>-</del>	graver; easy excavation by Socop and	
	<b>I</b>	1 211			
	1.0-			Estimation 1 moderately sintable em-	
		CU		fill dam ; terrace material ( = allu-	
		-CH-		vial material ) - flood plain ; high bearing capacity layer is over 4 m or	
				5 m -; imposible to transport material	
				directly.	
				n (n. 1905), na 1911, na 1915, an airte an Aireann an Aireann an Aireann an Aireann an Aireann an Aireann an A Na 1911, an Aireann an Aireann an Aireann an Aireann an Aireann an Aireann an Aireann an Aireann an Aireann an	
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	<b> </b>				
	. F1		<u> }</u>		1 1

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# LOG OF TEST PIT FOR BORFON AND FOUNDATION INVESTIGATIONS

Location canal	Place	Boundary	pf Paddy
DESTRUCTION SAID CONTRACTOR COMMUNICATION COMUNICATION COMMUNICATION COMUNICATION COMMUNICATION COMMUNICATION COMMUNICATION COMPRICATION COMUNICATION COMPRI			and Hill.
HOLE NO. TP -	6	£1	

Lean CLAY; with some weed roots; dark brown; dry.    CF	ЕРІН	CLAS SYMB	SIFICATION DL	CLASSIFICATION AND DESCRIPION
o o 0.4-0.8m; SILT KIXTURE WITH GRAVEL; clayers it coist; space of gravels is moderately compacted by silt; light brown; approx. 30-5% gravel (P+4.76) to 15cm mean size.  0.8-1.0m; Clayer SAND (mixture with gravel) space of gravels compacted by silt clay; approx. 30% gravel (P+4.76) to 20-30cm maximum size; blue grey; moist.  SC  1.5m, ground water.  Estimation; difficult excavation by scoop; suitable embankment material; under 2.4m highly bearing capacity; Talus material. (possible to transport material directly)	(M)	LEITER	GRAPHIC -	OF MATERIAL
0.4-0.8m; SILT KINTER WITH GRAVEL; clayers it coist; space of gravels is moderately compacted by silt; light brown; approx. 30-5% gravel (P+4.76) to 15cm mean size.  0.8-1.0m; Clayer SAND (mixture with gravel) space of gravels compacted by silt clay; approx. 30% gravel (P+4.76) to 20-30cm maximum size; blue grey; moist.  SC  1.5m, ground water.  Estimation; difficult excavation by scoop; suitable embankment material; under 2.4m highly bearing capacity; Talus material. (possible to transport material directly)		<u>CF</u>	$\times$	
0.8-1.0m: Clayey SAND (mixture with gravel) space of gravels compacted by silt clay; approx. 30% gravel (P+4.76) to 20-30ms maximum size; blue grey; noist.  SC  1.5m, ground water.  Estimation; difficult excavation by scoop; suitable embankment material; under 2.4m highly bearing capacity; Talus material. (possible to transport material directly)  Stopped by hard layer.		( <u>G-W</u> )	0 0	moist; space of gravels is moderately com- pacted by silt; light brown; approx. 30-50%
approx. 30% gravel (P+4.76) to 20-30ms maximum size; blue grey; noist.  SC  1.5m, ground vater.  Estimation; difficult excavation by scoop; suitable embankment material; under 2.4m highly bearing capacity; Talus material. (possible to transport material directly)  Stopped by hard layer.				
1.5n, ground water.  Estimation; difficult excavation by scoop; suitable enbankment material; under 2.4m highly bearing capacity; Talus material. (possible to transport material directly)  Stopped by hard layer.	- 1.0			approx. 30% gravel (P+4.76) to 20-30ms
suitable enhankment material; under 2.4m highly bearing capacity; Talus material.  (possible to transport material directly)  Stopped by hard layer.	<u>-</u> - <u>2</u>	50		1.5n, ground water.
Stopped by hard layer.	20			suitable enhankment material; under 2.4% highly bearing capacity; Talus material.
2.4 Stopped by hard layer.	2.0			
	2.4			Probbed of para refer.

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		وإملوا بالمساسات			
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		<u></u>	VU Vr	TEST PIT	
	· <del></del> .		FOR BU	KKOM WAN LOOMANION THATSTIANTONS " "	
				Diana	
	L0	Catton	Canal I	Route Place Paddy	<u>.</u>
· ++			MIT'NO		
	4	<i></i>	<u>IOLE NU.</u>	IP = I	
<u> </u>	T 150 1				
-	DE PIH	CLAS	SIFICATION		
	ענדוח	SYMB		CLASSIFICATIONAND_DESCRIPION_	
	(nl)			OF MATERIAL	<u> </u>
- 1	.( /// //	LETTEK	GRAPHIC -		
				CLAY , with some paddy's roots ;	
	0.2	<u>CE</u>		black; wet.	=
			rainar i -	Clayey SOIL ( CLAY ); high or medium	
				plasticity; moist; dark brown mix-	
<del></del>	<b>H</b>			ture with light blue and yellow	
	11.11.22			brown; without gravel.	
<del></del>	<u> </u>				
	<del></del>				
<u> </u>	<b>H</b>				
	<b>H</b>				
	1.0		**	D. L L	1
	<b>1</b>	CL	<u> </u>	Estimation: easy axcavation by scoop moderately cracks at wall; moderate-	12.00
<u></u>	B			ly suitable embankment material;	7213
				impossible to transport material di-	H
		12:11:12:11		-rectly ; Alluvial deposit .	1
	<b>H</b> ERE	100 100 E			
	<b>I</b>				-
					<b>H</b> =
	H				<u>                                   </u>
					-   =
	2.0				
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	<b>H</b>				
					_    :
					<u> </u>
	目				
	日素	1-1		2.5 m , ground water	
	<b>H</b>		ļ <u>au-ariā</u> ,	Stopped	
1.7.2.7 <u>1</u>	28-	*			
	<b>H</b>			[1996] 교육 프로젝트 프로젝트 프로젝트 프로그램 프로그램 프로그램 [1997]	- K <del>i i i</del>
	<u>H</u>		<u> </u>		U

1	06_	<u>OF</u>	TES DRROW	P			11		•			T (O)	
	<i>~</i> /	ጎቤ በፖ	ነበበለተ./	A A I I I	LM	אנואו	11113	,,,	INI	<i>) [-</i> \	$H \circ L$	1 11 21	N

Location Canal	Route	P	lace_	Boundary	and Fill
The Condition of the State of Condition		. 1 11.17	- 		
HOLE NO	IP	8		EL.	

	DE PIH	CLAS SYMB(	SIFICATION	CLASSIFICATION_AND_DESCRIPION		
	(M)		GRAPH IC	OF MATERIAL	27 C	
		- <u>SF</u> -		_Silty_SAND ; with some wood roots_; _ brown ; dry .	-	
	0.3-			_CLAY; partly with silty sand; well compacted; partly with clayey silt;		
- !   				dry shrinkage; light brown; moist; high dry strength.		
	1.0			Estimation; moderate bearing capaci- ty; difficult excavation; suitable		
		_CH_		embankment material after sprinkling with water; impossible to transport material directly; Kolasse soll ma-	<u>-</u> 	
# 11 12 12				terial.	1 (	
					1 1 1 1	
<u> </u>		272.22.22.22.22.22.22.22.22.22.22.22.22.			100   100	
	-2.1 -2.1			CLAY ; high plasticity ; well compact		
		СН		ed; dry shrinkage; high dry streng- th; light grey; moist		
	2.8			Stopped by moderately hard layer .	-	

## LOG OF TEST PIT FOR BORROW AND FOUNDATION INVESTIGATIONS

Location canal	Place_	Paddy
HOLE HO.	TP - 9	<u>FL</u>

(M)	SYMB	SIFICATION OL GSAPHIC	CLASSIFICATION AND DESCRIPION OF MATERIAL
0.2	<u>C F</u>		CLAY; with some rice roots; dark brown; moist.
0.2			CLAY (mixture with B); high plasticity; low dry shrinkage; high dry strength; high clayely brown dark grey; moist.
	сн		Estimation; hard weathered siltstone; moderately suitable embankment material; impossibility directly transportation of
- 1.0			caterial; easy excavation; collase soil caterial.
1.5			Stopped by hard layer.
	And the state of t		1.5%, moderately comentation siltstone; dark grey; impossibility excavation by scoop; moist; highly bearing capacity.
_			

Location Bila Intake Site Place Paddy

Surface Condition Dry - Moisture

	ہدارہ ے ی	<i>STITIOC</i>	<b>6</b> -7	:OHUL	UULI	)ry <u>=</u> _e	<u>iotiarn</u>	16			
-L00	OF TE.	<u>SI PII-</u> _			· · · · · · · · · · · · · · · · · · ·			<del></del>		المناح الما	
	Classifica		ı	Wsw	Na	D.	. L	Nsw	, <b>M</b>	Qu	- Remarks
(m)	Letter	Grach	ļ	(88)	(times)	(m)	_(cn)	(tines/m)		( 13/v2)	
			-  -	100	3.8	0,25	25	15	4	0.56	
	CF		Ì	11	4.0	0.50	11	16_	. 11	0.57	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		{·····		1)	3.5	0.75	11	14	11	0.55	2,21,122,12
				11	3.5	1.00	H	14	<b>\$1</b>	0.55	in the state of th
Q5-		···	1	51	3.5	1.25	<b>41</b>	14	11	0.55	10 1 2 2 7
				11	3.0	1.50	11	12	B	0.54	
	·	11	-	13	2.5	1.75	11	10	3	0.52	
<b>-</b>	• · · · · · - <del></del>		iì	<b>53</b>	4.0	2.00	11	16	4	0.57	
1:0	sc	1		11	6.0	2.20	20	30	31	0.67	
`	1			\$1	4.0	2,50	30	13	11	0.55	7.427.2
]]	<b></b>	1		<b>11</b>	3.0	2.75	25	12	11	0.54	
			1	11	2.5	3.00	n	10	3	0.52	
⊪ 1 <b>.</b> 5·	1·	1	1	17	4.5	3.25	н	18	- 4	0.58	
		<u> </u>	1 1	В	17.0	3.50	. u	68	6	10.96	Partly Sondy Soil
<b>}</b>	<b>1</b>		1	. 31	11.0	3.75	- 11	- 44.	5	0.78	
			1 -	11	2.5	4.00	- 11	10	3	0.52	2 10 522 5 12 27522 1
2.0			1-	18	6.5	4.25	11	26	4	0.64	
1				11	17.0	4.38	13	131	<u>  11</u>	1.43	gravelly soil
	1	1	-			1[			<u></u>	<u> </u>	
]		277.7			Po	netrati	on is in	npossibi	li ty	1 2 22	1. 1. 4: 1111111
<b>∥</b> −2.5					. i. :	1274	=			-	
		1. =		=1 ;		1.7					
				11 . 12 12	1. 12. 1. 1.	lin.in.		initing i	1 -11 1		
-   =======			[-				-111 :	1			
3.C	- <del> </del> 	1.1.1.1	1-	17 27 27 1 2				. : -			

Where Wax Load

Na : Number of times of half turn

: Fenetrated depth

L. Penetrated length Nsw Half turning numbers per meter (Nsw= 100)

: N-Value ( growel scind or sandy soil) N= 2+0,067Nsx (clay or otherive soil) N=3+0.05Nsx

Gu : Unconfined compressive strength qu=00045Wsx+00075Nsw

Place Side of the Hill Location Bila Intake Site (left bank)

Surface Condition Dry - Moisture

-100	OF TES	JULIUS T PIT—	<b>-</b>	AN: IMI		•				
	Classifica		_	Wsw	Na.	D	L	Nsw	N	Qu Remarks
(m)_	Letter	Graph	_ [	(K)	(times)	(m)		(times/m)		( 12/cd.)
			I	100_	16	0.25	25	64	6	0.93
	GF.		_ ]	111	14	0.50	- <b>j</b> 1	56		0.87
	GM-GC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		11 -	5_	0.75	\$1	20	3_	0.60
ΛE-	0,4,-00	00000	Į	81	6	1.00	11	24	4	0.63
··· 0.5-		0 0	- [	- 11	8	1.25	11 -	32	11	0.69
	(6-M-	000	_ }	13	5_	1.50		20	3	0.60
	G-C)	0.0		- 11	8	1.75	11	32	4_	0.69
1	-	0 0	<u> </u> _1	11	78_	1.95	20	390	28_	3.37 Partly gravel
1;O-	. : . cm	0 0					· .			1 . 1 . 12. 1 . 1 . 2
	-4.76	0 00	<u>.</u>		Penetr	ation i	s impos	sibility		7 a 10 p 30 17 a 11 oc
	CH				-	* * -1.7		<u> </u>		
, ,				Anoth	er Pla					2 24
- 1.5				100	12:	0.25	: 25	48	5	0.81
	1.77		_	\$1 a	16	0.50		64	6	0.93
		1		31	. 5	0.75	18. lii	20	3	0.60
20				-, 11 ,	5	1.00		20	- 17	1247 27 27
2.0	1			11	_6_	1.25	-	24	4	0.63
				11	. 8	1.50		32	11	0.69
				1)	8	1.75		32	"	
2.0				n	59	2.00		236	18	2.22 Partly gravel
2.5		]		\$1	30	2.03	3	999	69	7.90
			ء ا				3 F. F		<u> </u>	
					limposs	ibility				
11 3 4						1 7 4 1 7			<u> </u>	
3,0		11	]			1				

Where West Load

Na : Number of times of half turn

:Penetrated depth

Penetrated length
(Half turning numbers permeter (Nsw= \frac{\kappa}{L} \times 100)

:N-Value ( gravel send or sendy soil) N= 2+0.067 Nsw N

N = 3 + 0.05 Nsx( clay or otherive soil)

qui:Unconfined compressive strength Qu = 00045k/sx + 0.0075/Nsw

Location Canal (TP-1)

Place Side of the hill

Surface Condition Noisture

-L0G	OF TES	ST PIT-		X32:134.1							
	Classifica			Wsw	Na	$D_{-}$	L	Nsw	<b>/</b>	$q_u$	- Remarks
(m)	Letter	Gooph	_ [	(KF)	(times)	(m)		(tines/m)		( 13/ch)	
	- , • <del>•</del>		ı	100	13_	0.25		52	5		Partly grovel
	<u>CF</u>	X		1)	43	0.45	20	215	16	2.06	and Sand=
			•		1,						1 1-1 1 1 1 1 1
\ \rac{1}{2}	ζĹ				Pene	tratio	n is i	mpossi	bilit	· :	(111)
0.5-		85 MX 5-2		*			1 1	<u> </u>			1.1117.1111.11
	GF	88888		Anot	er Pl	ece.	+ 1 .				
		0.0	_	100	22	0.25	25	- 88	8	1.11	
		.00		13	33	0.50	11	132	11	1.44	Partly gravel
1:0-	<b></b>	00		11	66	0.73	23_	284	21	2.58	and sand
	-	0 * 0					<del></del>			1-1	
	\	0	_	-	Pene	tratio	h is i	imposs	<i>ibilit</i>	<b>y</b> :: - : : :	
	6M	000							<u> </u>	11-1	
1.5-	GC		1	7.44			1 1 1 1 1			1 - 1 - 1 - 1	
	Ğ.M	0.00			-			-	11 11 12	1 Total	1010 2722 2730 273
	G.C.	0 0	1					l	<u> </u>	1	
200	""	0		<del>-</del> .	· -			T * * * *			
2.0-	1	0 0	1-			1. = ::			<u> </u>		
	-4.76 nm	0 0	1	1 1		· .			<u> </u>	•	
	СН	000	1								
							12-772-3-1				
2.5	1	000	1-	5 572	Litaren.	i i i i i i i i i i i i i i i i i i i					
1		6	1		1.	1		1			
	1	0 .	1-				II :	1111111		T	7.0000
		00	1-	1 - 1 - 1	1.4.1.1.1		T:::=	10 (-11 1-)	121 215		
-3.0		10	4 -				1		7-1,1-11		
[ŧ			ال	L	<u> </u>		_!	<u> </u>	<u> </u>		<del></del>

Where Wsw Load

 $\frac{1}{Na}$  : Number of times of half turn  $\frac{1}{D}$  : Penetrated depth

L. Paxetrated tength
New (Half turning numbers permeter (New - 160)

:N-Value ( grown sund or sandy soit) N= 2+0.067Nsw W (clay or objective soil) N=3+0.05Nsx

Ga : Unconfined compressive strength QU=QCQ45W5W+QQQ75M5W

Location Canal (TP-2) Place Boundary of Paddy and

Surface Condition Moisture

-/ OG	-LOG OF IEST PII-													
Depth	Classifica Letter	tion	_	Wsw	Na	D	<b>L</b>	Nsw	] N	$q_{u}$	- Remarks			
(m)_	Letter	Graph		(K2)	(times)	(m)		(tines/m)		( K3/(cm2)				
				100	0_	0.02	2	0	- ; O	0.45				
	<u>CF</u>			11	4	0.25	23	17	4	0.58				
		Z	-	51	8	0.50	25	32	5	0.69	272 4 2 4 5 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
^-				#1	7	0.75	11	28	. 3	0.66				
Q5-	СĹ			11	18	1.00	- 11 ,	72	. 6	0.99	1.1.2777 \$1.1,727			
			1	11	38	1.25	1 1 1 1 T	152	10	1.59				
			_	11 .	72	1.50	1.31	288	21	2.61				
				- 11	60	1.60	10	600	42	4.95				
<b>-1:0</b> -	· · · · ·					1 =	<u> </u>	<u> </u>						
	Sis	• • • • • • •			in	possib	lity_	<u> </u>	111111					
	Ss					) i numud	1 2 2 2 2	11.1	137 7	1:1:2	o leta estade			
			1		-	_ : : : : <u>:</u>		<u> </u>	F- 5 7 - 1					
1.5-	1		-		1			2 4-7 4-27	7.75771174	italija 🛊 🗝				
		-	-				- [44.4]	27, 47.						
	1					11.7	7.12.13.13	<b>-</b>						
			-			11.5	2: 1:122.	77 77 77	:	77-11/14				
2.0	<del></del>	1	<b>i</b> -			1 ==	11.2 1.	1:: :::		i <u>i</u> .				
			-			1 11.111	1 1	-12-5						
	1	1	-				1, 1, 4			1-2				
<del></del> ::				-				-2	12 <u>1</u>	17-1 11-1				
-2.5				1.55	1 1	11								
		· [ = arrajir =	1		İ	1.72.1.12.17								
			\ <u> </u>			1.1.1		in a real control of	1 2 2 2 2					
			-		i i i i i i i		1		The state of	127.54.5				
-3.0	<u> </u>		-	1127212	211272		1-11-1-1-1	127 7 75.11.5	i i i i i i i i	. I have been				

Where Was Load

Na : Number of times of half turn 9 : Penetrated depth

L. : Fenetrated tength Now : Half turning numbers per meter (Now \* 100)

N : N-Value ( group) sorid or sandy soil) N= 2+0.057Nsw

> N=3+0.05Nsx ( clay or exhabite soil )

Qu. : Unconfined compressive strength Qu = 00045 k/sv + 00075 Nsw

SWEDISH	SOUNDING	TEST

Location Canal (TP-3) Place Paddy

Surface Condition Moisture

L00	OF TES	ST PIT-		XX1.1X1	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>					:*` . * <del></del>	. 1.1 v 21 <u>.</u> 15 f <sub>.</sub> 12 <sub>1</sub>
	Classif:ca			Wsw	Na	$D_{\perp}$	L	Nsw.	: N Ì	$q_{u_{\cdots}}$	- Remorks
(m)	Letter	Graph	}	(K2)	(times)	(m)		(tines/m)		( 12/c2)	
	<u>CF</u>		_	_100_	0	0.05	5_	0	<u> </u>	0.45	
				<b>F1</b>	5	0.25	20	25	4	0.64	
				11	9	0.50	-25	36	5	0.72	17 - 14 1 · 12
0.5-				. fi	5	0.75	11	20	44	0.60	71. 1927.3 172
U.S.		•		51	7	1.00	10 ;	28	ţı	0.66	1.0 1 1 3.01 1.
			_	<b>\$1</b>	15	1.25	11	-60	6	0.90	1 11.0 11.1
32				11	12	1.50	. 31	48	- 5	0.81	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
1.0	SC		<b> </b>	n:	28	1.75	H	112	8_	1.29	
1:0-				12	32	2.00	*11	128	10	1.41	· · · · · · · · · · · · · · · · · · ·
				11 .	19	2.25	, H .	76	7	1.02	
-			:.	*** 11 ;	50	2.50	11	200	15	1.95	
1.5			]	11	38_	2.75	- 11	152	12	1.59	<del></del>
- 1:5-	፟ <u>v</u>			u u	52	3.00	ng sittiges.	208	16	2.01	
				2 2 7 3 1 7	-	• carego	1 11112	t <u>i</u> -		<u> </u>	
7		1			inj	ossib.	ility		1 11.1 .	1111 17	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
20	SiS-Ss		1_	2 to 12	1 2 2 2 2 2	with little	Enterty fact.	11.72 1 12	1: 5: 5: 5-2	1 1 2 t 2	
7.0	11.0		] _			27 77 1	7 <u>1</u> . 1 <del>.</del>	721 713		1 . 1	
			1			1. 2	i ji žiras.	tignit <b>z</b> i	1		
						<u> </u>		1 1: -11	1 2 3 3 3	77. 2.2.2	rugi igra i igra.
2.5		17.77		1.11 11 1		1. 1. 1. 1.	is identi:	-::::::	27.272 4.4		tu 0,4 ett <u>409,7974</u> -7
∥−2.5			1	12:11:11:1 <u>1</u> :2	11272	12		stilli	1 1		
		2-2-3-2	1					14 141	2 / 2 / 2		
		12-3-4	-	I	·		i i i i i i	1127-114-1	1 10 14	In Color	e ni erkellitä
				1 1 1			111111		rin ii.i	E Table	
3,0	• • • • • • • • • • • • • • • • • • • •	1	1	·• •			: -:	mis minin			

Where Wsw:Load

Ka : Number of times of half turn

D. Penetrated depth L. Paxetrated length

 $N_{SK}$  [Half turning numbers per meter (Ns<sub>K</sub>=  $\frac{H_0}{I}$  × 100)

N : N-Value ( gravet sund or sandy sait) N= 2+0.067Nsw

(clay or expessive soil)  $N=3+0.05Ns_{\rm m}$ 

Qu : Unconfined compressive strength qu=CCCA5Ws+CO075Nsw

Surface Condition Dry

-100	OF TES	SULJUU ST PIT-	<u> </u>	ZW.M.	1.13/1.1						
	Classifica			Wsw.	No	$D_{\cdot \cdot}$	. <i>L</i>	Nsw	[ N	$q_{u}$	Remarks
(m)_	Letter	Groph		(Y.8)	(times)	(m)	(cm)	(tines/m)		( 18/cot)	
			١. ا	100	8	0.25	:25	32	5	0.69	
	<u>CF</u>	-X	_	51	3				3 <u>1 (3</u> 7 )	1-, 1:	
				75	- O	1.43	118	0	0	0,34	
OE-				100	0	1.59	16	0	11	0.45	
05-		-		. 11	2.5		H.,	: 16	. 4	0.57	*************
		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	_	. 11	5	2.00	25	- 20		0.60	71:. 1 .: .: .
				# .	6 -	2.25	- A.	- 24	<b>31</b>	0.63	
10		· #		11 .	11	2.50	1.11.1	44	5	0.78	
1:0				- 1.41 -	14.5	2.75	117	58	6	0.88	
	CH		][		16	3.00	. <del></del>	64	11	0.93	
				19	24	3.25	, <b>51</b> 777.	96-	8 _	1.17	
1.0		Teri.		n	- 24	3.50	1111111	11	1.1.11	1.17	
1.5-			-	*** ព <i>ក</i> ្	_31_	3.75	7 111 <b>11</b> 1777	124	9	1.38	
			1	- 11	21	-4:00	11.11	84	7	1.08	
		4.4		11	50	4.14	14-	355	21_	3.11	
20		-		E., <b>9</b> L, 5	30	4.19	5	=600	33.	4.95	
-2.0	SM		1	. ::-		12,2 = 121			-1-11 - 1 -		
	(SC)		1	ii yaan i	impo	ssibil	ity		Effective of	1111, 11, 1	
-2 5 5					leinne ier			17-2-2-11		(ill lower	
			:	****		127 772	NATH FA		272122.	1	
2.5			17	÷;;:	1 42,000		l district				
			1	E + 7.880		1 1	<u> </u>			122	
	[EELE				1.1.1=1			] :::::- t::-	1 1-1-1		
		1.11.11	-								
3.0		4	1-	*1 1717771	:1:::::::::::::::::::::::::::::::::::::	Hilminn.	12.				

Weie lysw: Load

Na : Number of times of half turn

Penetrated depth

L. Penetrated tength Nss :Half turning numbers permeter (Nss=-16/L × 100)

:N-Value ( gravet sand or sandy soit) N= 2+0.067 Nsv.

( clay or othesive soil ) N=3+0.05Ns#

Qu. : Unconfined compressive strength 71=000151/54+000751/5W

Location Canal (TP-5)

Place Down Stream Right Bank

Surface Condition Notature

100	OF IE.	ŠĪ PIĪ—		7.V/1V()	<u>, , , , , , , , , , , , , , , , , , , </u>						
Depth	Classifica	tion		Wsw	Na	D	L:	Nsw	: N	$Q_{u}$	- Remarks -
(m)	Letter	Graph	_ ]	(YE)	(times)	(93)	(cm)	(times/m)		( kg/cof)	
. , .	. ČF	$\sim$		100	_7	0.25	25	28	4_	0.66	
				11		0.50	- 11	_34	5	0.70	100
				11		0.75	: #1	28	4	0.66	
05-		<u> </u>		I †	11	1.00	19	. 11	. 11	0.66	
0.5-				31	7.5	1.25	В	-30	11	0.67	
	•	[		11	9	1.50	11	36	5	0.72	
	}		]	* 11	7	1.75	: 11	28	4	0.66	
			1	11	5	2.00	. ti	20	11	0.60	177 - 177
-1:0-			1	Į1	6	2.25	11	24	11	0,63	<u> </u>
				11	6	2.50	. 11	11	11	##	: 1771
	[		1	11	7	2.75	. 10	28	. 11	0.66	
	CH		1	11	6	3.00	- 13	24	- 11	0.63	
<u> </u>		1	1	<b>1</b> 1	6.5	3.25	: 11	26	7 2 7 W	0.64	
	-		1	13	5	3.50	† 11	20	11 11	0.60	
		1	1-	, ft	4.5	• '	T. 1 11 1	18	112	0.58	12 H. H.
			1-	18	11	4.00	: : 11	- 44	- 5	0.78	en Annilume
2.0	1		<b> </b>	11 .	70	4.20	20	350:	25	3.07	11 17 1 1 1
			1-			12. 1		- 11. 1	±.÷		ma (gurasiy) z esper
	7		1		impos	sibili	ty:	1 2 2 2 2 2	=1 -		
		1	1		200	1	144 144	anga j		- + ± ±	
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	1-1-1-1-		1			i i i i i i i i	::11 :::::	7 27.127		11 11 11 11	
		1	1-		1 3.7.2				3		
-3.0	1		-						17 : 122		turing street a time.
II			┛.	L	<u> </u>			_1	<del></del>	<del></del>	. <del></del>

Where Wax Load

:Number of times of half turn

Fenetiated depth

L : Penetrated length:
Now: Half turning numbers per meter (Nove Max 100)

:N-Yalue ( gravel sand or sandy soil) N= 2+0.057Nsw

(clay or obesive soil) N=3+0.05Nsx

qu :Unconfined compressive strength Qu = OCC45Wsv+ 00075Nsw

Location Canal (TP-6) Place boundary of Paddy

Surface Condition Dry

-100	-LOG OF IESI PII-													
	Classifica		[	Wsw	Na	D	L	Nsw	. <b>M</b>	$q_u$	- Remarks -			
(m)	Letter	Graph	_ `	(K\$)	(times)	(m)		(times/m)		( 12/ch)				
				100	41	0.25	25	164	11	1.68				
	CF	ľXI		17	19	0.50	- '11	76	7	1.02	- 1-1,1917- 5,7			
				17	18	0.75	1)	48	5	0.81	' / =			
~ -		000		11	14	1.00	14	56	6	0.87				
Q5-	(GM)	0.0		11	23	1.25	11 .	92	8	1.14				
* .	ומטו	000		11	33	1.50	11	132	10	1.44	7 71 11			
		00		11	32	1.75	\$1	128	9	1.41	<u> </u>			
				11	13.5		. 11	54_	6	0.85	125 125 125			
1; 0-	·			1!	50	2.20	20	250	15	2.32				
		[	l				•	1.7	I , -	<u> </u>				
	CC	<b> </b>	-		impos	sibili	ty		tulit it	1,1 . 2,7.	100000000000000000000000000000000000000			
	- SC		1					1						
1.5-	<del> </del>	1	-						* 1.11	1.1	uddana u Burgar			
			İ							T + + =				
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			1 -			1 1 1 1	1 1 1 1 1 1	1 47		227 27	Te no tanvai fragram			
2.0	1-:	<b></b>	1		<u> </u>		: *_	,44 % <u>45</u>		:::				
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- 2.5	₹.: <u></u>		1-		1		1 . ::::							
77 77	1 2 2 5			<b> </b>	1		:							
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			-						1					
3.0	J	J	┨~			1		1		<del>}</del>	a i magna bija			
1	• • • •		•	<b>1</b>		I	<u></u>							

Whele Wsw : Load Na Number of times of half turn

: Penetrated depth

L. Peretrated length  $N_{SK}$ : Half turning numbers per meter (NSK= $\frac{Ra}{L}$  × 100)

: N-Value ( gravet sand or sundy soil) N= 2+0,057Nsx : N=3+0.05Nsx t clay or objestive soil )

qui :Unconfined compressive strength 91=00015N/sw+ 00075Nsw

Location canal (TP-8) Place boundary of Paddy and Surface Condition Dry - Moisture

100	OF TE	SULJUL ST PII–	<b>-</b>	X (X)_(X1 1.	3_1_3/1_1	z.F. 0					
,	Classifica	tion		Wsw	Na	D	$\overline{L}$	Nsw	: <b>M</b>	Qu.	- Remarks
(m)	Letter	Graph	_ }	(KE)	(tires)			(times/m)		( K3/62)	
	SF		ļ	100	4	0.25	25_	16	- <u>4</u>	0.57	
	<u> 5r</u>		-		6	0.50	- 11 10	24		0.63	
				11	15	0.75		60	6	0.90	
·· 0.5-				\$1 	26	1.00	\$1	104	8	1.23	* * * * * * * * * * * * * * * * * * *
U,J				11	_33	1.25	11	132	10	1.44	
			_	£1	27	1.50	11	108	8	1.26	· · · · ·
				11	21	1.75	¥1 .,	84	7	1.08	
1.0			_	11	33	2.00	91	132	10	1.44	7 7 . 1102
1:0	]			11.	26	2.25	18	104	8	1.23	
			<b> </b>	11	15	2.50	1)	60	6	0.90	
	CH			<b>51</b>	14	2.75	11	56	n	0.87	1,51,517,51
				15	8	3.00	- 11	32	5	0.69	4_14_17=1 = * 14
- 1,5	1			. 11	10	3.25	111	40	31	0.75	
				11	18-	3.50	. :\$1	72	7 -	0.99	
	1			11	16	3.75	- 11 ::.	64	6	0.93	
			1 -	31	17	4.00	n'.	68	1 11	0.96	
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	1		]	. 11	15	4.75	- 11	60	6	0.90	- 10 2-00
	(CH)		1	. 11	60	5.00	51	240.	15	2.25	*: 1
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			1		impo	idies	lity		<u> </u>		
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- ~		77.7	;.	701.11	1.1-		= : = :			1111111	
3.0			1-	17 .27 .274	1, **.				73 .77	1-1-11	

War Lood Where

Na : Number of times of half turn

:Penetrated depth

· Penetrated length Nsw : Half turning numbers permeter (Nsw= $\frac{R_0}{L}$  × 100)

:N-yalue ( gravet sand or sandy soil) N= 2+0.057Nsw N (clay or othesive soil) N=3+0.05Nsx

qui : Unconfined compressive strength qu=00045War+00075Naw

Location canal (TP-7) Place Paddy

Surface Condition Dry - Moisture

-100	OF IE.	ST PIT~	· <b>_</b>	77711							
	Classifica			Wsw	Na	D	$L^{\pm}$	Nsw	· . W	$q_{u}$	Remarks
(m)	Letter	Graph	_	(K)	(times)	(m)		(times/m)		(13/03)	
	CF-			75_	0 .	0.36	36	0	0	0.34	
	<u> </u>		_	100	1.5	0.50	14	11	4	0.53	<u> </u>
				11	4	0.75	25	16	51	0.57	
ΛΕ-	]		_	11	3.5	1.00	11	14	11	0.55	7 7 27 27
Q.5-	}			<b>11</b>	0	1.13	13	0	0	0.45	
				<b>41</b>	2	1.25	12	16	4	0.57	
		1		<b>\$1</b>	3.5	1.50	25	14	11 .	0.55	<u> </u>
		1.		Pt	H	1.75	11	11	11	11	
1:O	T .	1		11	11	2.00	13	ti .	ñ	n	
	cι			n	* 11	2.25	21	. 15	13	11 : .	11.51.17.17.14
		1		11	4	2.50	55 <u> </u>	16 -	ii .	0.57	1919 - 3019 Mailist
1			1	14	- 11	2.75	11	11	n i	tı .	100 100 P F F T T 10 T
1.5		1			<b>FI</b>	3.00		11 :	- 11	: 10 ;	
				\$1	11	3.25	11	11	13	11	
	1	1		<b>31</b> -	5	3:50	- 19	20	<u> </u>	0.60	
20	-		1	- 51	6	3.75	D.	24	- 13	0.63	
2.0	1	1	1	17	7	4.00		28	11	0.66	
			1	33	8	4.25	13	32	5	0.69	Print dingday
<b> </b>	1	1		- 11	9.5	4.50		38	5	0.73	1 u= 1 -1
~~			1		6.5	4.75	ti .	26	4	0.64	
<b>∥</b> −2:5			1	- 11	9	5.00	9	36	5	0.72	
	•			11	8:	5.25	n	32	l n .	0.69	
			<b>-</b>	inh Dir	12 -	5.50		48	: 11	0.81	
		12773		: .			- :	<u>l</u>	<u> </u>	1.1.1.1	
3.0			1-	1	<del>.</del> . • :		.1 tu - tat.	1	11 2 72772	100 252	tri uženi il

Waw Load Mpelé

Na : Number of times of half turn

: Penetrated depth

L Pecetrated length Nsx (Half turning numbers per meter (Nsx \* 160)

:N-value ( gravet sand or sandy sait) N= 2+0,057Nsw N N=3+0.05Nsx ( clay or othesive soil )

du :Unconfined compressive strength Qu=00045le/se+00075Nse

Locatio	n <u>Ca</u>	nal (	TP-9.	Paddy	)	Locat	ion C	anal Date	(No.	10, P	addy)
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Fleas				. W		Penetral	Gauge!	oc i	··ou·i	N	
enetra ed Deen	Jauge Value	qc -	Qu 2	Value	Remark	ted De- epth m	Value	kg/ca	kg/co	Yalue	Remark
Y:1					<del></del>	epth m	62	7.8	1.5	2	
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	27	3.3	1			0.5					<b></b>
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1.3						1.3				-	
1.4		ļ			<u> </u>	1.4		<del> </del> -	<del> </del>	<del> </del>	
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Locatio	on ER	-1 (B	ila R	<u>L</u> B).		Locat	ion E	R-2 (	Воуа	R. L	B)
Йо 🚃		'Date				. Ho		Date	•		
Eleva	tion		ъ	<b>y</b>		Eler	ration			by	
						Penetra	Gauge	90 -	qu	<b>H</b>	
d Deen	Value	2 / 2	2	Value	Remark	ted De- epth m	Value	ce/cp2	kg/cm²	Yalue	Remark
				· · · · · · · · · · · · · · · · · · ·			25	3.2	0.6	1	<b></b>
0.1	_77	9.8	1.9	_3		0.1	26	702	11		
			3.3	4		0.3	24	tt :	11	11	
0.3	117	14.8	2,9	<u> </u>	<del></del>	0.4	24	11	Ļs	11	
0.4		12.6		113		0.5	30	3.8	0.7	)1	<u> </u>
0.6		12.9		11		0.6	34	4.3	0.8		<u> </u>
0.7		14.6		11		0.7	39_	4.9	0.9	<u> </u>	<b> </b>
0.8	109	13.8	2.7	11		0.8	38_	11	\$1 	11	{ <del></del> -
0.9		11.4	2.2	3		0.9	40 40	71			·
1.0		11.3	<u> </u>	11		1.0	39	ļ	11	11	<del></del>
1,1		11.1	<b>!</b>	\$1		1.2	64	8.0	1.6	2	1
1.2	77	10.3		<u> </u>		1.3	40	4.9	1	-1	
1.3	74		· · · · · · · · · · · · · · · · · · ·	<del>•</del>		1.4	23				
1,5	67	1	<del></del>	2		1.5	44				<u> </u>
1.6	75		1			1.6	70	<b>-</b>			
1.7	*	11.4	2.2	11	<u></u>	1.7	74	1			<del> </del>
1.8			2.8		ļ	1.8	175	23.9	4.7	4_7	
1.9	145	18.5	3.7	5		1.9					
2.0	<b>  -</b>					2.0	-{}	<del></del>			
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•28	At t	He an	dther	place	(-10m)	* At	the	anoth	ier p	lace (	- 10m)
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\* Remarks : Tested by Portable Penetrometer

73 : L.B.= Left Bank

Location	on El	? <b>-3(</b> B	lla R	<u>ь.в</u> )		Locat	ion _	Date	(ano	ther r	lace) Om)
No 1	HAN	'Date	<u> </u>	· · · · · · · · · · · · · · · · · · ·		Ele	vation	Dav	(another place) eby		
Breta	*1011 _		<u> </u>	<u> </u>	Panank	Panatra	Gauge	00	00	N	
enetra ed Deer	Gauge Yalue	qc	qu	Value	Remark	ted De-	Value	kg/cm <sup>2</sup>	kg/cm²	Value	Remark
F)7 14		Kg/Cm	VRL CM			epth m	25	3.2	0.6	1	
0.1		6.4		2	<del></del>	0.5					
0.2	30		0.7	11		0.3		4.0		11	
0.4	59	7.5		2		0.4	31	11	H.	"	
0.5	44	5.5	1.1	11		0.5	37	4.7			ļ
0,6	92	11.5	2.3	3		0.6	100	12.6	2.5	4	
0.7	150	19.1	3.8	5		0.7		14.9			
0.8	<del>                                     </del>	ļ	ļ	<b>_</b>	<del></del>	0.8		17.3 20.9		_	<u> </u>
0.9		<del> </del>		<del> </del> -		1.0		22.8		1	
1.0	<del></del>	<b>-</b>				1,1	ĬĬ				
	mno gs	bili	EV	:		1.2					<u> </u>
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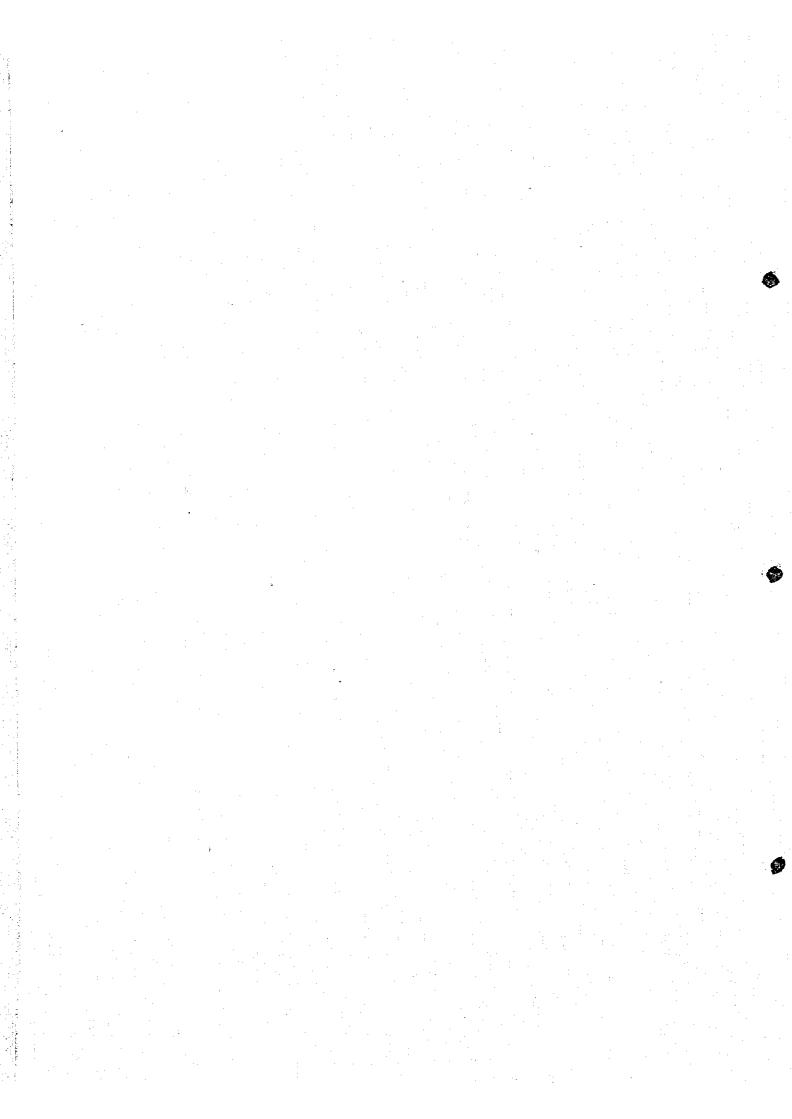
Loc	atio	on EF	-4(B1		R.B)		Local	tion _		(And	other	place)
١	- 1-		'Date				· No ·	2	Date			TORD
- 6	1 6. Y 15	CIUII			•							
					Nt		Penetra	Gauge	qc	gu	Ň	
e <b>d</b> !	Deep	Yalue	kg/cm	kg/cm	Value	Renark	ted De-	Value	kg/cm <sup>2</sup>	(E/cB	Yalue	Remark
b O	1	150	19.1	3.8	5		0.1	65	8.0	3.6	ζ	
			25.4		7			57		1.4	13	
		180	22.8	4.5	- 11		0.3	61	7.7		11	<b></b>
	4	200	25.4	5.0	1 31		0.4	67 55	7.0	1.6		<b></b>
0,	5_						0.5	60_	7.7		<u>†1</u>	<u> </u>
	Śr	nnoss	i bi li	ty.			0.7	84	10.6		3	
		2222		-	<b>†</b>	<del>                                     </del>	0.8	100	12.6	2.5	4	ļ
			<u> </u>				0.9	120	15.2	3.0	11 	.
					<u> </u>	<u> </u>	1.0	105	13.4		11	<b> </b>
				<b> </b>		<b>_</b>	1-1-1-	110	14.0		\ <u>"</u> -	<del> </del>
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				<del> </del>			1.4		9.6	1.9	11	İ
		<del> </del>			<del>                                     </del>	1	1.5	75	B	12	11	
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							1.7	110	31		11	<u> </u>
				ļ	<u> </u>		1.8	135	17.3	3.4	5	<del>-</del>
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Location	h ER	-5 (B		R.B)	e penetri	Locat	ion <u>E</u>	R-6 (	Kalo]	la R.	<u>г.</u> в)
Ño		'Date	-			No	1	- Date	e	· · · · · · · · · · · · · · · · · · ·	
E) evat						Elevation by					
enetra G						Penetra	Gauge	ġc -	qu	ĸ	
ed Deery	alue	/.2	12/2	 Value	Renark	ted De-				Yalue'	Remark
<u> </u>						արարար արագրագրագրի		12.0		3_	<u> </u>
		11.1	2.2	3		0.2		12.3		11	
0.2	77	9.8 11.4	1.9 2.2	11		0.3	77	9.8	1.9	12	
0.4		12.0		1 11		0.4	76	9.7	11	Į1	]
0.5		11.4		\$1		0.5		14.0		4	
0.6	67	8.6		2		0.6	60		*	2	
0.7	42	<del>•</del>	1	1	<del> </del>	0.7	55			11	
0.8	22	2.7	0.5	11 41		0.8	<u>52</u> 47	1		11	
0.9	20	2.5		11		1.0	42			1	
1,0	2 <u>3</u>	6.7		ļ <i>-</i>		1.1	86	11.0		3	
1.2	75	9.6	1	3		1.2		10.3		11	
1.3	77		1	11		1.3	77		1.9	11	<u> </u>
1.4		12.3	2.4	4_	<u> </u>	1.4		5.0		1 1	
1.5		11.4				1.5		5.7	1.0	1	<del>- </del>
1.6		8.0	1	1	1	1.6	40		1.2	2	<del></del>
1.7		8.9				1.8	46		1.1	11	
1.8		11.4		11	<del> </del>	1.9	54		1.4	11	
2.0		11.4		· · ·	<u> </u>	2.0	42	5.2	1.0	1	
2.1	87			11		2.1	40		1.0		
2.2		8.9	1,7		<u> </u>	2.2	60		11.5		<del></del>
2.3		11.1			<u> </u>	2.3		10.3			
2.4		12.9				2.4		14.6		!	
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2.9						2.9	1				
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Q	c t C	Cone be	earing	capaci	ty = 5 gv sure	= 10.C	= 3.5	5 N	2		

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Locati	on ER	-6 (K	alola	R. R.	<b>B)</b>	Local	tion E	R-7 (1	<u>kalol</u>	a R. J	<u>В</u> )
Ŕф <u>12 г</u>		'Date				· 310		Date	<del></del>		<del></del>
Flore	tion		Ъ	y	••• •• ••• • •	Ele	vation		1	by	
			<b>A11</b>	N	D	Penetra	Gauge:	oc l	ou	<b>R</b>	
enetra ed Deer	Value	, 2	. , 2	ir-inia	Remark	ted De-	Value	colon to	e/cm4	Value	Remark
h n		<del></del>					10	£ 0	1.0	4	
0.1		12.6		4		0.1	42 60	5.2 7.7		2	
0.2	Z	15.8	3.1	<u>5</u>		0.2		7.4		11	
0.3		19.1	3.8		} 	0.3	52	6.4		11	<u> </u>
0.4		14.0	2.8	4		0.4	47	6.1		11	
0.5	1	14.6	2.9			0.6	52	6.4		п	<u> </u>
0.6	60	7.7	1.5	2	<del> </del>	0.7	47	6.1	11	11	1
$\frac{0.7}{0.9}$	60	11	11	11	<u> </u>	0.8	40	5.0	1.0	1	
0.8	60	11	- 12	11		0.9	47	6.1		2	
0.9	60	11	11	31	<u> </u>	1.0	55	7.0	_	11	
1.0 1.1	70		1.7	3	<del>                                     </del>	1.1	40	5.0		1	
1.2		10.1	ţ	11		1.1	60	7.7		2	
1.3		10.3	11	10		1.3	87	11.1		3	
1.4	75	· i —	1.9	1)		1.4	45	5.7	1.1	2	<u> </u>
1.5	77	9.8	·	11		1.5	55	7.0	1.4	62	
1.6		13.4		4		1.6	62	7.8	1.5	11	
1.7		19.1	1	1		1.7	52	6.4		11	2 · - t
1.8	11		1			1.8	35	4.4		1	<u> </u>
1.9						1.9	42	5.2		<u> </u>	<u> </u>
2.0	1			I		2.0	50	6.4	<del></del>	2	_
				<u> </u>		2.1	45	5.7	ž	- "-	<i>€.</i> ?
	<u> </u>					2.2	<u> </u>	17.0	1,4	1 11	<u> </u>
<del>-</del>	im	possi	<u> vilit</u>	<u> </u>		2.3	62		1.5	n	-{
	<u> </u>		<u> </u>	<u> </u>	<u> </u>	2.4	57		1.4	<del> </del>	<b>-</b>
		_	_	<b></b>	_	2.5	52	1 6.4	1.2	- "-	_
<del></del>		<b>_</b>		-		2.6	52		.Į	_	
	_	<u> </u>	<u> </u>	<b></b>	<u> </u>	2.7	77		$\frac{1.9}{1.7}$	3	<del>-</del>
<del></del>			-	<del> </del>		2.8	<u>70</u>   82		2.0	- u	
·	-	<del> </del>	-			2.9	85		2.1	11	
	-[	<del></del> -	-}		<del></del>	3.0	89		2.2	11	<u> </u>
. <u> </u>			<del>-</del>			3.1		11.1		- 11	
			-	<del>- </del>	-	3.2	88 122		3.0		<u> </u>
						3.4	122	11.71.	"	11	
				-		3.5	160	20.	4.0	6	
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		_	-	-		3.6 3.7	- -		E'ALIT	e another	Piete,
		_[		-		3,8		1			e penetrated
				-			moos	sibility	-		

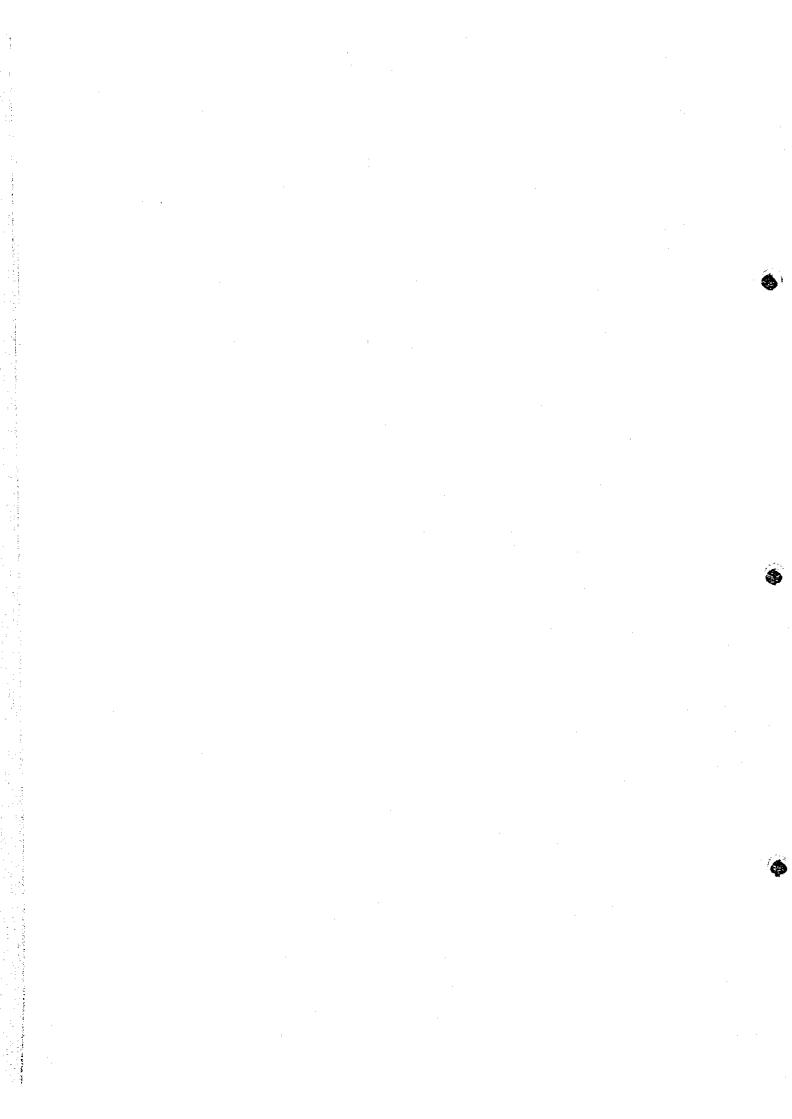
TOPOGRAPHY



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(1) SDS (Installed by the Government of Indonesia)

o. of Bench Mark	Elevation	No. of Bench Mark	Elevation
	(m)	<u> </u>	(m)
A.T.G.S	0.0000	S.D.S 31	13.4356
s.d.s 1	10.5670	S.D.S 32	27.7766
s.b.s 2	3.2450	S.D.S 33	44.1856
s.D.s 3	13.0920	S.D.S 34	55.4246
s.d.s 4	45.2487	S.D.S 35	18.2575
S.D.S 5	47.1777	S.D.S 36	23.2094
s.d.s 6	90.2898	S.D.S 37	13.2814
s.d.s 7	168.3444	s.p.s 38	12.5951
S.D.S 8	371.0997	s.D.S 39	23.4880
S.D.S 9	448.5060	s.D.S 40	15.2549
s.p.s 10	355.3865	s.D.S 41	13.9869
S.D.S 11	203.0478	S.D.S 42	17.8478
S.D.S 12	113.4622	S.D.S 44	22.9218
s.p.s 13	83.5466	S.D.S 45	27.4898
S.D.S 14	100.2414	S.D.S 46	21.5427
S.D.S 15	94.4508	S.D.S 47	11.1317
s.d.s 16	94.0611	S.D.S 48	9.916
s.D.S 17	117.8054	S.D.S 49	15.901
S.D.S 18	100.3077	s.D.S 50	11.386
s.b.s 19	110.1779	s.D.S 51	13.591
s.D.S 20	169.5722	s.D.S 52	25.438
s.p.s 21	106.9714	\$.D.S 53	28.886
S.D.S 22	49.9517	s.D.S 54	32.182
S.D.S 24	32.2230	s.d.s 55	112.403
s.D.s 25	100.4778	s.D.S 56	111.940
s.D.S 26	78.3220	S.D.S 57	109.302
s.p.s 27	123.4609	s.D.S 58	118.754
s.d.s 28	43.3828	s.d.s 59	122.304
s.D.S 29	30.5218	s.d.s 60	147.744
s.D.S 30	24.1827	s.d.s 61	134.102

	<del></del>		
No. of Bench Mark	Elevation	No. of Bench Mark	Elevation
	(m)		(m)
S.D.S 62	151.9171	S.D.S 94	17.6377
S.D.S 63	115.4602	s.D.S 95	6.6689
S.D.S 64	97.0473	S.D.S 96	9.9334
s.D.S 65	36.8354	S.D.S 97	10.5887
s.d.s 66	82.6855	S.D.S 98	4.7417
S.D.S 67	3.7656	s.d.s 99	3.3087
S.D.S 68	2.7296	S.D.S 100	2.8135
S.D.S 69	5.7167	S.D.S 101	2.9074
S.D.S 70	20.0288	S.D.S 102	10.2704
S.D.S 71	1.8899	s.b.s 103	27.9966
S.D.S 72	4.8780	S.D.S 104	31.6545
S.D.S 73	3.0401	s.p.s 105	22.5044
S.D.S 74	7.5120	s.D.S 106	20.8215
s.d.s 75	10.6038	s.b.s 107	23.5084
s.d.s 76	23.4349	s.D.S 108	35.3132
S.D.S 77	35.9890	s.b.s 109	42.4243
S.D.S 78	31.5781	S.D.S 110	72.6315
S.D.S 79	30.9124	S.D.S 111	114.0239
S.D.S 80	26.0605	S.D.S 112	164.3582
S.D.S 81	27.7715	s.d.s 113	148.4972
S.D.S 82	124.1612	S.D.S 114	131.0339
S.D.S 83	121.5972	s.d.s 115	53.4962
S.D.S 84	201.2562	s.d.s 116	32.8220
S.D.S 85	263.9072	S.D.S 117	16.2215
S.D.S 86	295.4062	S.D.S 118	1.5992
S.D.S 87	437.6382	s.d.s 119	1.5152
S.D.S 88	224.3242	s.D.S 120	1.3122
S.D.S 89	360.4512	S.D.S 121	12.7290
s.D.S 90	341.0062	S.D.S 122	21.4834
s.D.S 91	356.7692	S.D.S 123	14.6122
S.D.S 92	77.1411	S.D.S 124	16.8427
S.D.S 93	59.0939	S.D.S 125	24.7632

No. of Bench Mark	Elevation	No. of Bench Mark	Elevation
	(m)		(m)
S.D.S 126	21.5587	S.D.S 145	9.7469
S.D.S 127	31.3951	S.D.S 146	12.6499
S.D.\$ 128	32.9879	S.D.S 147	139.5329
S.D.S 129	39.8012	S.D.S 148	146.0929
S.D.S 130	101.7336	S.D.S 149	162.4969
S.D.S 131	51.7043	S.D.S 150	264.5219
S.D.S 132	19.8698	S.D.S 151	466.1229
S.D.S 133	15.8798	S.D.S 201	20.7286
S.D.S 134	10.9258	S.D.S 202	28.3439
S.D.S 135	37.5498	S.D.S 203	59.4959
S.D.S 136	45.0198	S.D.S 204	77.1339
S.D.S 137	12.7878	S.D.S 205	73.3399
S.D.S 138	22.8348	S.D.S 206	34.1509
s.o.s 139	34.7468	S.D.S 207	34.5459
S.D.S 140	11.8628	S.D.S 208	29.1879
S.D.S 141	4.2788	S.D.S 210	9.3829
S.D.S 142	28.6668	S.D.S 211	22.2901
S.D.S 143	18.5799	S.D.S 212	26.8251
S.D.S 144	8.4029	S.D.S 213	68.2551

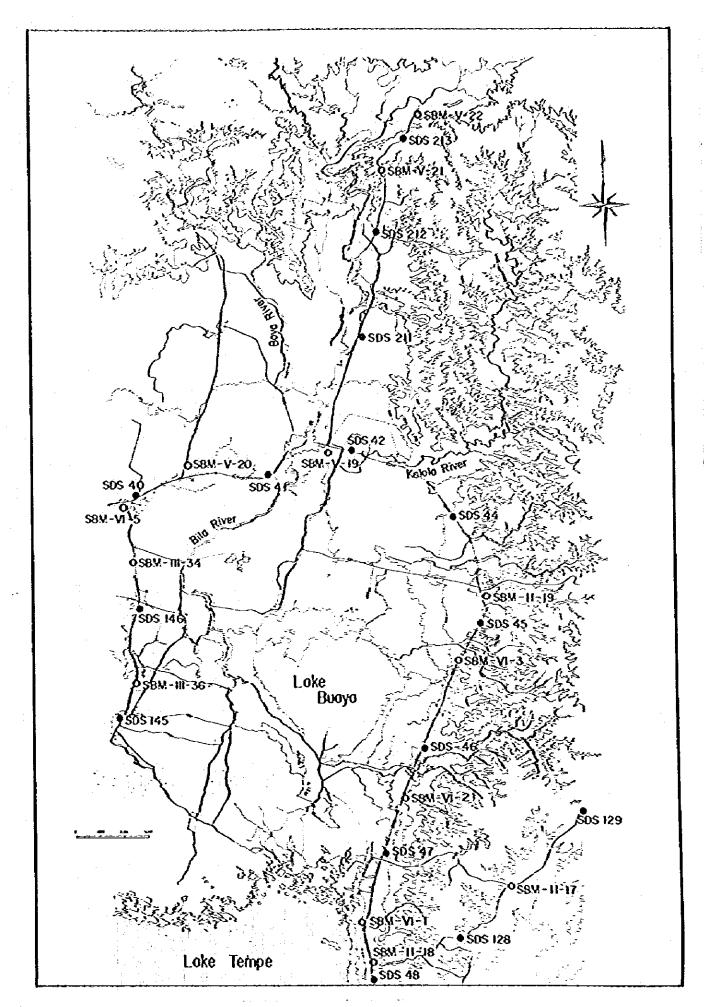
## (2) S.B.M (Installed JICA MAPPING TEAM in 1978)

No. of Bench Mark	Elevation	No. of Bench Mark	<b>Elevation</b>
	(m)		(m)
1.S.B.M 1	23.8544	I.S.B.M 8	4.6162
I.S.B.M 2	24.7067	I.S.B.M 9	3.5795
I.S.B.M 3	35.8172	I.S.B.M 10	2.7679
1.S.B M 4	25.9589	I.S.B.M 11	4.7842
1.S.B.M 5	21.8899	I.S.B.M 12	4.6809
1.S.B.M 6	35.7001	1.S.B.M 13	82.1944
1.S.B.M 7	24.0557	I.S.B.M 14	22.6260

lo. of Bench Mark	Elevation	No. of Bench Mark	Elevation
	(10)	\$11,000 to 100 t	(w)
I.S.B.M 15	20.2782	11.S.B.M 12	10.9630
I.S.B.M 16	26.2635	11.S.B.M 13	12.4940
I.S.B.M 17	26.4684	II.S.B.M 14	14.6711
I.S.B.M 18	19.8115	11.S.B.M 15	42.6138
I.S.B.M 19	105.8302	11.S.B.M 16	83.4885
I.S.B.M 20	116.2114	II.S.B.M 17	38.3276
I.S.B.M 21	78.2943	II.S.B.X 18	11.1997
I.S.B.M 22	23.5972	II.S.B.M 19	40.2381
I.S.B.M 23	21.5702	II.S.B.M 20	34.8628
I.S.B.M 24	34.0039	II.S.B.M 21	18.0548
I.S.B.M 25	40.2050	II.S.B.M 22	16.3298
1.S.B.M 26	16.4160	III.S.B.M 1	266.1945
I.S.B.M 27	13.0639	111.S.B.M 2	323.8043
I.S.B.M 28	27.0359	III.S.B.M 3	416.8488
I.S.B.M 29	22.1829	III.S.B.M 4	420.9797
I.S.B.M 30	18.9689	III.S.B.M 5	455.2086
I.S.B.M 31	13.1029	111.S.B.M 6	459.7916
I.S.B.M 32	26.3931	III.S.B.M 7	389.1531
I.S.B.M 33	28.4089	III.S.B.M 8	248.4694
I.S.B.M 34	32.8999	111.S.B.M 9	226.7951
I.S.B.M 35	59.4999	111.S.B.M 10	176.6381
1.S.B.M 36	64.1119	III.S.B.M 11	82.1454
II.S.B.M 1	34.1772	III.S.B.M 12	108.1257
11.S.B.M 2	42.6917	III.S.B.M 13	75.0642
II.S.B.M 3	77.8992	111.S.B.M 14	103.9502
11.S.B.M 4	98.6375	111.S.B.M 15	73.3030
II.S.B.M 5	118.6065	111.S.B.M 16	115.5502
II.S.B.M 6	118.8414	111.S.B.M 17	116.5184
II.S.B.M 7	109.2191	111.S.B.M 18	5.0026
11.S.B.M 8	16.4218	III.S.B.M 19	141.469
11.S.B.M 9	108.9374	111.S.B.N 20	148.217
11.S.B.N 10	158.2722	111.S.B.M 21	74.828

o. of Bench Mark	Elevation	No. of Bench Mark	Elevation
	(m)		(m)
III.S.B.M 22	30.9794	IV.S.B.M 12	5.2912
III.S.B.M 23	70.8343	IV.S.B.M 13	4.8844
111.S.B.M 24	64.3002	IV.S.B.M 14	17.9684
111.S.B.M 25	26.3283	IV.S.B.M 15	3.6169
111.S.B.M 26	70.5663	IV.S.B.M 16	5.3984
III.S.B.M 27	101.0535	IV.S.B.M 17	12.1443
III.S.B.M 28	14.5061	IV.S.B.M 18	22.9578
111.S.B.M 29	20.8673	IV.S.B.M 19	20.1121
111.S.B.M 30	28.0762	IV.S.B.M 20	82.8672
111.S.B.M 31	13.5033	IV.S.B.M 21	97.0939
111.S.B.M 32	13.4982	IV.S.B.M 22	109.2173
111.S.B.M 33	12.8171	IV.S.B.M 23	31.0431
111.S.B.M 34	15.8809	IV.S.B.M 24	41.7844
III.S.B.M 35	18.4429	IV.S.B.M 25	21.6380
111.S.B.M 36	10.8229	IV.S.B.M 26	30.7593
111.S.B.M 37	35.1279	IV.S.B.M 27	37.612
111.S.B.M 38	30.6349	V.S.B.M 1	2.4680
III.S.B.M 39	32.9249	V.S.B.M 2	19.798
111.S.B.M 40	24.5459	V.S.B.M 3	23.043
111.S.B.N 41	29.0059	V.S.B.M 4	28.355
IV.S.B.M 0	163.2947	v.s.B.M 5	32.581
IV.S.B.M 1	203.5545	V.S.B.M 6	31.210
IV.S.B.M 2	217.4444	v.s.B.M 7	32.335
IV.S.B.M 3	244.9027	v.s.B.M 8	11.085
IV.S.B.M 4	221.5397	v.s.B.M 9	140.579
IV.S.B.M 5	172.8864	v.s.B.M 10	138.758
IV.S.B.M 6	167.6390	v.s.B.M 11	11.888
IV.S.B.N 7	163.5218	v.s.b.x 12	6.095
IV.S.B.N 8	75.0537	V.S.B.M 13	11.851
IV.S.B.M 9	64.8473	V.S.B.M 14	10.122
IV.S.B.M 10	35.3399	v.s.B.M 15	7.20
1V.S.B.N 11	13.2226	V.S.B.M 16	5.192

No. of Bench Mark	Elevation	No. of Bench Mark	Elevation
	(m)		(14)
V.S.B.M 17	20.9979	VI.S.B.M 3	22.2964
V.S.B.M 18	4.7968	VI.S.B.M 4	32.3654
V.S.B.M 19	19.1271	VI.S.B.M 5	15.2511
V.S.B.M 20	17.8125	VI.S.B.M 6	2.2422
V.S.B.M 21	71.1531	VI.S.B.M 7	1.4312
V.S.B.M 22	55.6811	VI.S.B.M 8	1.7552
V.S.B.M 23	60.8234	VI.S.B.M 9	11.8653
V.S.B.M 24	58.6313	VI.S.B.M 10	15.0742
V.S.B.M 25	36.4221	VII.S.B.E 1	416.5862
VI.S.B.M 1	10.2461	VII.S.B.M 2	365.3082
VI.S.B.M 2	21.8572	VII.S.B.M 3	286.0812



Bench Marks in the Study Area

