REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS & HIGHWAYS

Feasibility Study
on
Pan-Philippine Highway Rehabilitation
Project(Mindanao Section)

GEO-TECHNICAL AND PAVEMENT INVESTIGATION REPORT

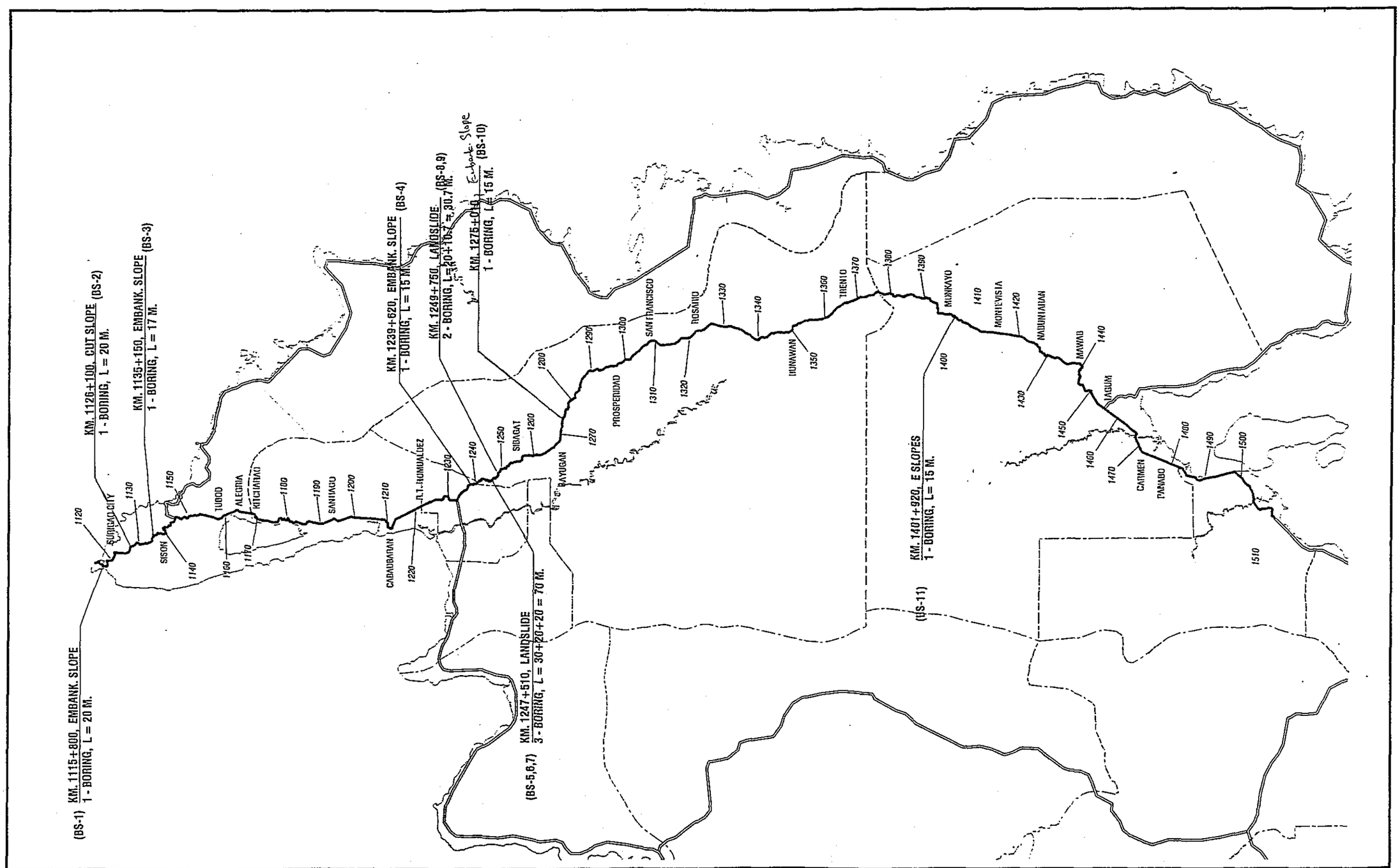
OCTOBER 1994

JAPAN INTERNATIONAL COOPERATION AGENCY

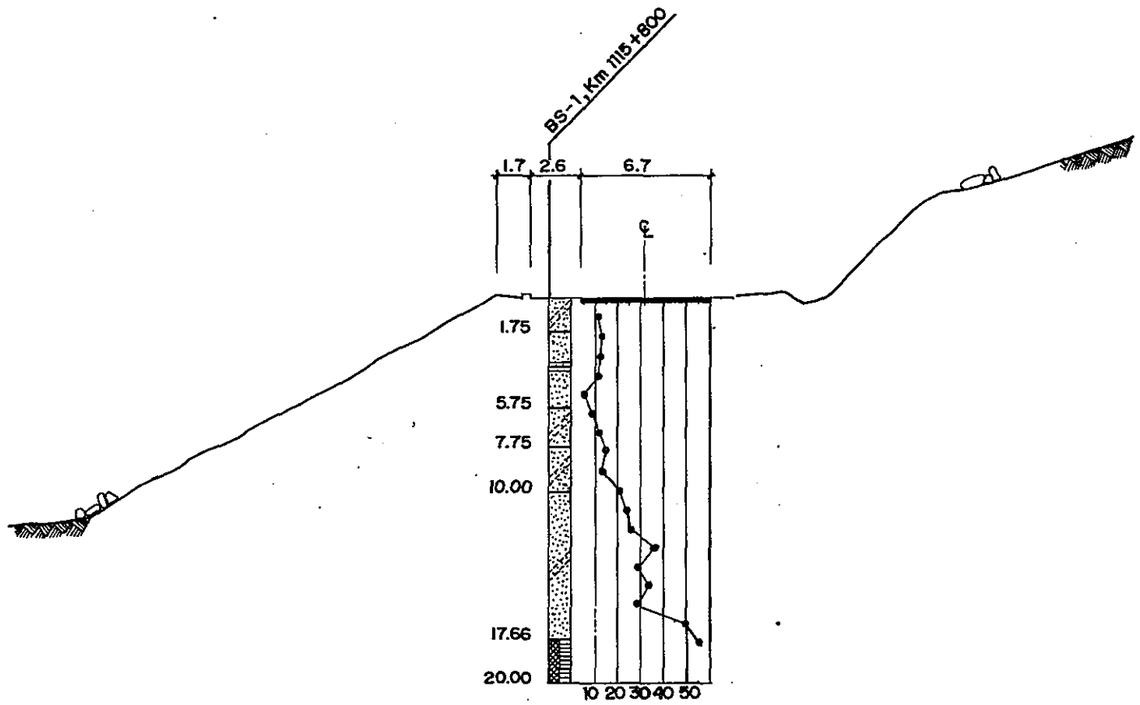
1. GEO-TECHNICAL INVESTIGATION

— SLOPE SITES —

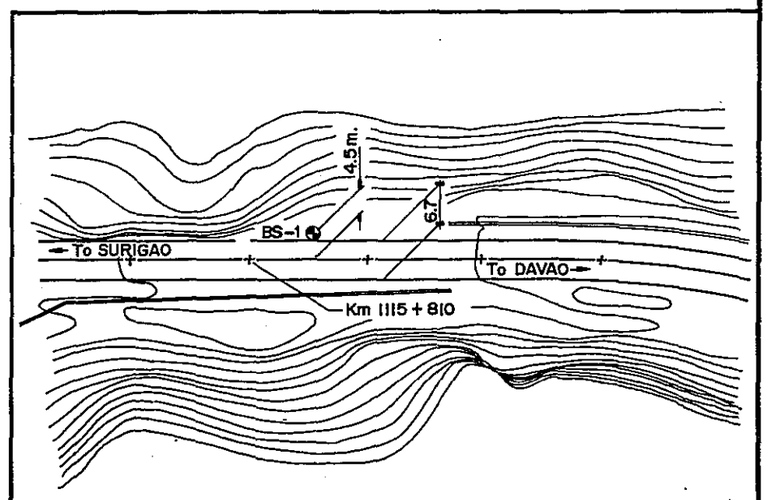
J/12/298



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: *FEASIBILITY STUDY ON* PAN–PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	GEOTECHNICAL SURVEY LOCATION FOR SLOPES	SHEET NO. S – 1



CROSS SECTION
SCALE: 1:300 m.



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-1, Km 1115+800 BORING LOCATION	SHEET NO. S-2

BORING LOG

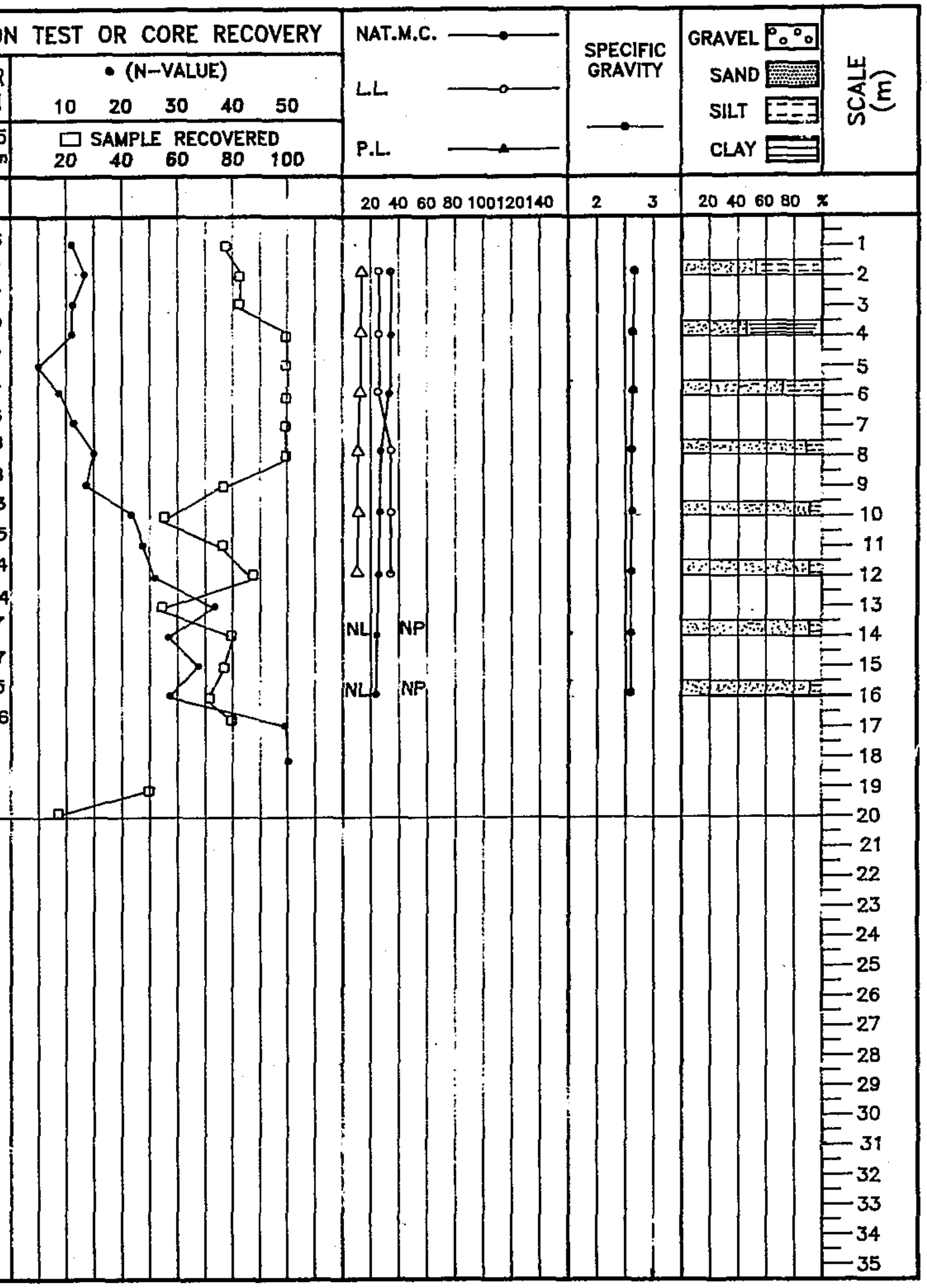
BS-1

GROUND SURFACE: GROUND ELEVATION: WATER TABLE :

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
0–1.75		1.75	1.75		Silty Sand	Gray	Dense	Low Plastic Fines
1.75–5.75		5.75	4.0		Clayey Sand	Yellowish Brown	Dense	Low Plastic Fines
5.75–7.75		7.75	2.0		Silty Sand	Gray	Dense	Low Plastic Fines
7.75–10.00		10.00	2.25		Silty Sand	Yellowish Brown	Dense	Low Plastic Fines
10.00–17.66		17.66	7.66		Silty Sand	Gray	Medium To Very Dense	Low Plastic To Non Plastic Fines
17.66–20.00		20.00	2.34		Rock	Gray		Coring

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM: 15 cm	15 cm	15 cm
.70 – 1.00	SC	11	3	5	6
1.70		13	4	6	7
2.00 – 2.70		12	4	5	7
3.00 – 3.70	SM	11	4	7	9
4.00 – 4.70		5	1	2	3
5.00 – 5.70		8	2	4	4
6.00 – 6.70	SM	12	5	6	6
7.00 – 7.70		15	5	7	8
8.00 – 8.70	SM	13	5	5	8
9.00 – 9.70		21	6	8	13
10.00 – 10.70		24	7	9	15
11.00 – 11.70		26	12	12	14
12.00 – 12.70	SM	36	10	12	24
13.00 – 13.70		29	11	12	17
14.00 – 14.70		34	12	17	17
15.00 – 15.70		28	11	13	15
16.00 – 16.70		50	19	24	26
17.00 – 17.55 / 17.66		65	65/11		
20.00					

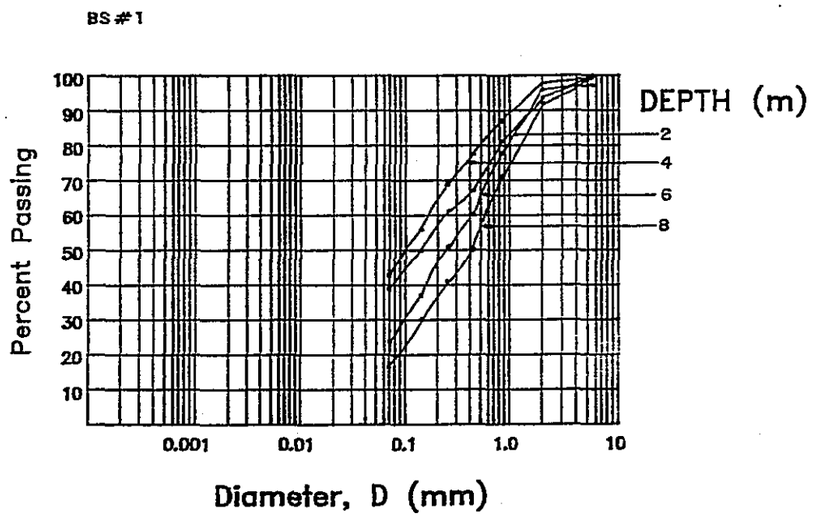


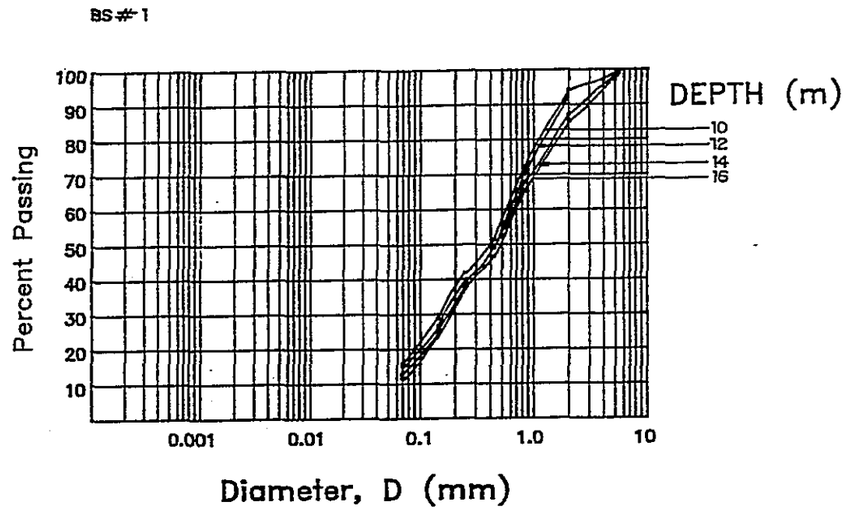
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-1 , Km 1115+800 BORING LOG	SHEET NO. S - 3

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS # 1

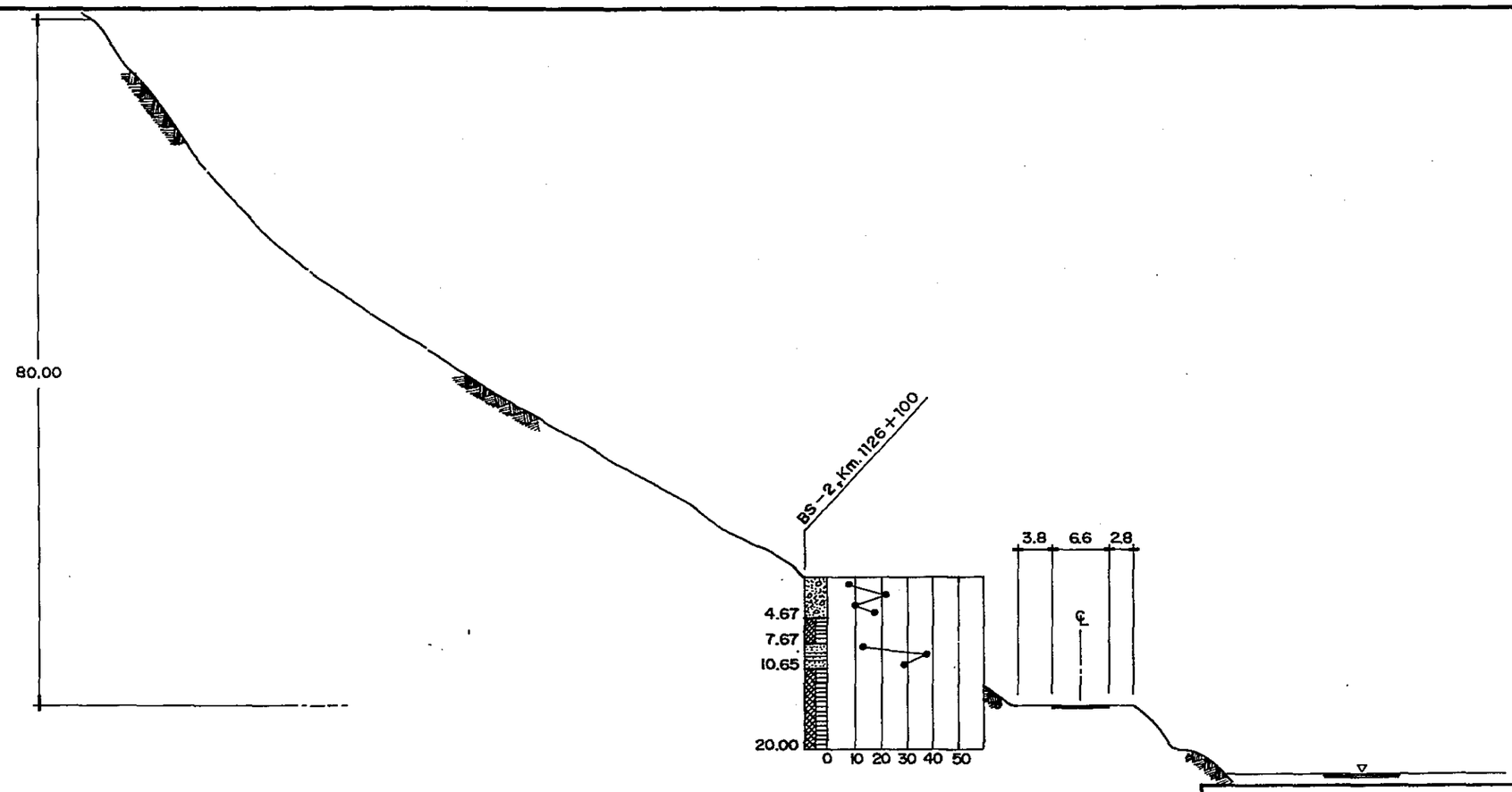
SAMPLE NO.	DEPTH NO.		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.00	Clayey Sand	13	35.7	34	18	16			100	97	94	81	68	61	50	39	2.71	SC
4	3.55	4.00	Clayey Sand	16	38.8	37	18.5	18				100	98	87	78	69	56	43	2.70	SC
6	5.55	6.00	Silty Sand	8	30.8	29	19	10				100	97	78	60	51	37	24	2.65	SM
8	7.55	8.00	Silty Sand	15	26.1	23	18	5				100	93	71	50	41	30	17	2.69	SM
10	9.55	10.00	Silty Sand	21	24.4	25	21	4				100	94	72	51	42	29	16	2.68	SM
12	11.55	12.00	Silty Sand	12	23.0	23	20	3				100	94	71	49	40	27	15	2.60	SM
14	13.55	14.00	Sand	29	24.3	N.L.	N.P.	N.P.				100	87	68	49	40	26	13	2.62	SP
16	15.55	16.00	Sand	28	23.0	N.L.	N.P.	N.P.				100	85	65	47	39	25	12	2.62	SP



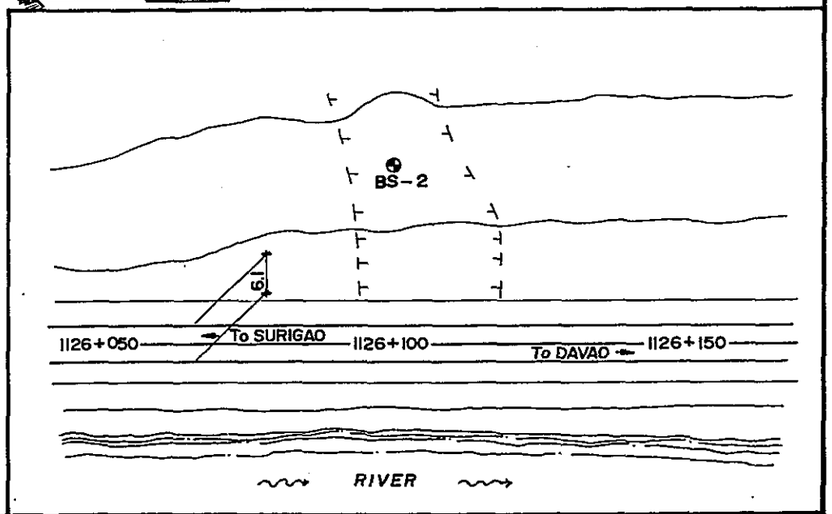


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-1, Km 1115+800 SUMMARY OF LABORATORY TEST RESULTS

SHEET NO.
S-4



CROSS SECTION
SCALE: 1:600 m.



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINADANAO SECTION)	BS-2, Km 1126+100 BORING LOCATION	SHEET NO. S - 5

BORING LOG

BS-2

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	STANDARD PENETRATION TEST OR CORE RECOVERY: DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM: 15 cm	15 cm	15 cm
GROUND SURFACE:				GROUND ELEVATION:			WATER TABLE :							
1–4		4.67			Silty Gravely Sand	Brown / Gray	Loose to Dense	Low Plastic Fines	0.70, 1.00, 1.70, 2.00, 2.70, 3.00, 3.70, 4.00	SP	7, 22, 10, 16	11, 9, 8, 16	4, 11, 5, 16	3, 11, 5, 10
5–7		7.67			Andesite	Gray		Coring						
8–10		10.65			Clayey Sand	Light Brown	Medium Dense	Low Plastic To Non Plastic	7.62, 8.12, 8.70, 9.00, 9.70, 10.00	GP, SC	13, 37, 29	4, 10, 7	5, 15, 11	8, 22, 18
11–19		20.00			Andesite	Gray		Coring						
20–35														

NAT.M.C. / L.L. / P.L. — • (N-VALUE) 10 20 30 40 50 — □ SAMPLE RECOVERED 20 40 60 80 100 — 20 40 60 80 100 120 140

SPECIFIC GRAVITY: 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

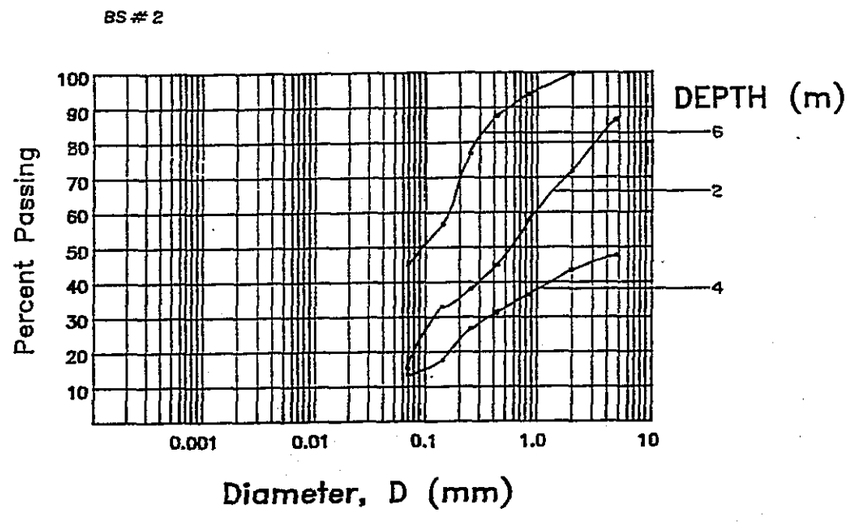
SCALE (m)

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-2 , Km 1126+100 BORING LOG	SHEET NO. S-6

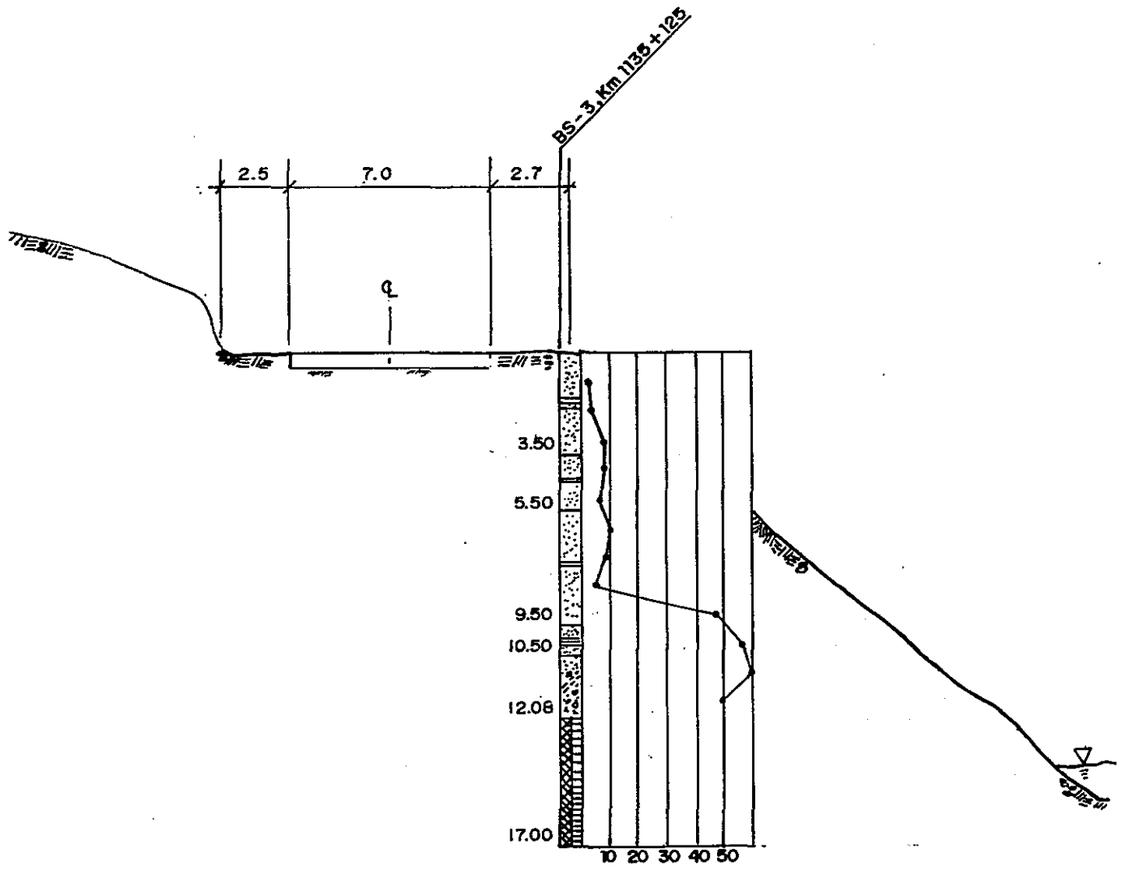
SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS #2

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.00	Gravelly Sand	22	16	N L	NP	NP		100	94	85	72	58	45	38	33	16	2.58	SP
4	3.55	4.00	Sandy Gravel	16	14	NL	NP	NP	87	64	53	48	44	37	31	27	18	14	2.59	SP
6	8.55	9.00	Clayey Sand	37	25	39	24	15					100	94	88	77	56	46	2.59	SC

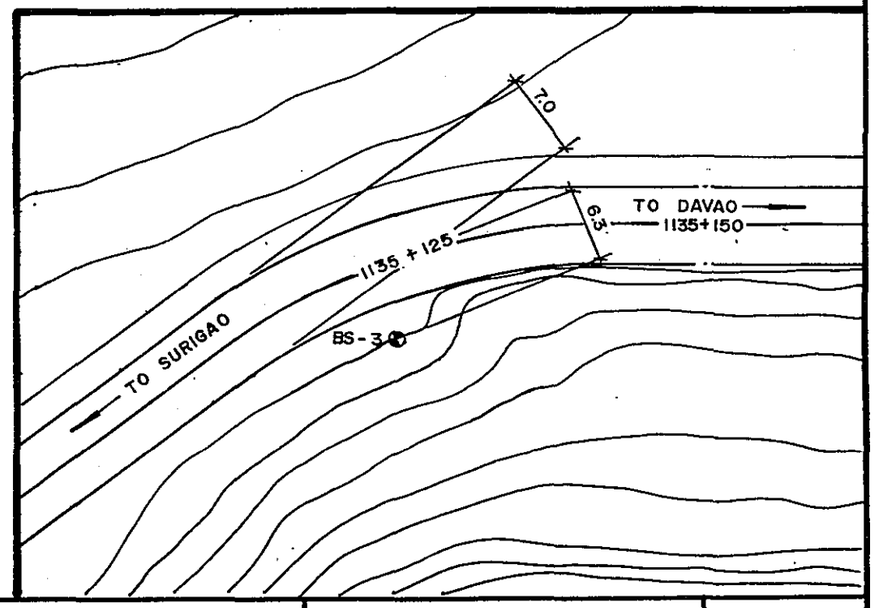


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-2, Km 1126+100 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-7



CROSS SECTION

Scale 1:200m



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-3, Km 1135+125 BORING LOCATION	SHEET NO. S-8

BORING LOG

BS-3

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:				GROUND ELEVATION:			WATER TABLE :	
		3.50	3.50		Clayey SAND	Yellowish Brown	Loose	Low Plastic Fines With Gravel
		5.50	2.00		Sandy CLAY	Gray	Loose	Low Plastic Fines
		9.50	4.00		Sandy CLAY	Yellowish Brown	Loose to Medium Dense	Low Plastic Fines
		10.50	1.00		Clayey SAND	Gray	Very Dense	Low Plastic Fines With Some Gravel
		12.08	2.58		Silty Gravelly SAND			
		17.00	4.92		ROCK	Dark Gray		CORING

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
1.15	SC	3	2	1	2
1.45		4	2	2	2
2.15		8	3	4	4
2.45		8	16	4	4
3.15		6	2	2	4
3.45		10	2	5	5
4.15		8	4	4	4
4.45		5	3	2	3
5.15		46	6	18	28
5.45	CL	57	57/15		
6.15		60	60/13		
6.45		50	50/08		
7.15					
7.45					
8.15					
8.45					
9.15					
9.45					
10.00					
10.15	SP				
11.00					
11.13					
12.00					
12.08					

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. —•—

L.L. —○—

P.L. —▲—

20 40 60 80 100 120 140

SPECIFIC GRAVITY —•— 2 3

GRAVEL SAND SILT CLAY

20 40 60 80 %

SCALE (m) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

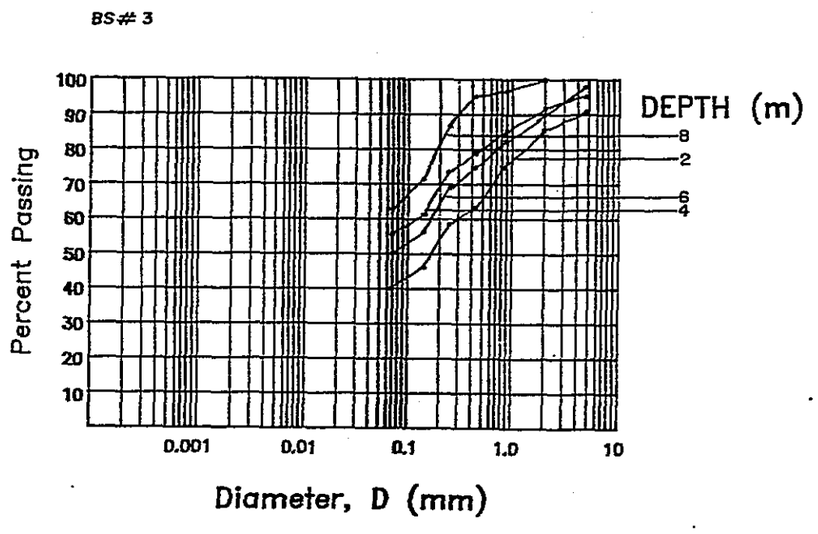
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-3, Km 1135+125 BORING LOG

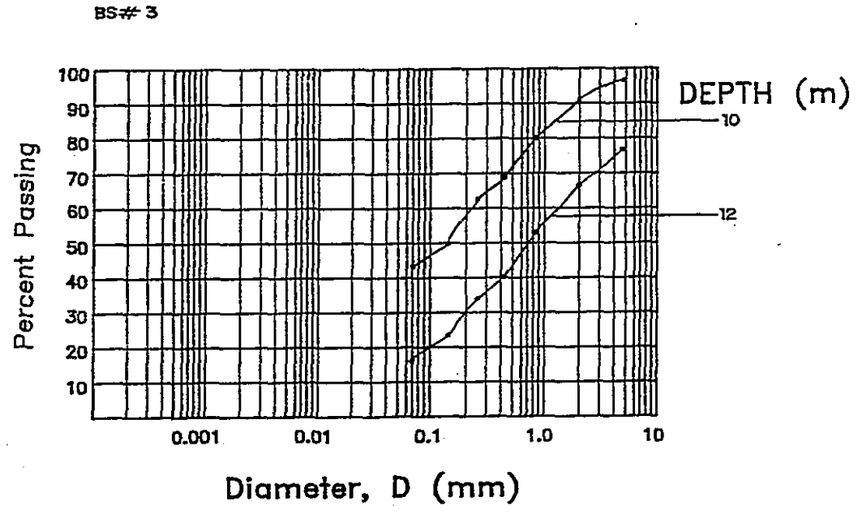
SHEET NO. S-9

SUMMARY OF LABORATORY TEST RESULTS

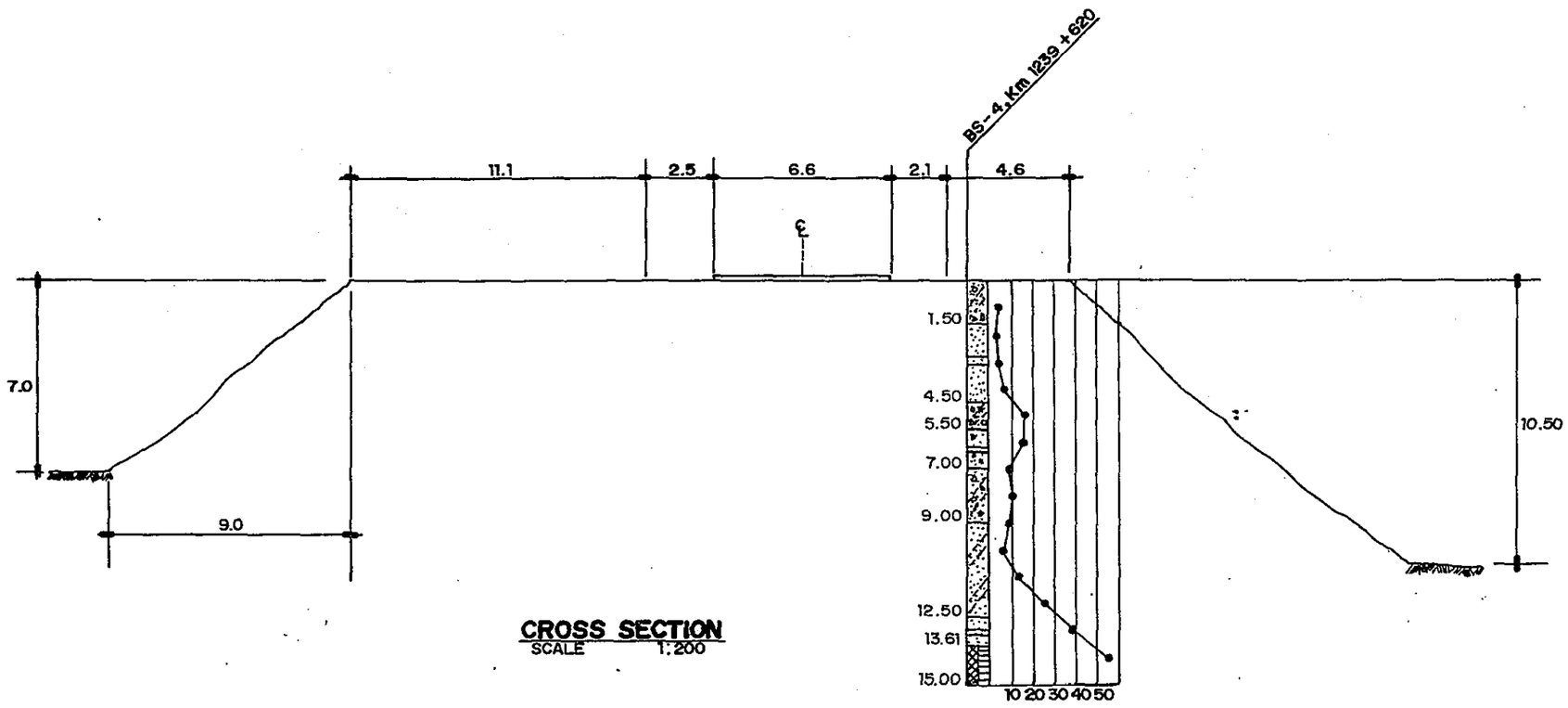
BORING NO. BS # 3

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-2	2.0	2.45	Clayey Sand	4	21.4	31	18	13		100	96	91	85	74	63	58	46	40	2.70	SC
4	4.0	4.45	Sandy Clay	8	26.8	37	21	16		100	98	95	92	85	79	73	61	55	2.71	CL
6	6.0	6.45	Sandy Clay	10	28.6	35	22	13			100	98	90	83	75	69	56	50	2.69	CL
8	8.0	8.45	Sandy Clay	5	29.9	42	26	16					100	97	95	87	71	63	2.61	CL
10	10.0	10.15	Clayey Sand	57	18.8	33	22	11			100	97	91	80	69	63	50	44	2.64	SC
12	12.0	12.08	Silty Sand	50	23.6	27	23	4	100	87	81	77	67	53	40	34	23	17	2.60	SM

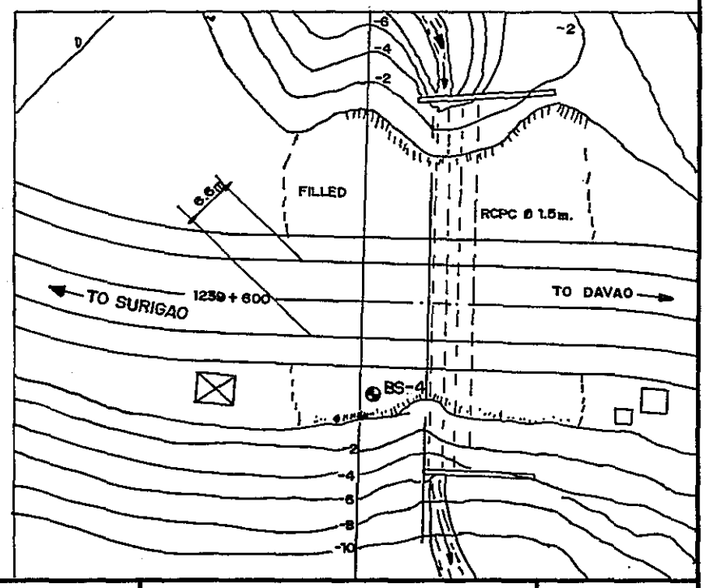




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-3, Km 1135+125 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-10



CROSS SECTION
SCALE 1:200



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-4, Km 1239+620 BORING LOCATION	SHEET NO. S-11

BORING LOG

BS-4

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:				GROUND ELEVATION:			WATER TABLE :	
1		1.50	1.50		Silty SAND	Gray	Loose	With Gravel
2								
3					Clayey SAND	Brown	Loose	Low Plastic Fines With Little Gravel
4		4.50	3.00					
5		5.50	1.00		Silty SAND	Gray	Dense	Gravelly
6					Clayey SAND	Brown		With Gravel
7		7.00	1.50					
8					Silty SAND	Light Brown	Loose	Gravelly
9		9.00	2.00					
10					Silty SAND	Brown	Loose To Medium Dense	
11								
12		12.50	3.50					
13		13.61	1.11		Clayey SAND	Gray	Very Dense	
14								
15		15.00	1.39		ROCK	Gray		CORING
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 1st 15 cm	2nd 15 cm	3rd 15 cm
0.7		4	1	2	2
1.0 1.7		3	1	1	2
2.0 2.7		4	2	2	2
3.0 3.7		7	2	4	3
4.0 4.7		17	9	10	7
5.0 5.7		15	6	6	9
6.0 6.7	SM	9	5	5	4
7.0 7.7		10	5	5	5
8.0 8.7		9	5	4	5
9.0 9.7		7	3	4	3
10.0 10.7		12	2	4	8
11.0 11.7		25	9	13	12
12.0 12.7		39	11	16	23
13.55 13.0	SC	60	60/16		
13.61					
14.7					
15.0					

NAT.M.C. — L.L. — P.L.

SPECIFIC GRAVITY

GRAVEL, SAND, SILT, CLAY

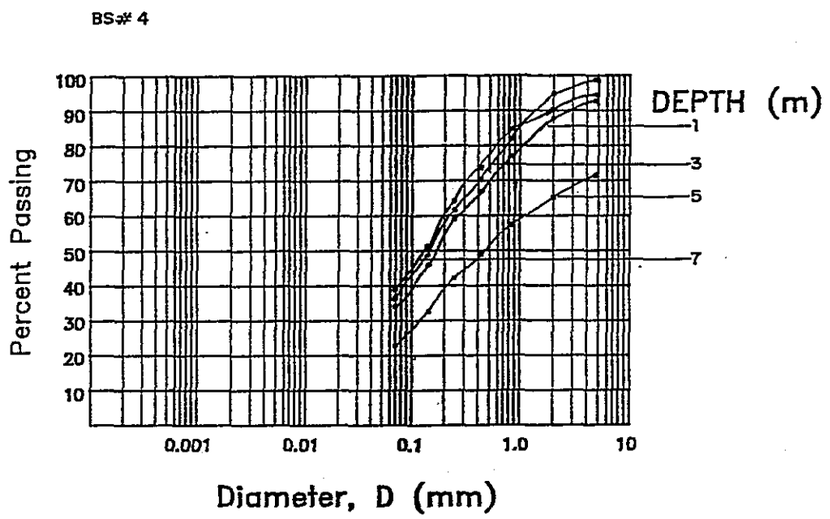
SCALE (m)

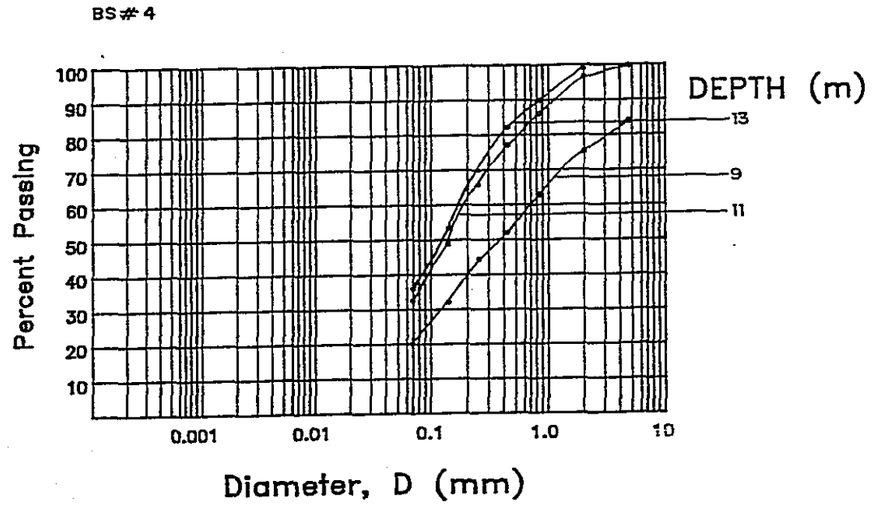
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-4, Km 1239+620 BORING LOG
			SHEET NO. S - 12

SUMMARY OF LABORATORY TEST RESULTS

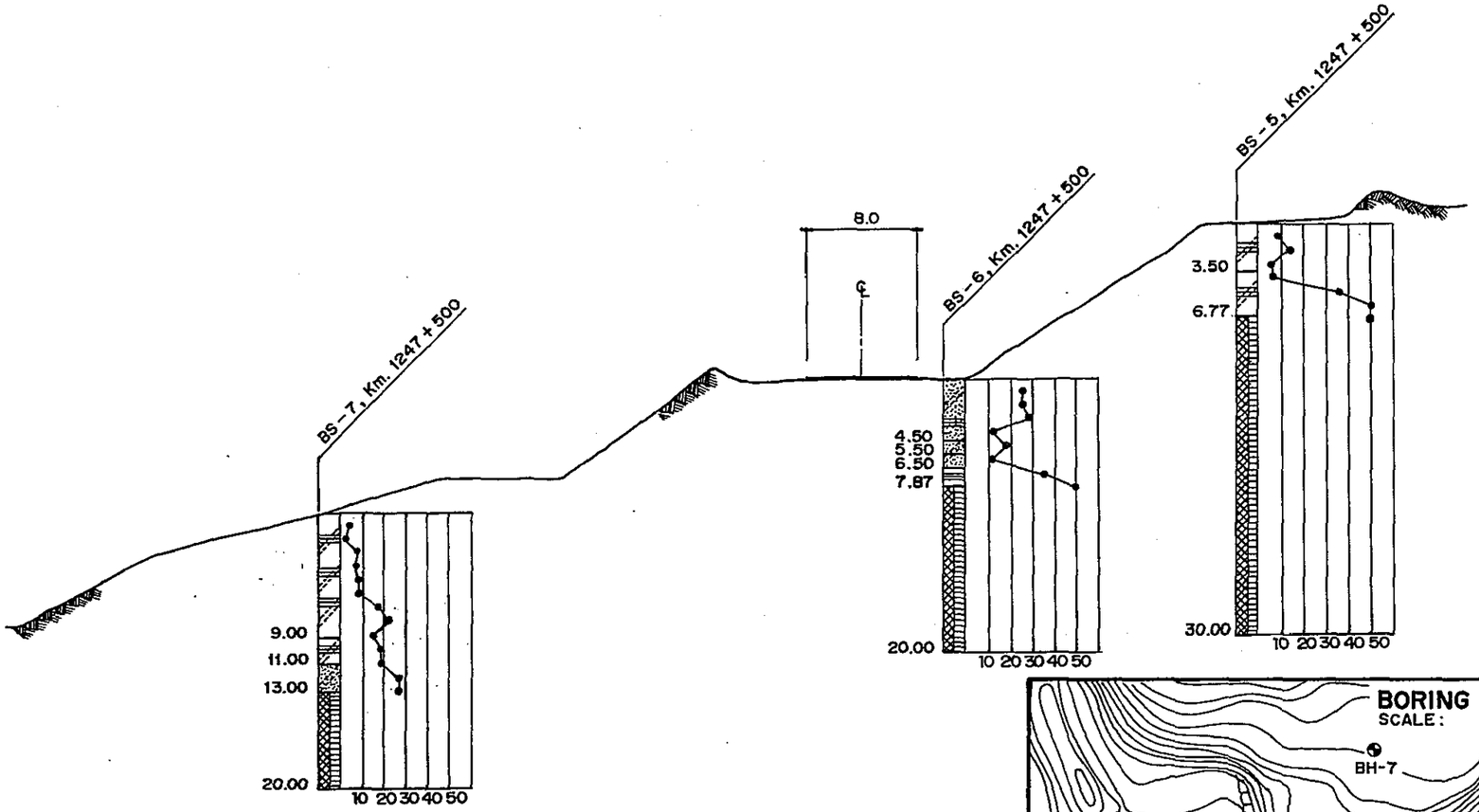
BORING NO. BS # 4

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-1	0.55	1.0	Silty Sand	4	26.1	29	19	10		100	95	93	88	77	67	59	46	34	2.64	SM
3	2.55	3.0	Silty Sand	4	25.4	31	20	11			100	99	95	82	70	61	48	36	2.65	SM
5	4.55	5.0	Silty Sand	17	17.7	24	21	3	100	83	73	71	65	57	49	42	32	23	2.69	SM
7	6.55	7.0	Silty Sand	9	26.5	34	22	12		100	96	94	90	84	73	64	51	39	2.62	SM
9	8.55	9.0	Silty Sand	9	23	22	18	4	100	89	87	84	75	63	52	44	32	20	2.70	SM
11	10.55	11.0	Silty Sand	12	36.8	27	22	5				100	97	86	77	66	49	33	2.68	SM
13	12.55	13.0	Clayey Sand	39	19.5	34	20	14				100	99	90	82	70	53	36	2.67	SC

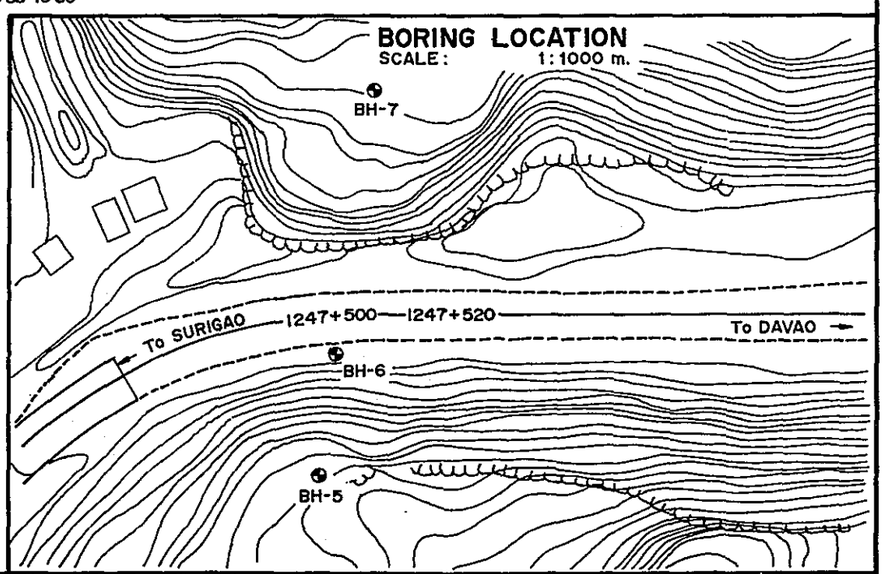




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-4, Km 1239+620 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-13



CROSS SECTION
SCALE: 1:400 m.



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-5,6,7 Km.1247+500 BORING LOCATION	SHEET NO. S-14

BORING LOG

BS-5

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:	GROUND ELEVATION:						WATER TABLE : 4.0 m.	
1–35		3.50	3.50		Silty CLAY	Brown	Stiff	High Plastic Clay
		6.77	3.27			Dark Gray	Very Hard	Medium Plastic Fines
		30.00	23.23		SILTSTONE	Dark Gray		CORING

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
0.7		9	4 4 5
1.0 1.7		13	7 6 7
2.0 2.7	CH	7	5 3 4
3.0 3.7		8	3 4 4
4.0 4.7		37	3 9 28
5.0 5.7	CL	50	50/12
6.0 6.55 6.77		50	22 50/7

• (N-VALUE) 10 20 30 40 50 — □ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. —•— L.L. —○— P.L. —▲— (20 40 60 80 100 120 140)

SPECIFIC GRAVITY —•— (2 3)

GRAVEL SAND SILT CLAY (20 40 60 80 %)

SCALE (m) 1–35

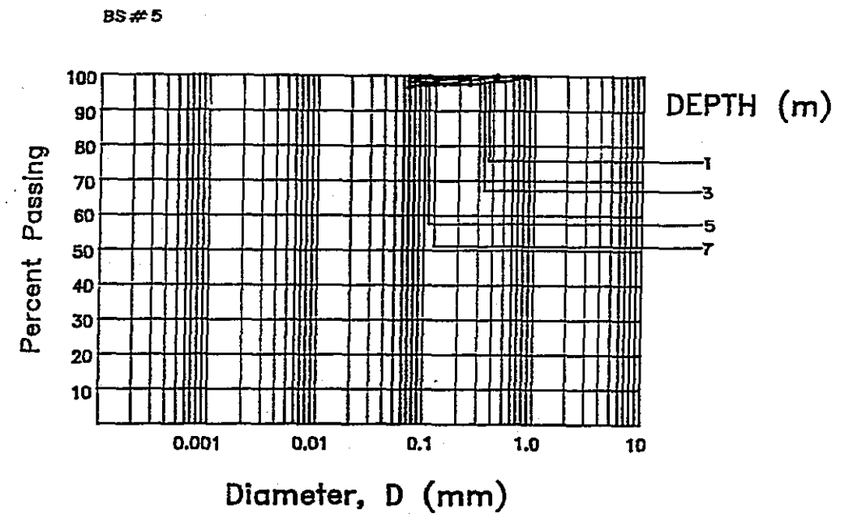
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-5, Km 1247+500 BORING LOG

SHEET NO. S-15

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS # 5

SAMPLE NO.	DEPTH (M.)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-1	0.55	1.0	Silty Clay	9	30	52	29	23						100	99	98	98	97	2.60	CH
3	2.55	3.0	Silty Clay	7	32	53	28	25						100	100	99	98	97	2.63	CH
5	4.55	5.0	Silty Clay	37	22	53	29	24						100	100	99	99	98	2.64	CH
7	6.55	7.77	Silty Clay	50	23	49	25	24						100	100	99	99	99	2.66	CL



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINADANAO SECTION)	BS-5, Km.1247+500 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-16

BORING LOG

BS-6

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
GROUND SURFACE:	GROUND ELEVATION:						WATER TABLE : 2.5 m.							
1					Silty CLAY with little Sand	Grayish Brown	Very Stiff	Medium Plastic Fines with Little Sand	.70		26	11	12	14
2									1.70 1.00		26	11	14	12
3									2.70 2.00		29	14	12	12
4		4.50	4.50						3.70 3.00	CL	12	4	5	7
5		5.50	1.00			Brown	Stiff		4.70 4.00		18	9	9	9
6		6.50	1.00			Grayish Brown	Stiff		5.70 5.00		11	9	5	6
7									6.70 6.00		35	16	20	15
8		7.87	1.37		Clayey SILT	Gray	Hard	Low Plastic Fines	7.85 7.00	ML	50	27	50/3	
9									7.85					
10														
11														
12														
13														
14					SILTSTONE	Dark Gray		CORING						
15														
16														
17														
18														
19														
20		20.00	12.13											
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														
31														
32														
33														
34														
35														

STANDARD PENETRATION TEST OR CORE RECOVERY

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. — L.L. — P.L.

20 40 60 80 100120140

SPECIFIC GRAVITY

2 3

GRAVEL SAND SILT CLAY

20 40 60 80 %

SCALE (m)

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-6, Km 1247+500 BORING LOG

SHEET NO.

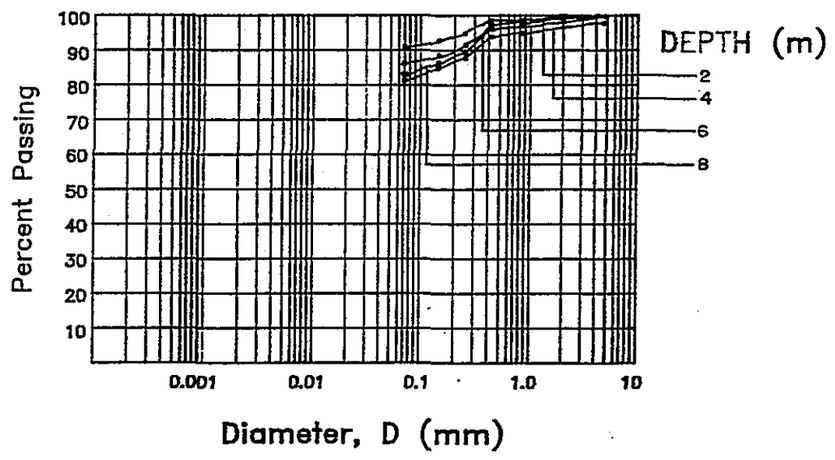
S - 17

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS # 6

SAMPLE NO.	DEPTH (M.)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-2	1.55	2.0	Silty Clay	26	22	46	29	17					100	99	99	95	93	91	2.62	CL
4	3.55	4.0	Silty Clay	12	37	45	29	16			100	98	97	95	94	88	85	81	2.65	CL
6	5.55	6.0	Silty Clay	11	28	39	24	15				100	98	97	96	91	89	86	2.65	CL
8	7.55	7.85	Silt	50	27	34	24	10				100	99	98	97	89	86	82	2.67	ML

BS # 6



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINADANAO SECTION)	BS-6, Km 1247+500 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-18

BORING LOG

BS-7

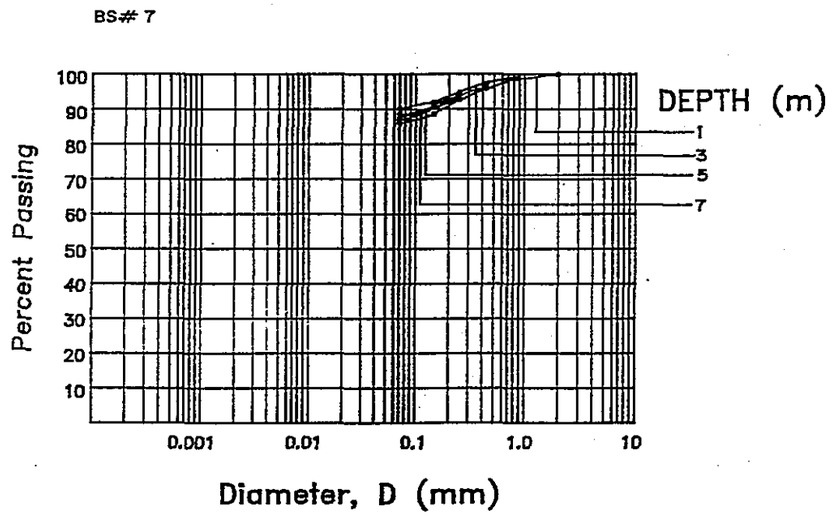
SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100	NAT.M.C. / L.L. / P.L. 20 40 60 80 100 120 140	SPECIFIC GRAVITY 2 3	GRAVEL / SAND / SILT / CLAY 20 40 60 80 %	SCALE (m)
GROUND SURFACE:	GROUND ELEVATION:						WATER TABLE : 6.0m.										
1–8	▽	9.0	9.0		Silty Clay	BROWN TO GRAY	FIRM TO STIFF	W/ LITTLE SAND MEDIUM PLASTIC FINES	0.70 / 1.00 / 1.70 / 2.00 / 2.70 / 3.00 / 3.70 / 4.00 / 4.70 / 5.00 / 5.70 / 6.00 / 6.70 / 7.00 / 7.70 / 8.00 / 8.70	CL	4 / 2 / 8 / 8 / 9 / 9 / 18 / 22 / 15	3 2 2 / 2 1 1 / 3 4 4 / 3 4 4 / 6 5 4 / 5 4 5 / 7 9 9 / 9 11 11 / 7 8 7				1–8
9–10		11.0	2.0		Silty Clay	BROWN	VERY STIFF TO HARD	W/ FINE SAND MEDIUM PLASTIC FINES	8.00 / 8.70 / 9.00 / 9.70 / 10.00 / 10.70	ML	19 / 19	8 8 11 / 10 10 9					9–11
11–13		13.0	2.0		Sandy Silt	GRAY			11.00 / 11.70 / 12.00 / 12.70		28 / 28	11 12 16 / 11 12 16					11–13
13–20		20.0	7.0		Silt Stone	DARK GRAY		CORING	13.00 / 13.70 / 14.00 / 14.70 / 15.00 / 15.70 / 16.00 / 16.70 / 17.00 / 17.70 / 18.00 / 18.70 / 19.00 / 19.70 / 20.00								13–20
20–35																	20–35

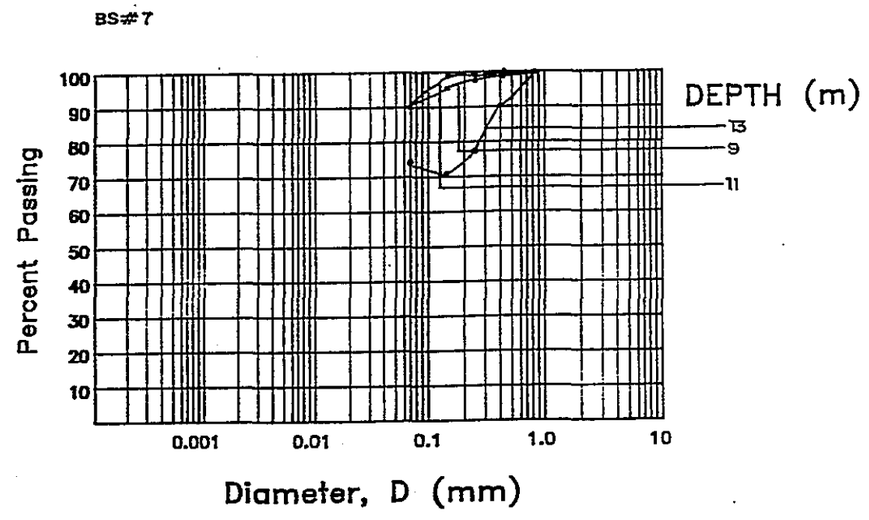
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: *FEASIBILITY STUDY ON* PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-7, Km. 1247+500 BORING LOG SHEET NO. S-19

SUMMARY OF LABORATORY TEST RESULTS

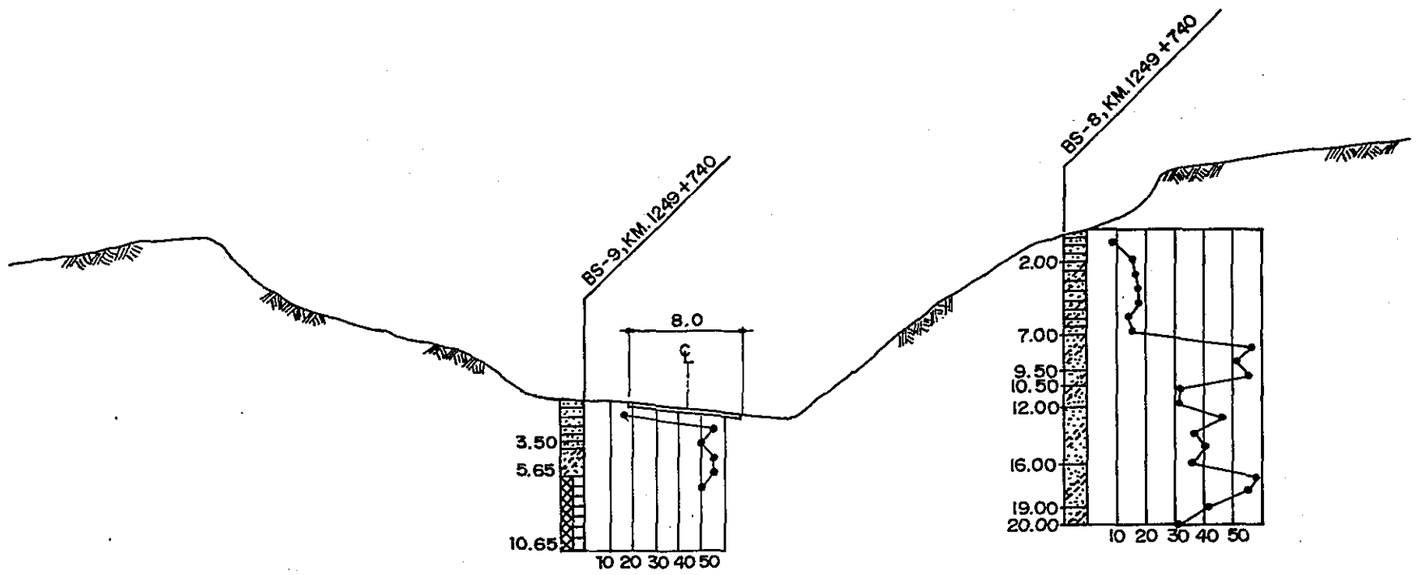
BORING NO. BS #7

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
1	.55	1.00	Silty Clay	4	25	39	25	14					100	99	96	93	89	86	2.59	CL
3	2.55	3.00	Silty Clay	8	29	41	26	15					100	99	97	95	92	90	2.61	CL
5	4.55	5.00	Silty Clay	9	25	43	26	17					100	99	97	95	91	89	2.58	CL
7	6.55	7.00	Silty Clay	18	30	38	26	12					100	99	96	94	91	88	2.62	CL
9	8.55	9.00	Silty Clay	15	32	40	25	15						100	99	98	96	90	2.67	CL
11	10.55	11.00	Silty Clay	19	27	42	24	18							100	99	99	90	2.65	CL
13	12.55	13.00	Sandy Silt	71	24	29	21	8						100	90	77	71	74	2.69	ML

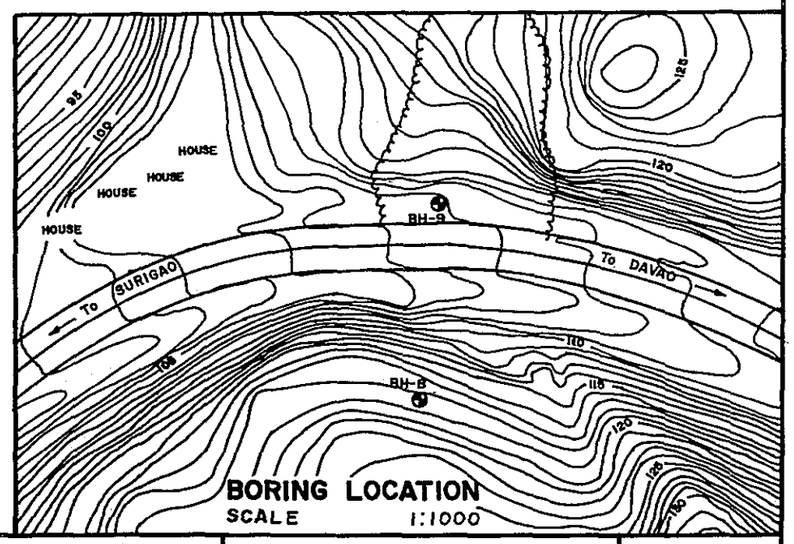




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS - 7, Km 1247+500 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-20



CROSS SECTION
SCALE 1:400



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINADANAO SECTION)	BS-8,9 , Km. 1249 + 740 BORING LOCATION	SHEET NO. S - 21

BORING LOG

BS-8

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		2.0	2.0		Sandy Clay			Low Plasticity
		7.0	5.0		Sandy Silty Clay	BROWN	Very Stiff	Medium Plastic Fines
		9.5	2.5		Silty Fine Sand	BROWN	Very Dense	Low Plastic Fines
		10.50	1.00			GRAYISH BROWN		
		12.00	1.5			BROWN		
	▽	16.00	4.0		Silty Sand	GRAYISH BROWN	Medium Dense	Low Plastic Fines
		19.00	3.0			BROWNISH GRAY	Very Dense	
		20.00	1.0		Sandy Silt	GRAY	Very Stiff	Low Plasticity

GROUND SURFACE: GROUND ELEVATION: WATER TABLE : 15.8 m.

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
0.70		8	2 4 4
1.00	ML	15	6 6 9
1.70		16	7 8 8
2.00		17	8 8 9
2.70		17	9 8 9
3.00	CL	14	5 6 8
3.70		15	5 6 9
4.00		56	9 28 28
4.70		52	20 21 31
5.00		55	19 24 31
5.70		32	10 10 12
6.00		33	10 11 12
6.70		46	17 20 26
7.00		36	16 16 20
7.70		40	17 18 22
8.00		36	16 18 18
8.70		61	17 30 31
9.00	SM	55	18 23 32
9.70		42	16 18 24
10.00			
10.70			
11.00			
11.70			
12.00			
12.70			
13.00			
13.70			
14.00			
14.70			
15.00			
15.70			
16.00			
16.70			
17.00			
17.70			
18.00			
18.70			
19.00			
19.70	ML	31	14 15 16
20.00			

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. —●—

L.L. —○—

P.L. —▲—

20 40 60 80 100 120 140

SPECIFIC GRAVITY —●— 2 3

GRAVEL ○ ○ ○

SAND

SILT

CLAY

20 40 60 80 %

SCALE (m) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

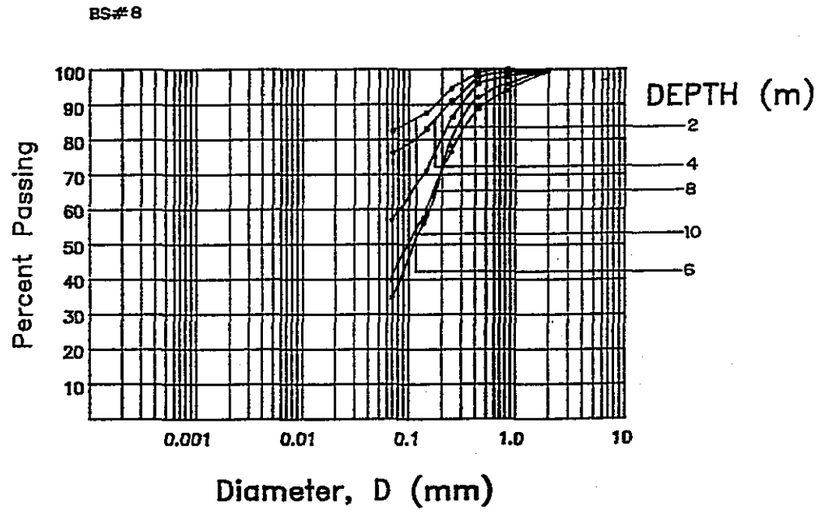
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-8, Km. 1249+740 BORING LOG

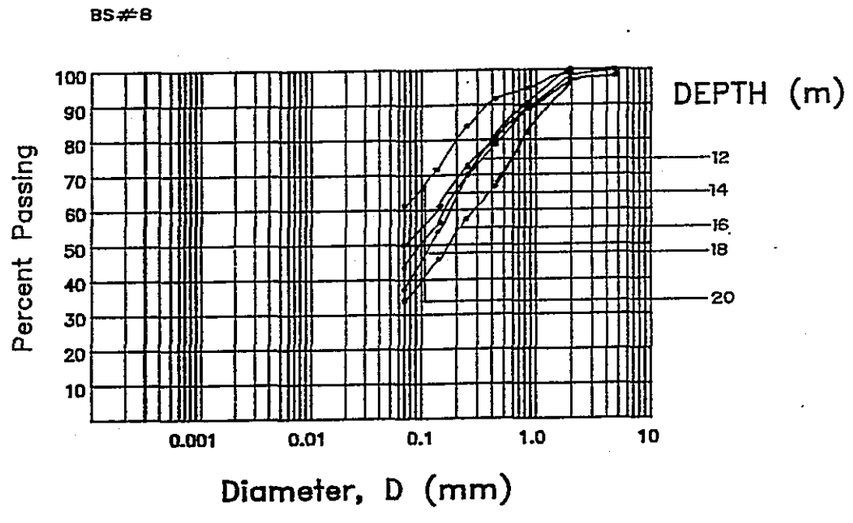
SHEET NO. S-22

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS#8

SAMPLE NO.	DEPTH (m)	TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
					LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
2	1.55–2.00	Sandy Silt	15	26	35 40	24	11					100	98	96	86	71	57	2.64	ML
4	3.55–4.00	Sandy Clay	17	22		25	15					100	99	97	91	83	76	2.64	CL
6	5.55–6.00	Sandy Clay	14	42	42	26	16					100	100	99	95	88	82	2.66	CL
8	7.55–8.00	Silty Sand	56	24	33	25	8					100	94	89	76	58	40	2.62	SM
10	9.55–10.00	Silty Sand	55	24	29	22	7					100	96	92	77	56	35	2.60	SM
12	11.55–12.00	Silty Sand	22	26	21	17	4				100	99	89	79	70	56	43	2.60	SM
14	13.55–14.00	Sandy Silt	36	30	34	25	9			100	99	98	89	80	72	61	50	2.70	ML
16	15.55–1.00	Silty Sand	36	26	25	20	5			100	99	98	82	67	58	46	34	2.71	SM
18	17.55–18.00	Silty Sand	55	25	22	17	5					100	90	81	70	53	37	2.69	SM
20	19.55–20.00	Sandy Silt	31	24	30	20	10				100	99	95	92	84	72	61	2.65	ML





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS - 8 , Km 1249+740 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-23

BORING LOG

BS-9

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		3.50	3.50		Sandy Clay	Gray-yish Brown	Hard	Medium Plastic Fines
							Very Dense	Low Plastic Fines
		5.65	2.15		Silty Sand	Gray		
		10.65	5.00		Siltstone	Gray		Coring

GROUND SURFACE: GROUND ELEVATION: WATER TABLE : 5.4m.

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
0.7	CL	17	7 / 7 / 10
1.4		61	13 / 30 / 31
2.0		50	30 / 50 / 10
2.7			
3.0	SM	76	20 / 31 / 46
3.7		71	29 / 30 / 41
4.0		50	50 / 10
4.7			
5.0			
5.35			

STANDARD PENETRATION TEST OR CORE RECOVERY

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

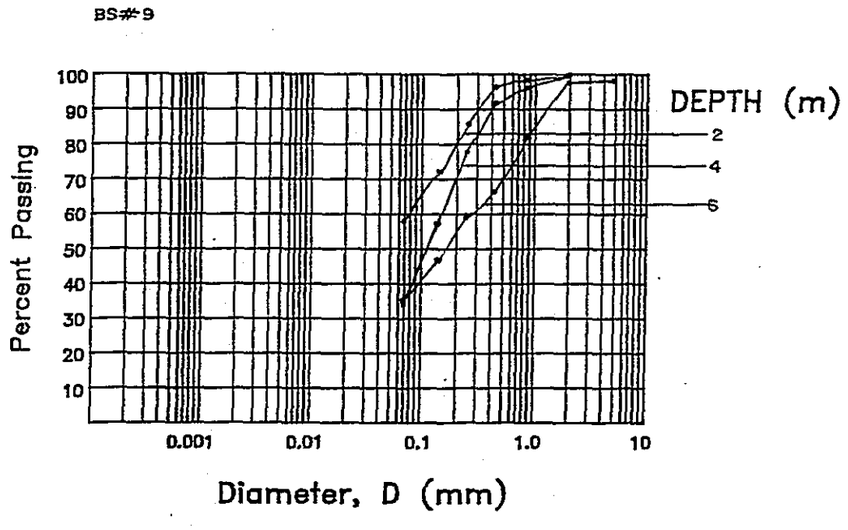
SCALE (m) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-9, Km. 1249 + 740 BORING LOG	SHEET NO. S-24

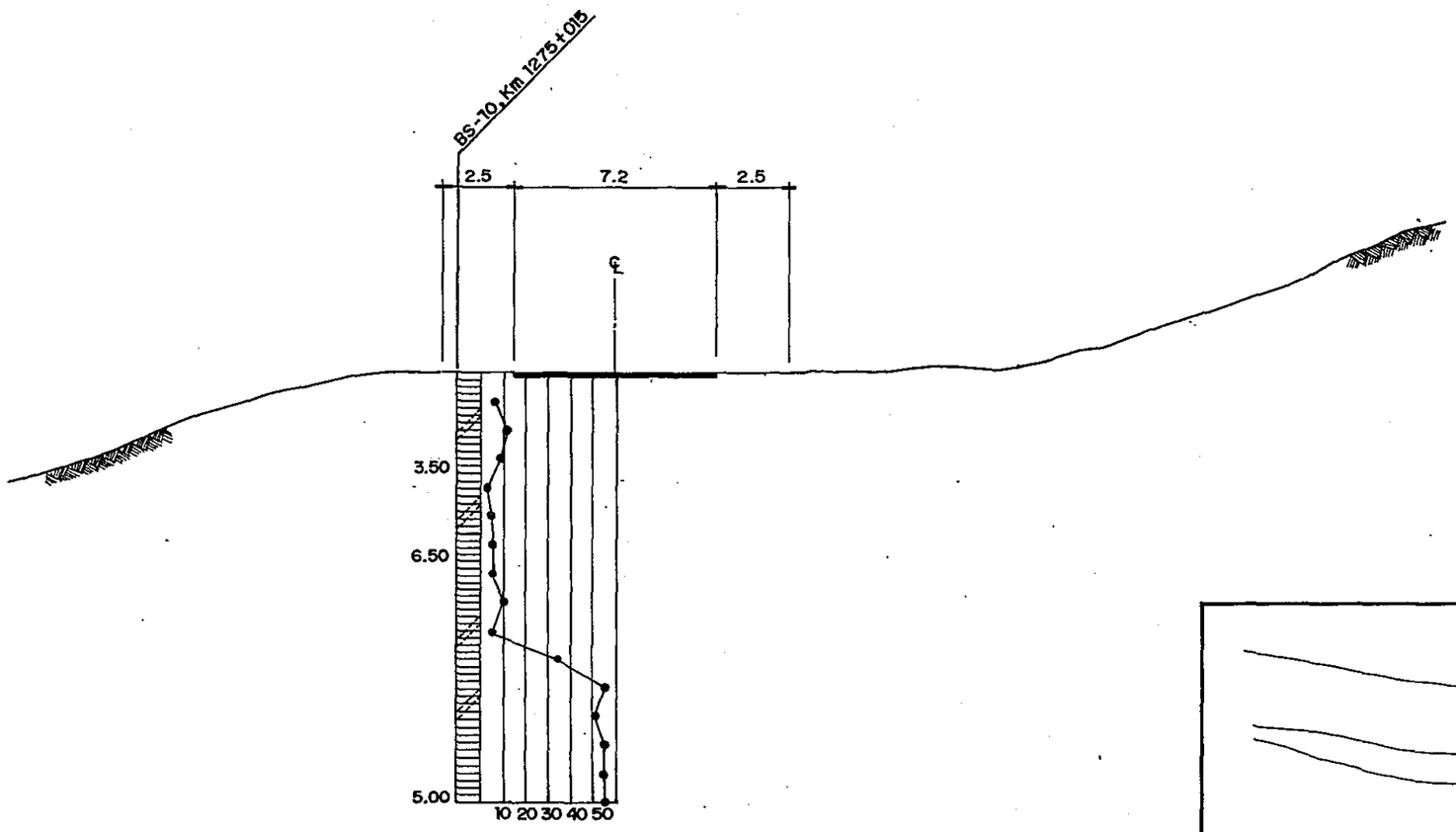
SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS # 9

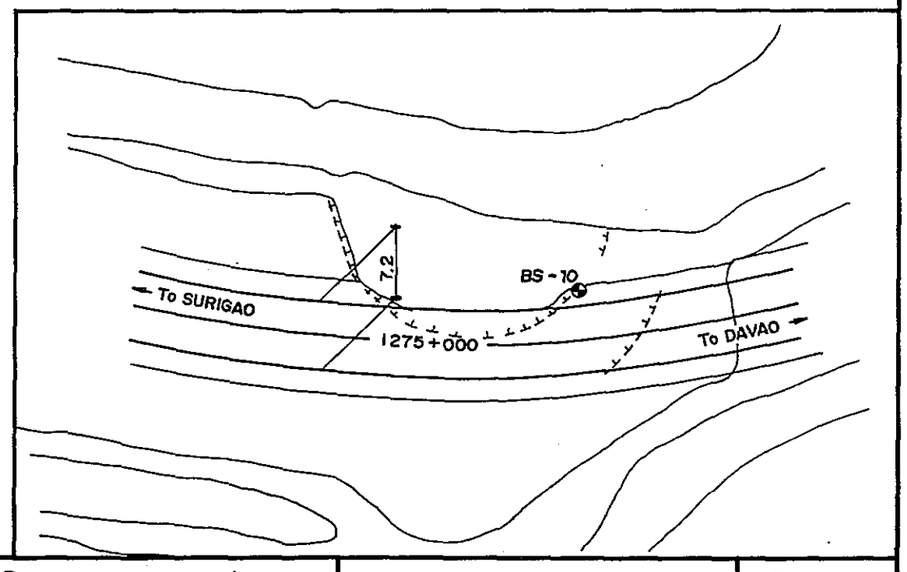
SAMPLE NO.	DEPTH (M)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.0	Sandy Clay	61	26	37	25	12					100	98	96	85	72	58	2.58	CL
4	3.55	4.0	Silty Sand	77	25	25	21	4					100	96	92	78	57	34	2.61	SM
6	5.55	6.0	Silty Sand	50	27	27	20	7			100	99	98	82	66	59	47	35	2.59	SM



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-9, Km 1249+740 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-25



CROSS SECTION
SCALE: 1:200 m.



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-10, Km 1275+015 BORING LOCATION	SHEET NO. S - 26

BORING LOG

BS-10

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		3.50	3.50		Silty Clay	Brown	Firm	High Plastic Clay
		6.50	3.00			Red-dish Brown		
		15.0	8.50			GRAY	Hard	

GROUND SURFACE: GROUND ELEVATION: WATER TABLE :

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
0.7		8	5	4	4
2.0		6	2	3	3
3.0		4	3	2	2
4.0		3	1	1	2
4.7		4	2	2	2
5.0		3	2	1	2
6.0		8	3	6	2
6.8	CH	32	8	14	18
7.6		37	11	16	21
8.0		34	13	16	18
9.0		39	16	19	20
9.5		31	7	15	16
10.0		41	12	20	21
11.0		37	13	18	19
11.6		47	13	21	26
15.0					

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. L.L. P.L. 20 40 60 80 100120140

SPECIFIC GRAVITY 2 3

GRAVEL SAND SILT CLAY 20 40 60 80 %

SCALE (m) 1–35

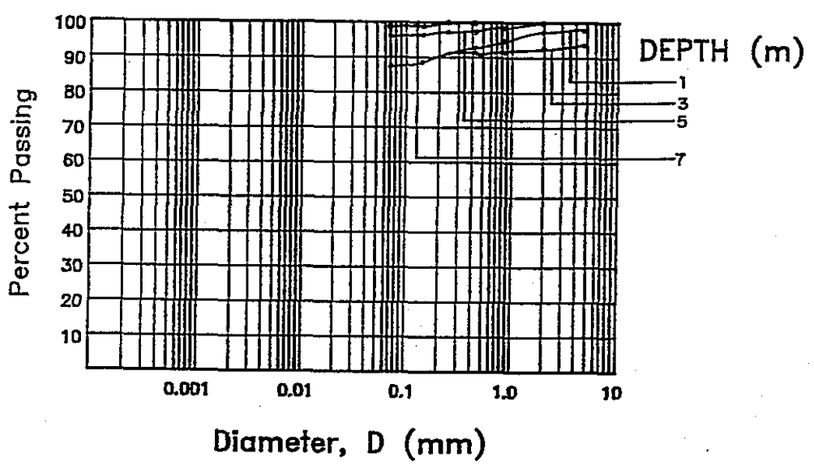
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-10, Km 1275+015 BORING LOG

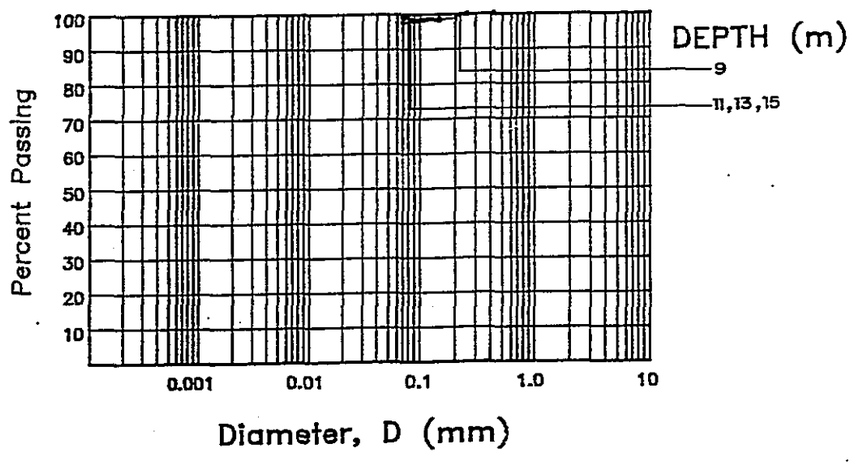
SHEET NO. S-27

SUMMARY OF LABORATORY TEST RESULTS

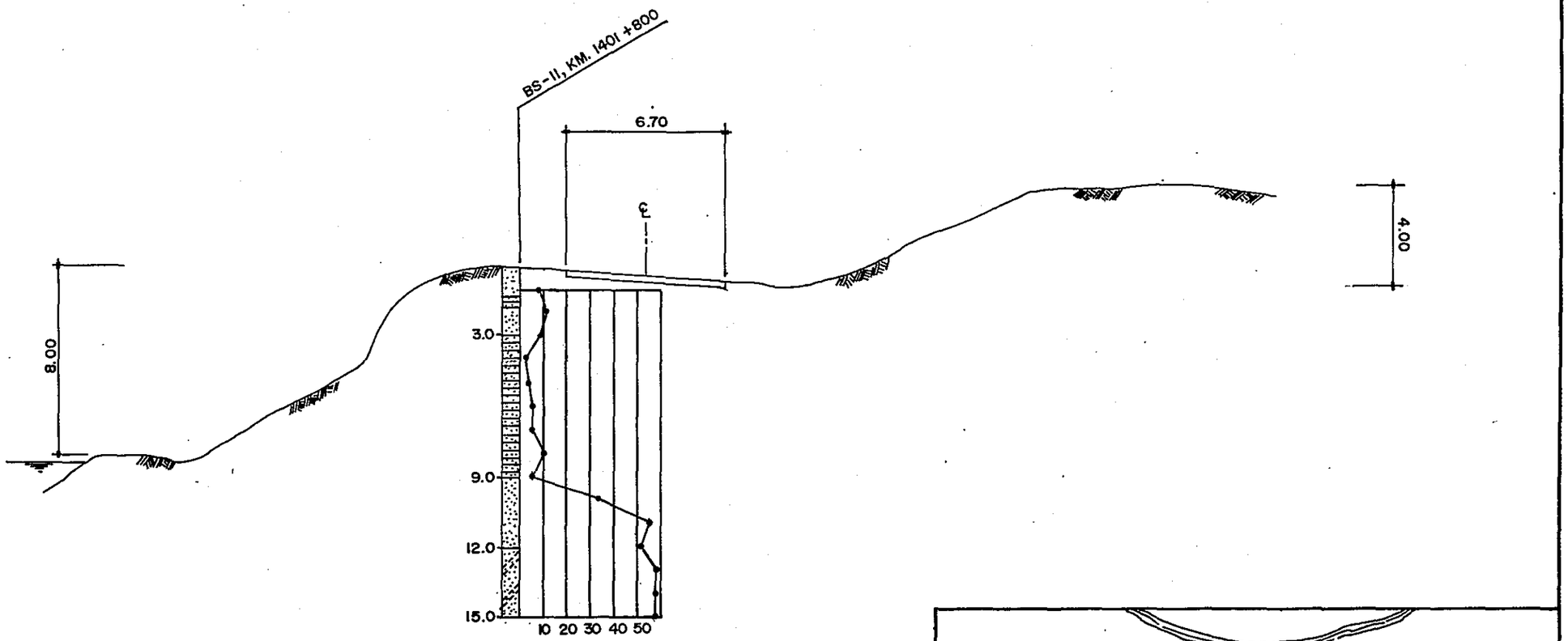
BORING NO. BS # 10

SAMPLE NO.	DEPTH (M.)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
1	0.55	1.0	Silty Clay	8	61	75	40	35		100	98	98	97	95	93	91	89	88	2.67	CH
3	2.55	3.0	Silty Clay	4	82	76	39	37		100	94	94	93	92	92	91	89	88	2.65	CH
5	4.55	5.0	Silty Clay	4	79	79	41	38					100	99	98	98	97	97	2.63	CH
7	6.55	7.0	Silty Clay	8	49	77	42	35							100	100	99	99	2.60	CH
9	8.55	9.0	Silty Clay	37	57	77	43	34							100	100	99	98	2.60	CH
11	10.55	11.0	Silty Clay	39	40	80	41	39							100	100	99	99	2.59	CH
13	12.55	13.0	Silty Clay	41	40	76	41	35							100	100	99	99	2.59	CH
15	14.55	15.0	Silty Clay	47	41	81	44	37							100	100	99	99	2.59	CH

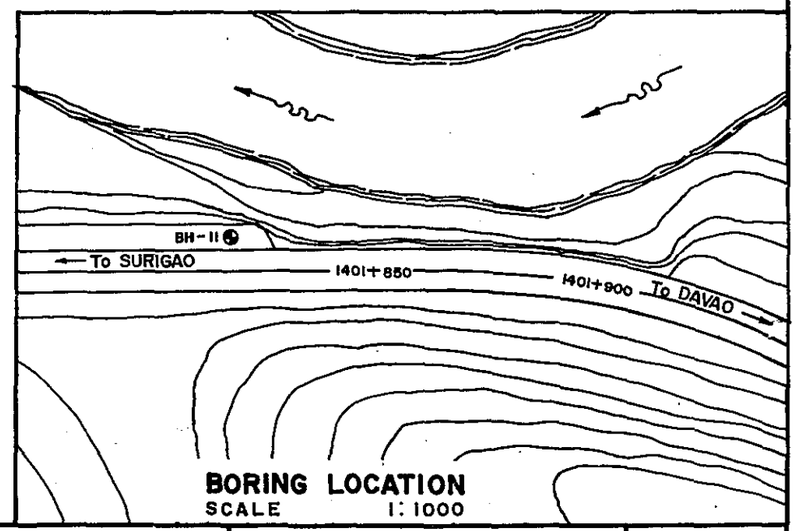




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-10, Km 1275+015 SUMMARY OF LABORATORY TEST RESULTS
			SHEET NO. S-28



CROSS SECTION
SCALE 1 : 200



BORING LOCATION
SCALE 1 : 1000

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS - 11, Km. 1401+800 BORING LOCATION	SHEET NO. S - 29

BORING LOG

BS-11

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
GROUND SURFACE:	GROUND ELEVATION:						WATER TABLE : 6.4m.							
1-3		3.00	3.00		Clayey SAND	Brown	Loose to Medium Dense	Low Plastic Fines with some Gravel	0.7 / 1.0 / 1.7 / 2.0 / 2.7	SC	7	4	3	4
											11	4	5	6
											9	5	5	4
4-8	▽	9.00	6.00		Sandy CLAY	Light Brown	Firm	Medium Plastic Fines	3.0 / 3.7 / 4.0 / 4.7 / 5.0 / 5.7 / 6.0 / 6.7 / 7.0 / 7.7 / 8.0 / 8.7	CL / SC	3	1	1	2
											4	2	2	2
											5	3	2	3
											5	2	2	3
											10	6	5	5
											5	2	1	4
9-11		12.00	3.00		Fine SAND	Gray	Very Dense	Non Plastic Fines	9.0 / 9.7 / 10.0 / 10.7 / 11.0 / 11.7	SP	34	15	17	17
											55	14	30	25
											51	15	26	25
12-15		15.00	3.00		Silty SAND	Brown	Very Dense	Low Plastic Fines with Little Gravel	12.0 / 12.7 / 13.0 / 13.7 / 14.0 / 14.7 / 15.0	SM	58	11	21	37
											61	17	22	39
											87	25	37	50

STANDARD PENETRATION TEST OR CORE RECOVERY: • (N-VALUE) 10 20 30 40 50; □ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

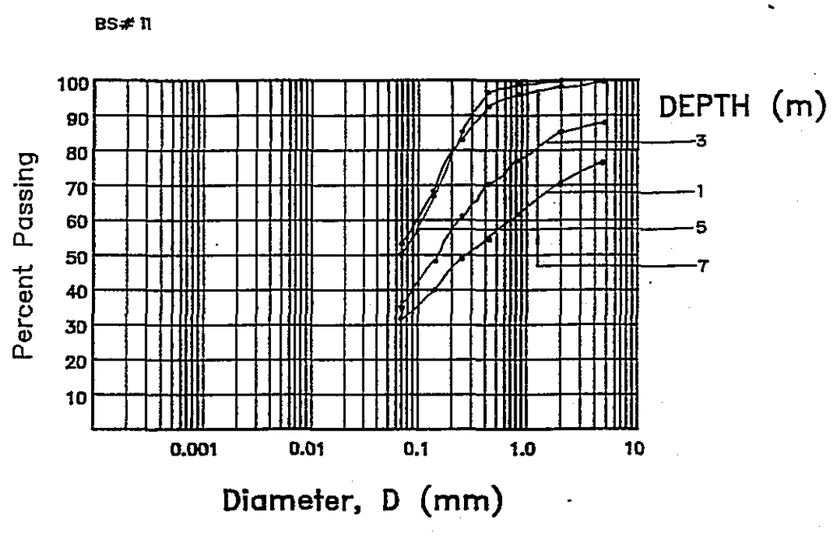
SCALE (m) 1-35

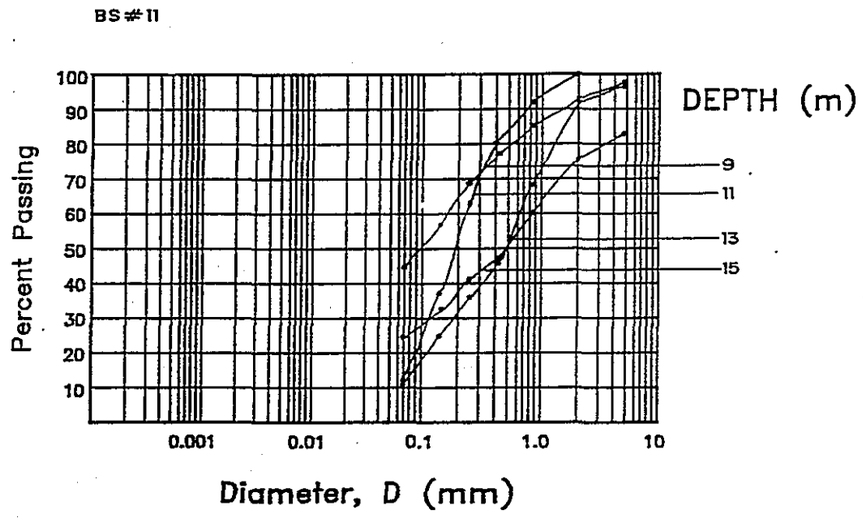
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-11, Km 1401+800 BORING LOG	SHEET NO. S-30

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BS # 11

SAMPLE NO.	DEPTH (M.)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	0.55	1.0	Clayey Sand	7	19	33	21	12		100	82	76	70	62	55	49	40	32	2.62	SC
3	2.55	3.0	Clayey Sand	9	22	34	22	12		100	92	88	85	77	70	61	48	35	2.63	SC
5	4.55	5.0	Sandy Clay	4	33	41	25	16					100	99	97	85	67	50	2.60	CL
7	6.55	7.0	Sandy Clay	5	38	45	27	18				100	99	96	93	83	68	53	2.60	CL
9	8.55	9.0	Clayey Sand	5	34	41	24	17			100	98	93	85	77	69	57	45	2.64	SC
11	10.55	11.0	Sand	55	24								100	92	80	63	37	12	2.63	SP
13	12.55	13.0	Sand	58	18						100	97	92	68	45	36	25	11	2.63	SP
15	14.55	15.0	Silty Sand	87	21	22	18	7		100	89	83	75	60	46	41	33	25	2.68	SM

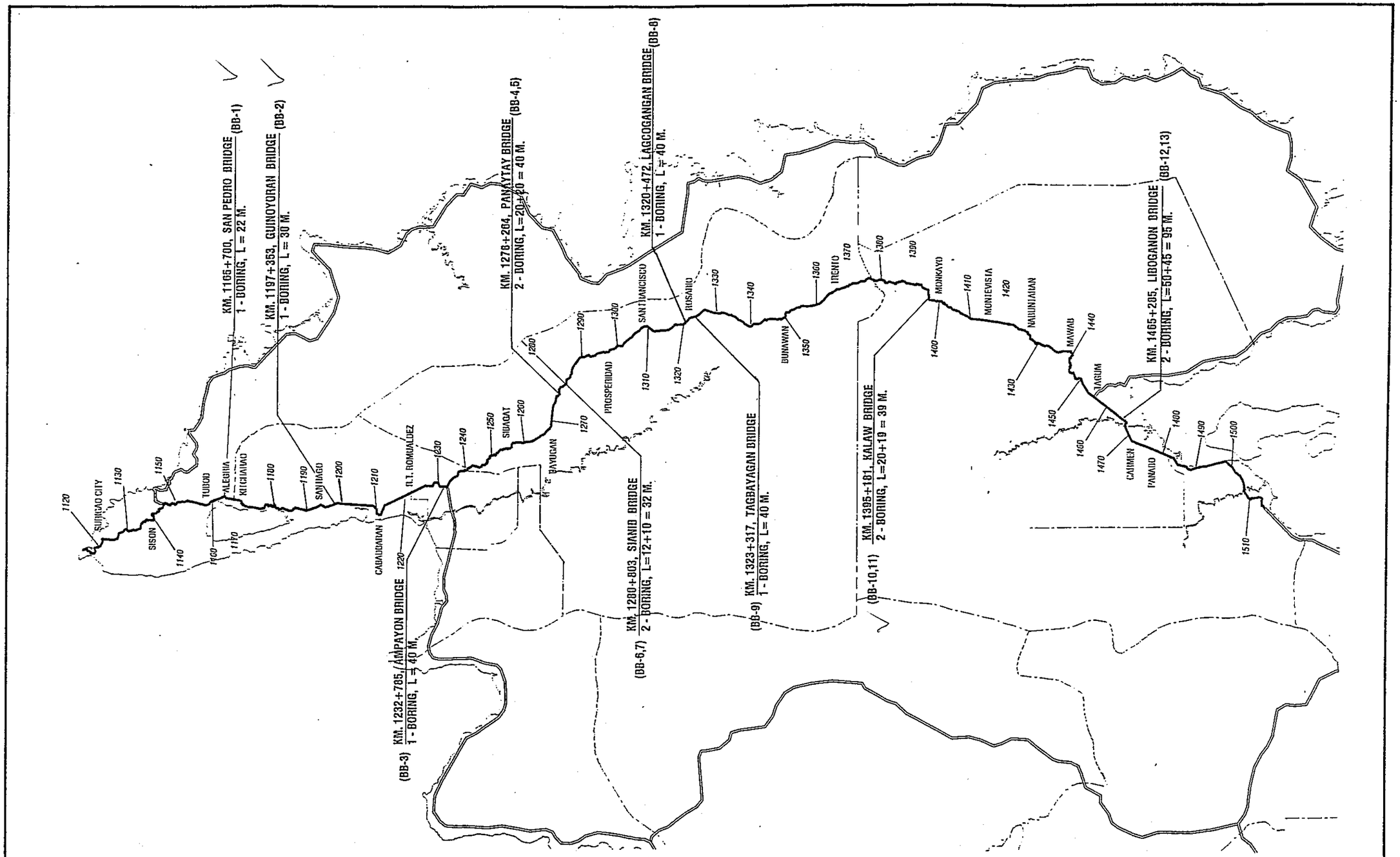




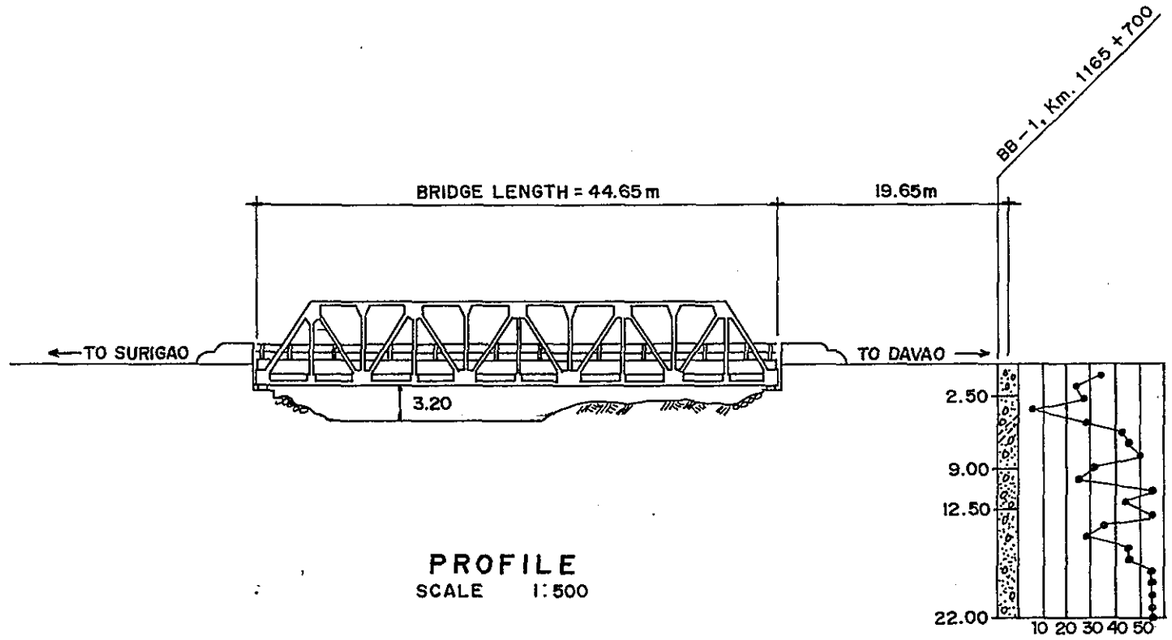
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BS-11, Km 1401+800 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. S-31

2. GEO-TECHNICAL INVESTIGATION

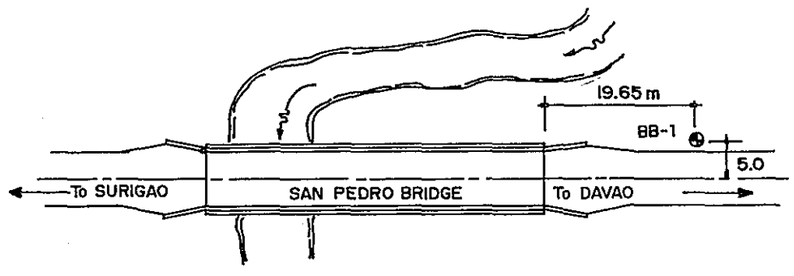
— BRIDGE SITE —



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	GEOTECHNICAL SURVEY LOCATION FOR BRIDGES SHEET NO. B - 1



PROFILE
SCALE 1:500



BORING LOCATION
DRAWN NOT TO SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-1, Km.1165+700 BORING LOCATION	SHEET NO. B-2

BORING LOG

BB - 1

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:				GROUND ELEVATION:			WATER TABLE : 4.85m	
1–2		2.5	2.5		Sandy Gravel	Dark Brown	DENSE	Non Plastic Sandy Gravel
3–8	▽	9.0	6.5		Silty Gravelly Sand	Dark Brown	MEDIUM DENSE	Low Plasticity Silty Gravelly Sand
9–12		12.5	3.5		Sandy Gravel	Dark Brown	MEDIUM DENSE	Non Plastic Sandy Gravel
13–22		22.0	9.5		Gravelly Sand	Dark Brown	VERY DENSE	Non Plastic Gravelly Sand

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
.70		34	16	16	18
1.00–1.70	GP	24	8	10	14
2.00–2.70		28	8	14	14
3.00–3.70	SM	7	3	3	4
4.00–4.70		29	10	11	18
5.00–5.70	SP	42	12	19	23
6.00–6.70		45	27	25	20
7.00–7.70	SP	50	22	21	29
8.00–8.70		31	12	15	16
9.00–9.70	GP	25	12	12	13
10.00–10.70		90	12	30	60
11.00–11.70	GP	44	11	16	28
12.00–12.70		72	20	42	30
13.00–13.70	SM	36	6	18	18
14.00–14.70		29	9	11	18
15.00–15.70	SP	45	12	21	24
16.00–16.70		45	16	18	27
17.00–17.70	SP	61	21	30	31
18.00–18.70		66	20	32	34
19.00–19.70	SP	73	24	36	37
20.00–20.70		68	28	30	38
21.00–21.70	SP	75	30	34	41
22.00					

• (N-VALUE) 10 20 30 40 50
□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. L.L. P.L. — NP

SPECIFIC GRAVITY 2 3

GRAVEL SAND SILT CLAY 20 40 60 80 %

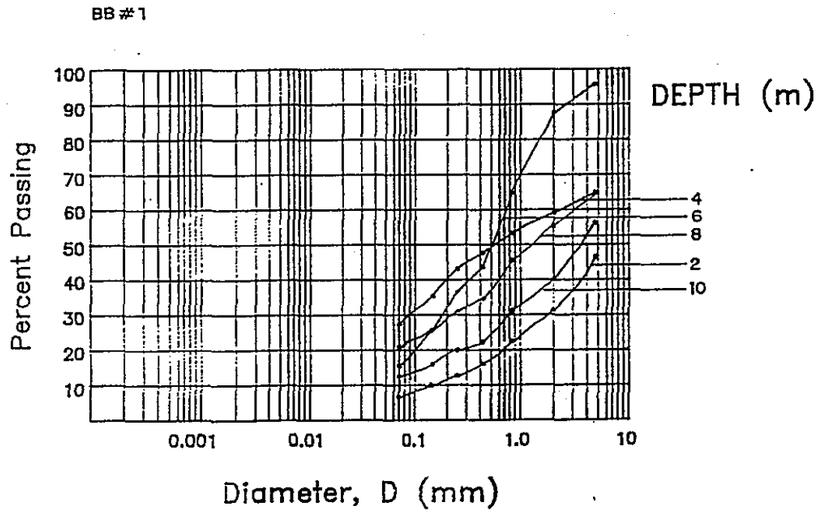
SCALE (m) 1–35

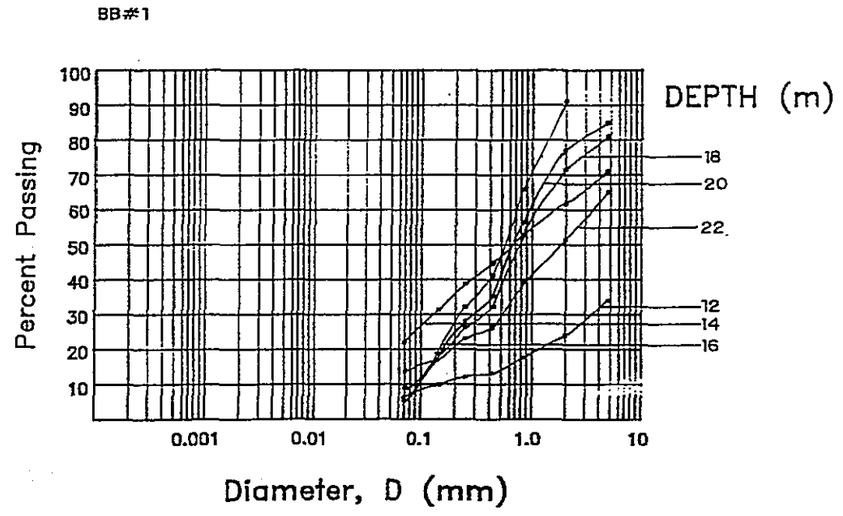
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-1, Km. 1165+700 BORING LOG	SHEET NO. B - 3

SUMMARY OF LABORATORY TEST RESULTS

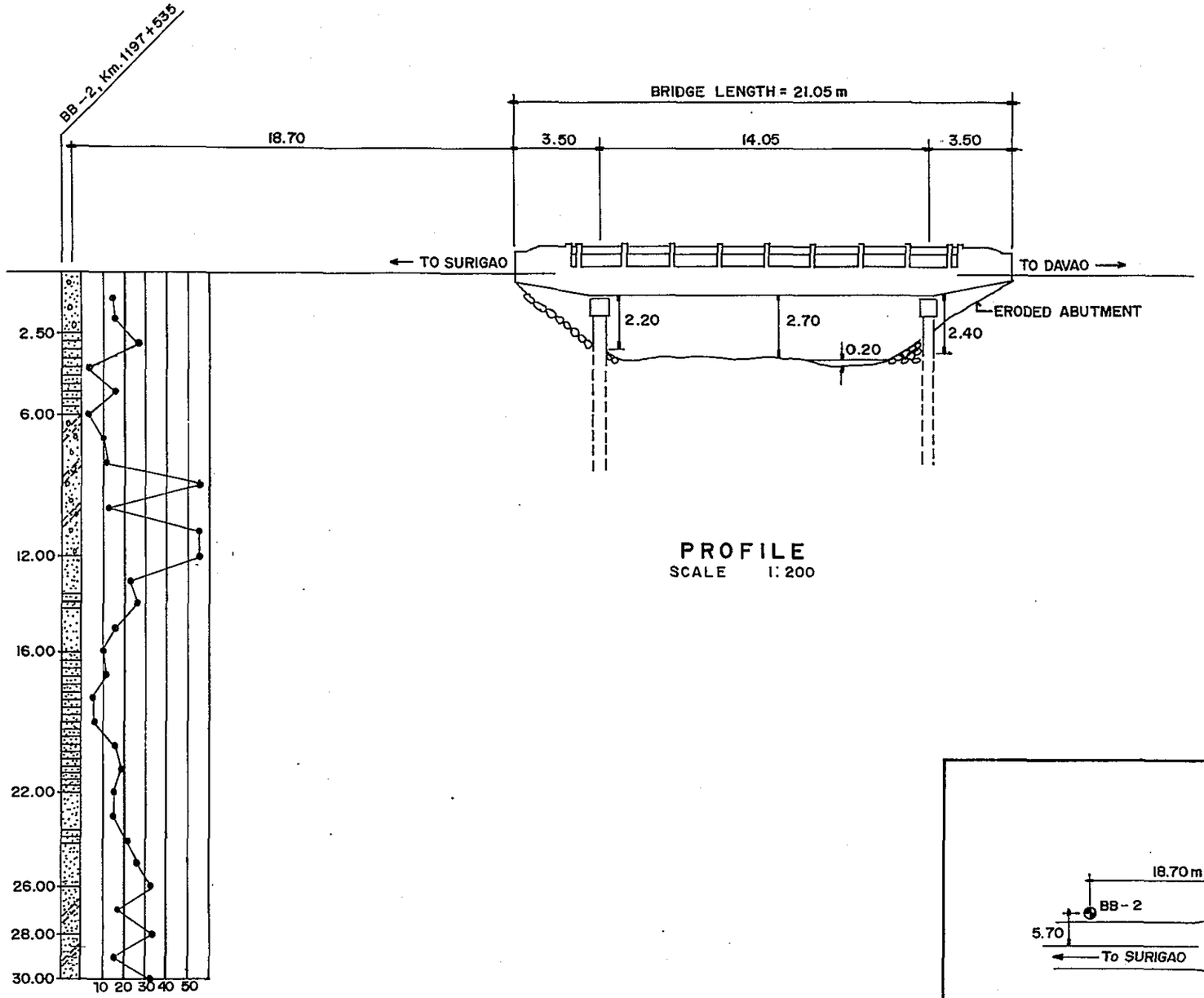
BORING NO. BB #1

SAMPLE NO.	DEPTH (m)	TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
					LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-2	2.0	Sandy Gravel	24	14.5	NL	NP	NP	100	82	62	47	31	23	16	13	10	7	2.65	GP
4	4.0	Silty Sand	7	24.5	24	18	6		100	86	65	59	53	48	43	36	28	2.70	SM
6	6.0	Silty Sand	42	23.5	NL	NP	NP		100	98	96	88	65	44	37	26	16	2.69	SP
8	8.0	Gravelly Sand	50	18	19	16	3	100	84	78	65	55	46	35	31	26	21	2.69	SP
10	10.0	Sandy Gravel	25	14	NL	NP	NP	100	92	73	56	40	31	23	20	16	13	2.67	GP
12	12.0	Sandy Gravel	44	11	NL	NP	NP	74	64	49	34	24	18	13	12	10	7	2.64	GP
14	14.0	Silty Gravelly Sand	36	19	19	15	4		100	92	71	62	53	45	39	31	22	2.71	SM
16	16.0	Sand	45	23	NL	NP	NP		100	98	9	91	66	41	32	19	6	2.66	SP
18	18.0	Sand	61	17	NL	NP	NP	100	88	88	81	72	53	32	27	18	9	2.64	SP
20	20.0	Sand	73	21	NL	NP	NP		100	91	85	77	56	35	28	18	7	2.62	SP
22	22.0	Gravelly Sand	75	15	NL	NP	NP	100	83	81	66	51	39	27	23	18	13	2.64	SP

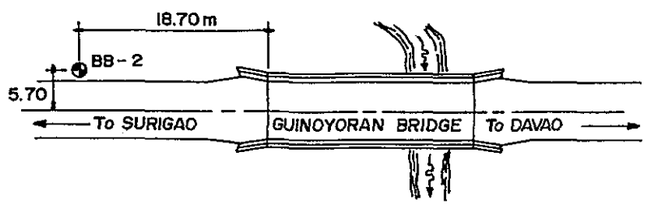




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-1, Km.1165+700 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-4



PROFILE
SCALE 1: 200



BORING LOCATION
DRAWN NOT TO SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-2, Km.1197+535 BORING LOCATION	SHEET NO. B-5

BORING LOG

BB-2

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	STANDARD PENETRATION TEST OR CORE RECOVERY: • (N-VALUE) 10 20 30 40 50; □ SAMPLE RECOVERED 20 40 60 80 100	NAT.M.C. / L.L. / P.L. 20 40 60 80 100 120 140	SPECIFIC GRAVITY 2 3	GRAVEL / SAND / SILT / CLAY 20 40 60 80 %	SCALE (m)
GROUND SURFACE:					GROUND ELEVATION:			WATER TABLE : 3.75m.									
1–2		2.5	2.5		Gravelly Sand	Gray	Dense	Non Plastic Sand	0.7–1.5	SP	14	7 7 7		-NP-			1–2
3–4	▽								2.5–3.0		15	8 8 7					3–4
5–6		6.0	3.5		Sandy Clay	Gray To Yellowish Brown	Soft To Very Stiff	Low Plasticity Clay	3.9–4.4	CL	28	11 18 10					5–6
7–8									4.9–5.4		3	6 1 2					7–8
9–10					Silty Gravelly Sand	Yellowish Brown	Very Dense	Low Plasticity Silty Sand	5.9–6.4	SC	16	7 9 7					9–10
11–12		12.0	6.0						6.9–7.4		3	10 2 1					11–12
13–14					Clayey Sand	Gray	Dense	Low Plasticity Clayey Sand	7.9–8.4	SM	10	2 5 5					13–14
15–16		16.0	4.0						8.9–9.4		11	3 7 4					15–16
17–18					Sandy Clay	Gray	Stiff to Very Stiff	Medium Plasticity Clayey Sand	9.9–10.4	SM	55	21 32 23					17–18
19–20									11.9–12.4		12	14 8 4					19–20
21–22		22.0	6.0						12.9–13.4	SM	71	25 30 41					21–22
23–24					Clayey Sand	Yellowish Brown	Dense	Low Plasticity Clayey Sand	13.9–14.4		67/15						23–24
25–26		26.0	4.0						14.9–15.4	SC	22	5 10 12					25–26
27–28		28.0	2.0		Silty Sand	Gray	Medium Dense	Low Plastic	15.9–16.4		26	6 13 13					27–28
29–30		30.0	2.0		Silty Sand	Yellowish Brown	Medium Dense	Low Plastic	16.9–17.4	SC	17	6 6 11					29–30
31–35									17.9–18.4		10	7 6 4					31–35
									18.9–19.4	CL	11	6 5 6					
									19.9–20.4		6	3 3 3					
									20.9–21.4	CL	8	5 4 4					
									21.9–22.4		17	5 7 10					
									22.9–23.4	CL	19	6 10 9					
									23.9–24.4		16	5 7 9					
									24.9–25.4	SC	15	5 6 9					
									25.9–26.4		21	6 11 10					
									26.9–27.4	SC	25	8 11 14					
									27.9–28.4		32	10 13 19					
									28.9–29.4	SM	18	6 7 11					
									29.9–30.0		33	9 16 17					
											16	6 6 10					
										SM	32	11 14 18					

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-2, Km. 1197+535 BORING LOG

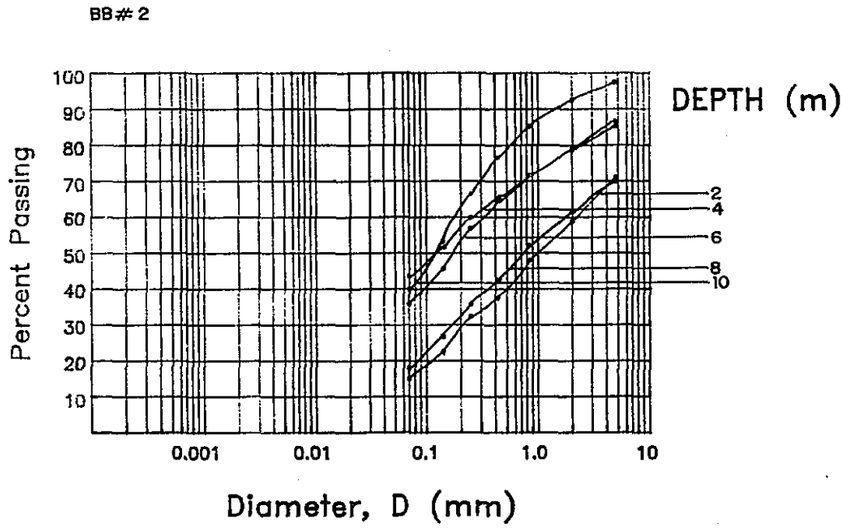
SHEET NO. B-6

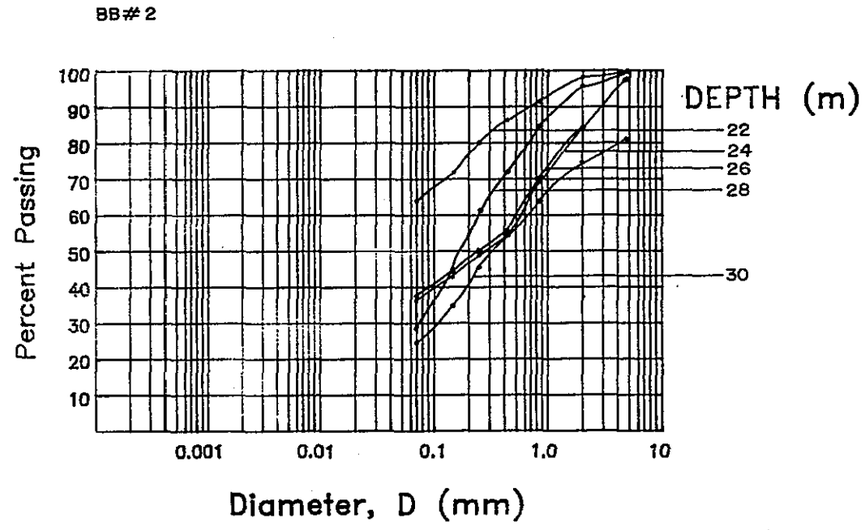
SUMMARY OF LABORATORY TEST RESULTS

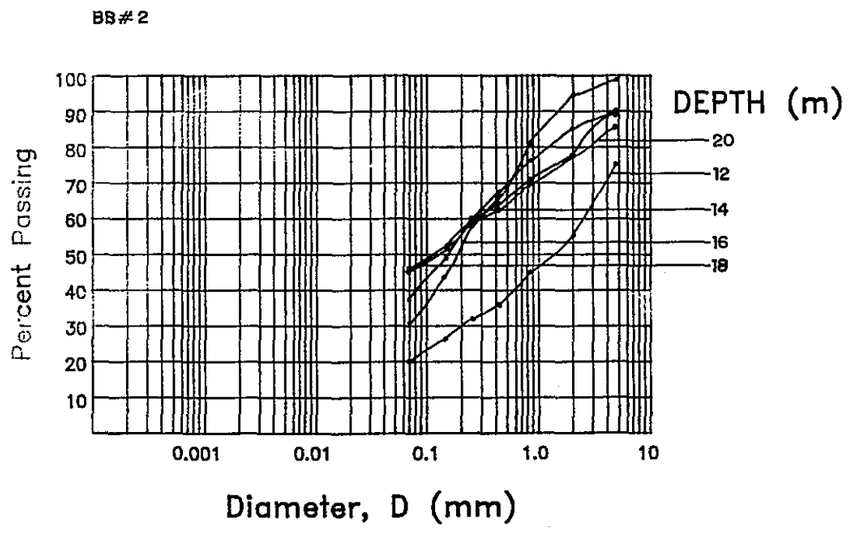
BORING NO. BB # 2

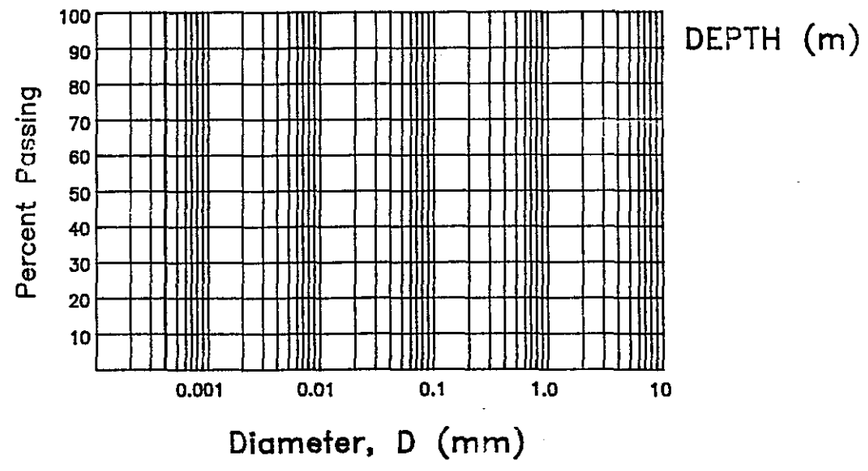
SAMPLE NO.	DEPTH (M)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.00	Gravelly Sand	15	12			NP	100	84	82	71	59	48	38	32	23	15	2.73	SP
4	3.55	4.00	Sandy Clay	3	31	34	21	13		100	89	85	79	72	66	60	52	44	2.65	CL
6	5.55	6.00	Clayey Sand	3	28	32	20	12	100	89	89	86	79	72	65	57	46	36	2.65	SC
8	7.55	8.00	Silty Sand	11	22	27	23	4	100	85	76	70	62	52	43	36	27	18	2.62	SM
10	9.55	10.00	Silty Sand	12	31	31	22	9			100	98	93	85	77	67	53	40	2.60	SM
12	11.55	11.70	Silty Sand	67	14	23	19	4		100	93	75	55	45	36	32	26	20	2.67	SM
14	13.55	14.00	Clayey Sand	26	26	35	20	15		100	93	89	85	76	68	60	49	38	2.60	SC
16	15.55	15.00	Clayey Sand	10	21	32	21	11			100	99	95	81	67	58	44	31	2.59	SC
18	17.55	18.00	Sandy Sand	6	41	45	24	21		100	92	90	78	71	64	59	53	47	2.59	CL
20	19.00	20.00	Sandy Clay	17	38	39	23	16		100	91	85	78	70	63	59	52	46	2.61	CL
22	21.55	22.00	Sandy Clay	16	36	49	28	21				100	98	92	86	80	72	64	2.61	CL
24	23.55	24.00	Clayey Sand	21	34	41	26	15			100	98	84	69	54	49	43	37	2.60	SC
26	25.55	26.00	Clayey Sand	32	20	35	22	13			100	98	84	70	55	50	44	38	2.63	SC
28	27.55	28.00	Silty Sand	33	31	26	20	6				100	96	84	72	61	45	29	2.63	SM
30	29.55	30.00	Silty Sand	32	17	22	17	4	100	91	87	81	74	64	54	46	35	25	2.65	SM

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-2, Km.1197+535 SUMMARY OF LABORATORY TEST RESULTS SHEET NO. B-7

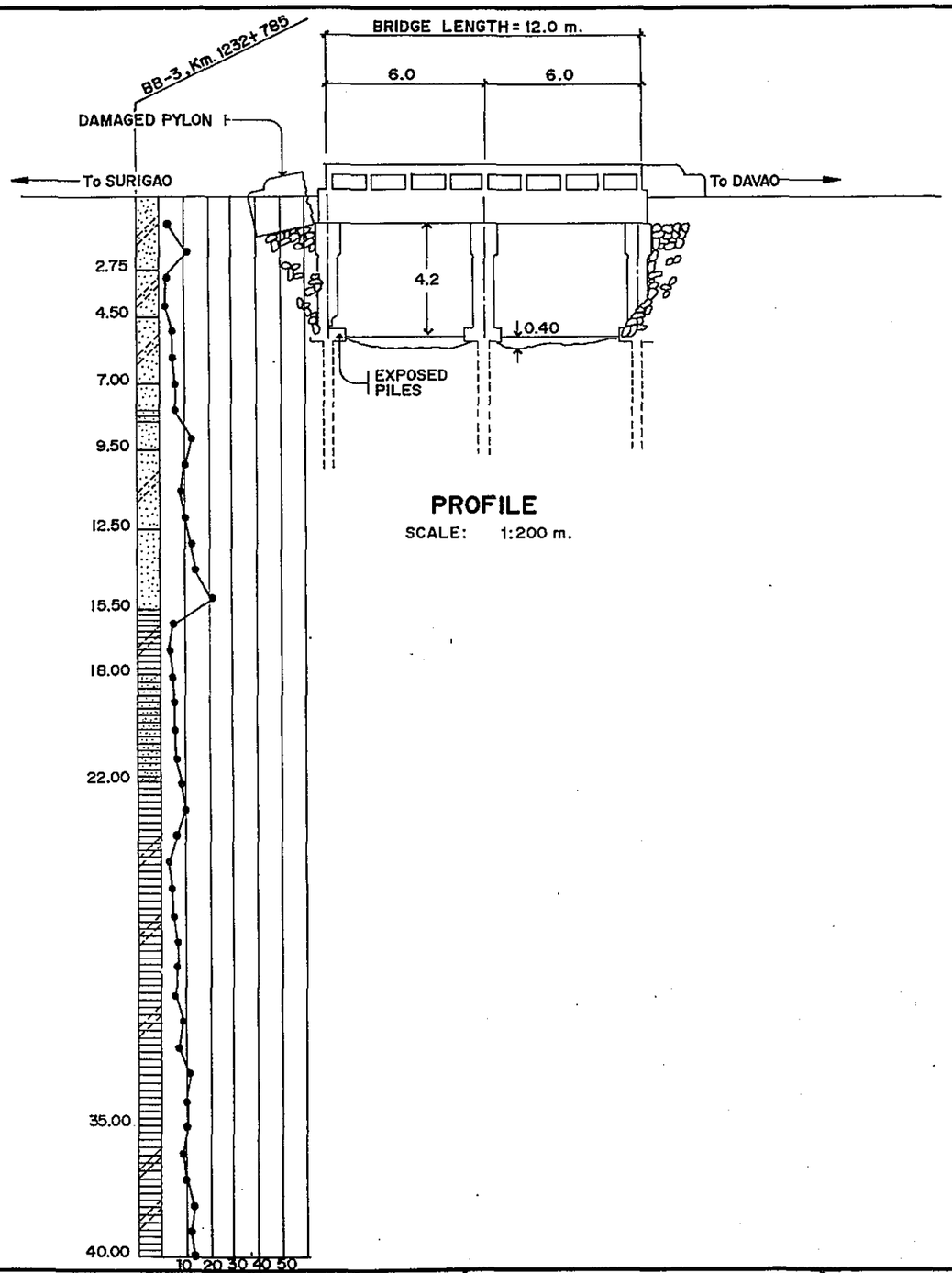








JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-2, Km. 1197+535 SIEVE ANALYSIS GRAPH	SHEET NO. B-8

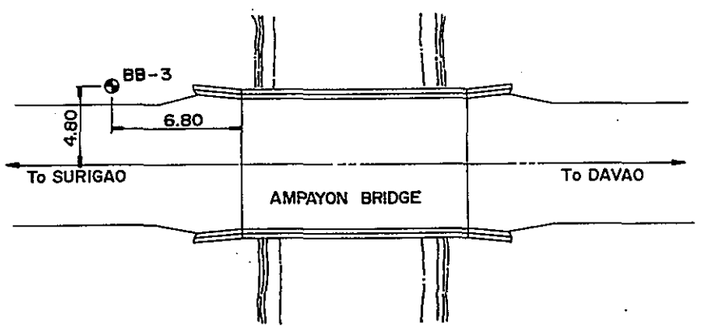


PROFILE

SCALE: 1:200 m.

BORING LOCATION

DRAWN NOT TO SCALE



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-3, Km. 1232+785 BORING LOCATION	SHEET NO. B-9

BORING LOG

BB - 3

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
GROUND SURFACE:			GROUND ELEVATION:					WATER TABLE : 4.20m.						
		2.75	2.75		Silty SAND	Brown	Dense	With trace of gravel	0.7 1.0 1.7	SM	3 11	2 3	2 6	1 5
									2.0 2.7		3	2	2	1
	▽	4.50	1.75		Silty SAND	Dark Gray	Very Loose	Low to Non Plastic	3.0 3.7	SM	2	1	1	1
									4.0 4.7		5	2	2	3
		7.00	2.50		Silty SAND	Gray	Loose	Low Plastic with trace of Fine Gravel	5.0 5.7	SM	5	2	2	3
									6.0 6.7		7	5	4	3
		9.50	2.50		Clayey SAND	Gray	Loose	Low Plastic with trace of Gravel	7.0 7.7	SC	7	2	3	4
									8.0 8.7		12	4	5	7
									9.0 9.7		10	4	5	5
		12.50	3.00		Silty SAND	Dark Gray	Dense	Low to Non Plastic fines	10.0 10.7		9	4	4	5
									11.0 11.7		10	3	2	8
									12.0 12.7	SM	12	5	5	7
		15.50	3.00		Fine SAND	Gray	Dense		13.0 13.7	SP	14	6	7	7
									14.0 14.7		21	9	10	11
									15.0 15.7	CH	6	3	3	3
		18.00	2.50		Silty CLAY	Gray	Firm	High Plasticity	16.0 16.7		4	3	2	2
									17.0 17.7	CH	5	2	2	3
									18.0 18.7		7	4	3	4
					Sandy CLAY	Gray	Firm	Low Plasticity	19.0 19.7	CL	6	3	3	3
									20.0 20.7		7	4	2	5
		22.00	4.00						21.0 21.7	CL	9	5	4	5
									22.0 22.7		10	5	5	5
									23.0 23.7	CH	8	3	4	4
									24.0 24.7		3	3	2	1
									25.0 25.7	CH	4	2	2	2
									26.0 26.7		5	3	3	2
					Silty CLAY	Gray	Firm to Stiff	High Plasticity	27.0 27.7	CH	7	3	3	4
									28.0 28.7		7	3	4	3
									29.0 29.7	CH	6	4	3	3
									30.0 30.7		9	4	4	5
									31.0 31.7	CH	8	3	4	4
									32.0 32.7		11	4	5	6
									33.0 33.7	CH	10	4	4	6
		35.00	13.00						34.0 34.7		10	4	5	5
									35.0					

STANDARD PENETRATION TEST OR CORE RECOVERY
• (N-VALUE) 10 20 30 40 50
□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. ·····•·····
L.L. ——○——
P.L. · ▲ ·
20 40 60 80 100120140

SPECIFIC GRAVITY
2 3

GRAVEL
SAND
SILT
CLAY
20 40 60 80 %

SCALE (m) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-3, Km.1232+785 BORING LOG

SHEET NO.
B - 10

BORING LOG

BB - 3

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		35.00	13.00		Silty CLAY	Gray	Stiff	High Plasticity
		40.00	5.00					

GROUND SURFACE: GROUND ELEVATION: WATER TABLE : 4.20 m.

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
35.7	CH	9	5	4	5
36.0–36.7		10	5	5	5
37.0–37.7	CH	12	5	5	7
38.0–38.7		11	5	5	6
39.0–39.7	CH	12	5	6	6
40.0					

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. —•—

L.L. —○—

P.L. —▲—

20 40 60 80 100 120 140

SPECIFIC GRAVITY —•— 2 3

GRAVEL SAND SILT CLAY

20 40 60 80 %

SCALE (m) 1–35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-3, Km.1232+785 BORING LOG

SHEET NO. B - 11

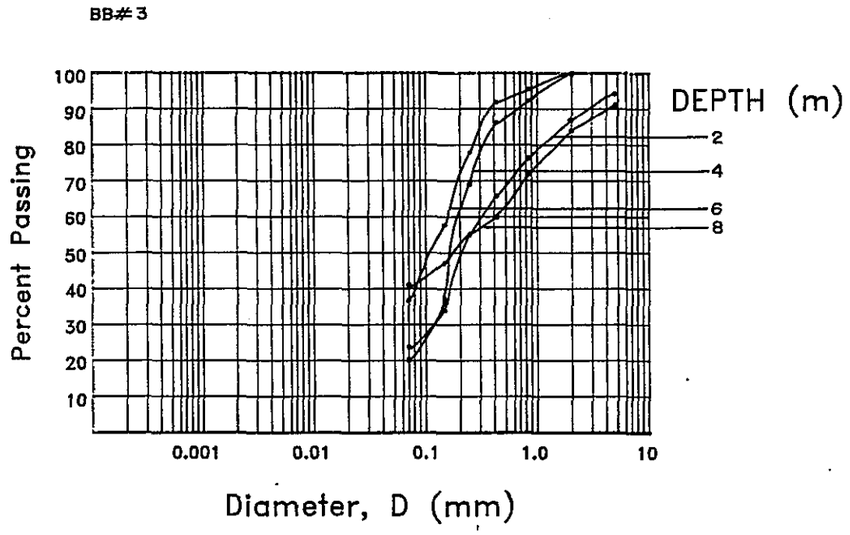
SUMMARY OF LABORATORY TEST RESULTS

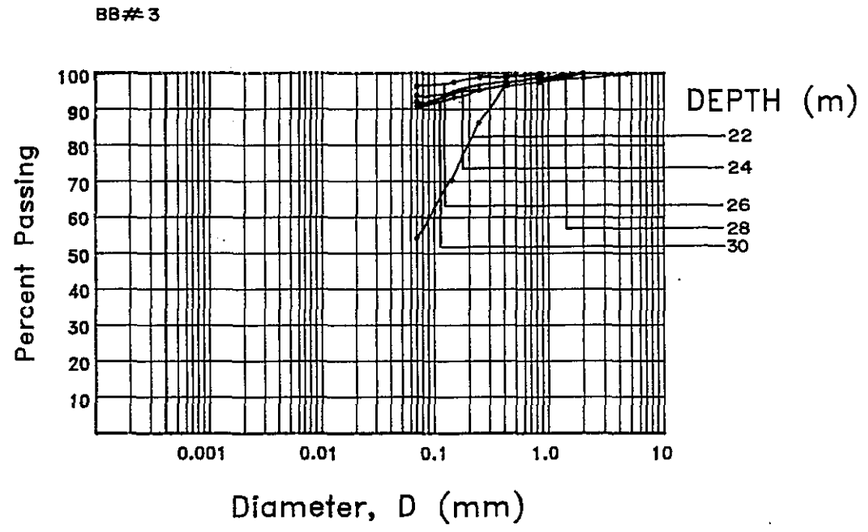
BORING NO. BB # 3

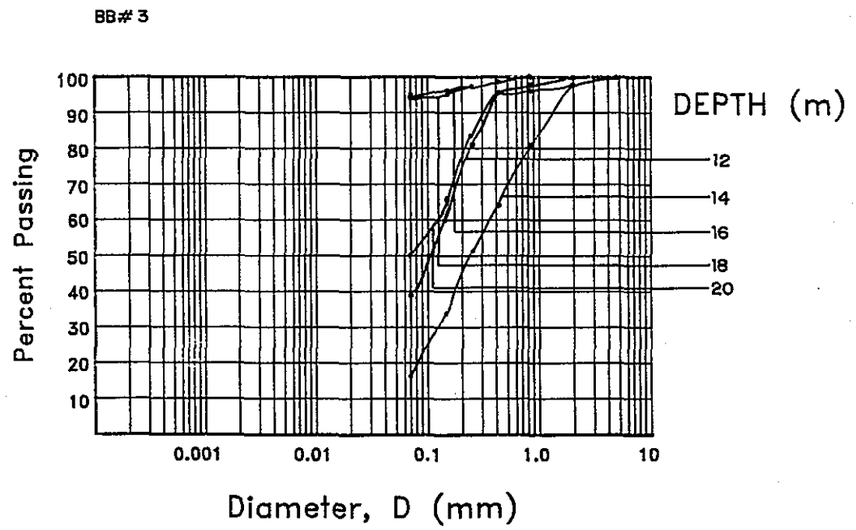
SAMPLE NO.	DEPTH (M.)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.0	Silty Sand	11	16	23	19	4			100	95	87	76	66	55	34	24	2.73	SM
4	3.55	4.0	Silty Sand	2	44								100	93	86	69	36	20	2.71	SM
6	5.55	6.0	Silty Sand	5	44	25	21	4					100	96	92	78	58	37	2.70	SM
8	7.55	8.0	Clayey Sand	7	31	35	18	17		100	97	91	84	72	60	55	48	41	2.70	SC
10	9.55	10.0		10				N O	R	E C	O V	E R	Y							
12	11.55	12.0	Silty Sand	10	39	27	17	10					100	98	96	81	60	39	2.68	SM
14	13.55	14.0	Fine Sand	14	35							100	98	81	64	52	34	17	2.68	SP
16	15.55	16.0	Silty Clay	6	58	63	32	31						100	99	98	97	96	2.64	CH
18	17.55	18.0	Silty Clay	5	54	59	29	30						100	99	98	96	95	2.64	CH
20	19.55	20.0	Sandy Clay	6	61	33	19	14				100	98	97	96	84	67	50	2.66	CL
22	21.55	22.0	Sandy Clay	9	44	36	21	15				100	99	98	97	86	70	54	2.62	CL
24	23.55	24.0	Silty Clay	8	43	67	33	34					100	98	97	96	95	94	2.60	CH
26	25.55	26.0	Silty Clay	4	54	71	34	37						100	99	99	98	97	2.60	CH
28	27.55	28.0	Silty Clay	7	53	75	35	40				100	99	99	98	96	95	93	2.59	CH
30	29.55	30.0	Silty Clay	6	55	72	38	34				100	99	98	98	96	94	92	2.59	CH
32	31.55	32.0	Silty Clay	8	56	74	34	40						100	99	97	95	93	2.58	CH
34	33.55	34.0	Silty Clay	10	59	78	36	42				100	99	98	97	97	96	96	2.58	CH
36	35.55	36.0	Silty Clay	9	74	76	41	35					100	99	99	98	97	95	2.61	CH
38	37.55	38.0	Silty Clay	12	68	79	43	36				100	99	99	98	98	97	96	2.60	CH
40	39.55	40.0	Silty Clay	12	63	75	39	36					100	99	98	97	95	92	2.61	CH

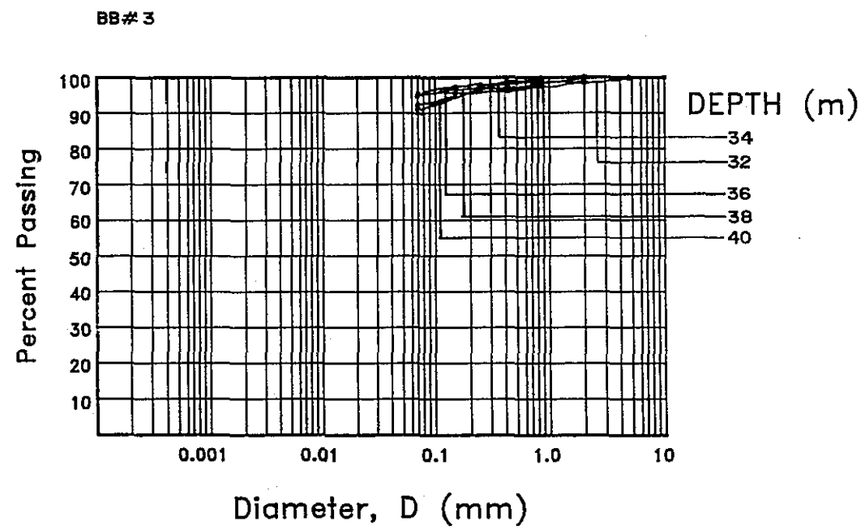
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-3, Km.1232+785 SUMMARY OF LABORATORY TEST RESULTS

SHEET NO. B-12

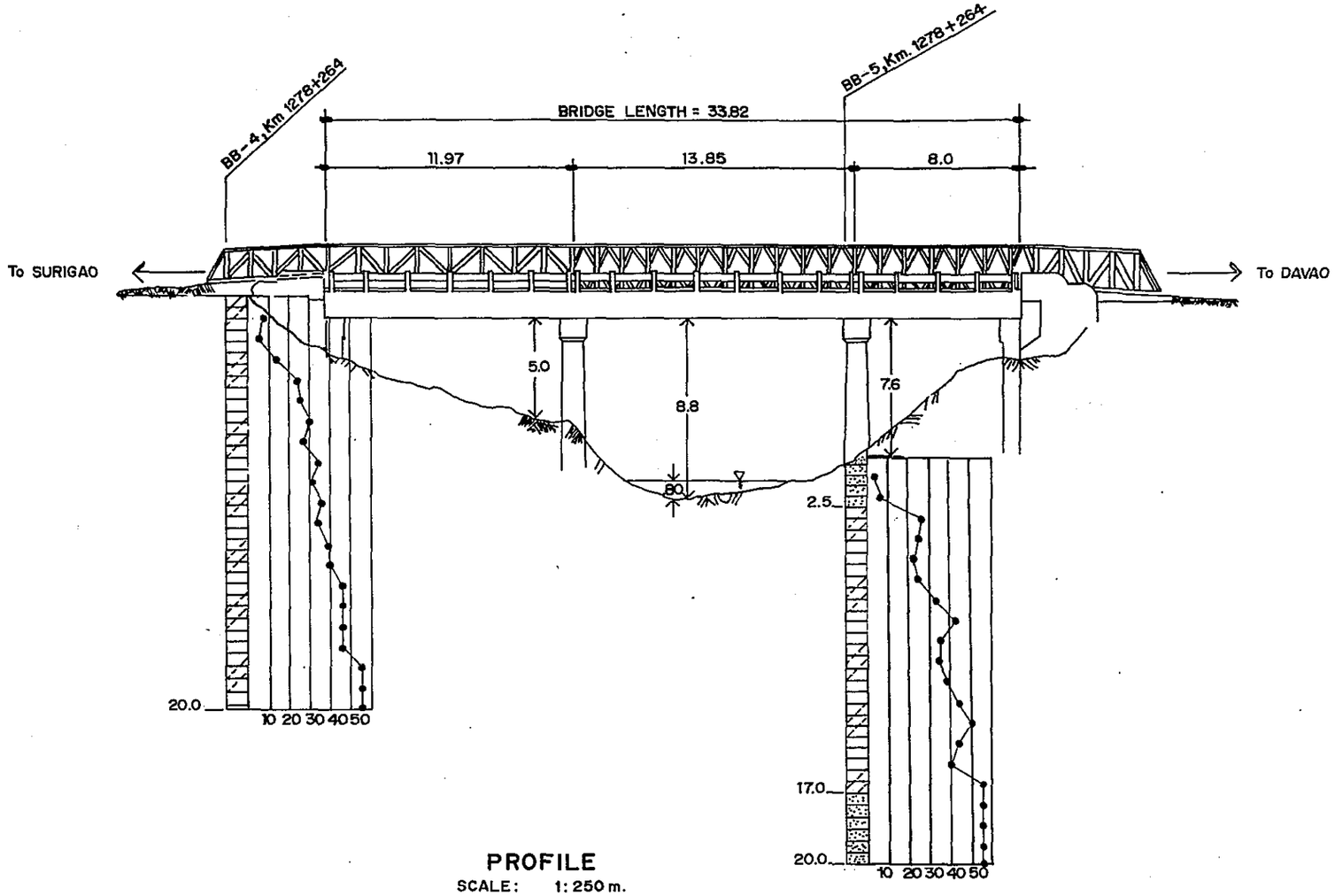




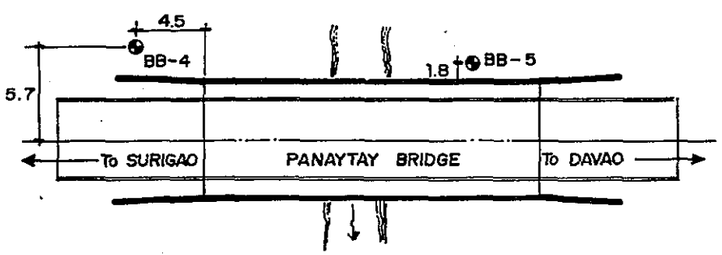




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINADANAO SECTION)	BB-3 ,Km.1232+785 SIEVE ANALYSIS GRAPH	SHEET NO. B-13



PROFILE
SCALE: 1:250 m.



BORING LOCATION
DRAWN NOT TO SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-4,5, Km. 1278+264 BORING LOCATION	SHEET NO. B-14

BB - 4

BORING LOG

GROUND SURFACE: | GROUND ELEVATION: | WATER TABLE : 4.50m.

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
0.70		8	3 3 5		BROWN		
1.0 / 1.70	CH	6	2 3 3	Reddish BROWN			
2.0 / 2.70		13	3 5 8		BROWN		
3.0 / 3.70	CH	24	8 12 12				
4.0 / 4.70		26	8 10 16				
5.0 / 5.70	CH	30	9 13 17				
6.0 / 6.70		28	9 13 15				
7.0 / 7.70	CH	34	10 15 19			Very STIFF TO HARD	
8.0 / 8.70		31	11 13 18				
9.0 / 9.70	CH	37	10 15 22	Silty CLAY	GRAY		High Plasticity
10.0 / 10.70		34	12 16 18				
11.0 / 11.70	CH	39	11 18 21				
12.0 / 12.70		40	11 18 22				
13.0 / 13.70	CH	47	15 20 27				
14.0 / 14.90		47	14 20 27				
15.0 / 15.70	CH	47	14 19 28				
16.0 / 16.70		46	14 24 22				
17.0 / 17.70	CH	66	16 24 42				
18.0 / 18.70		59	15 22 37				
19.0 / 19.70	CH	60	14 23 37				
20.0							

STANDARD PENETRATION TEST OR CORE RECOVERY: • (N-VALUE) 10 20 30 40 50; □ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

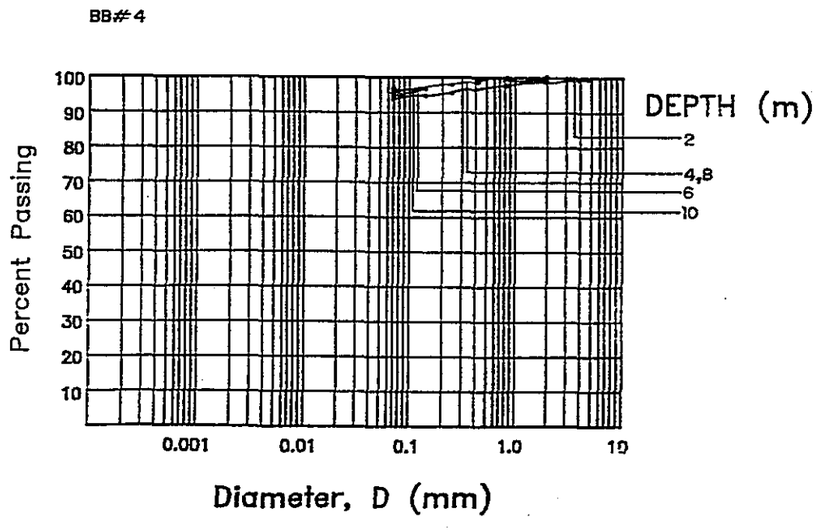
SCALE (m): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

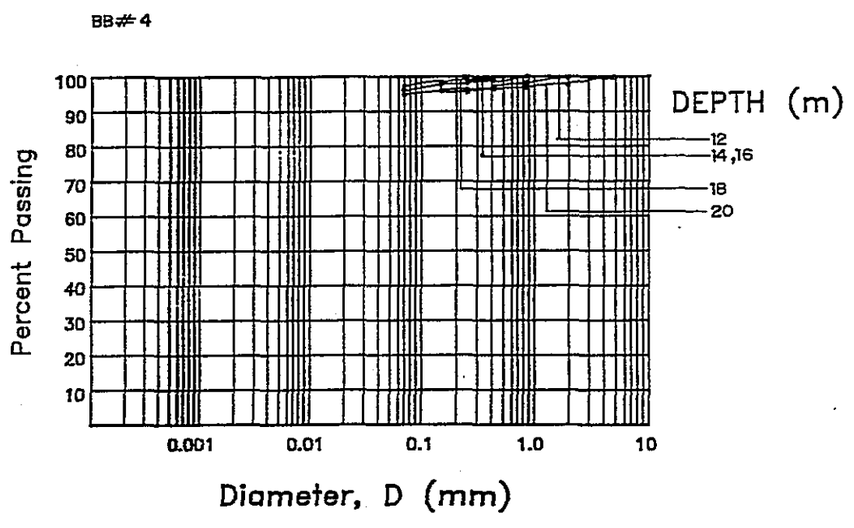
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-4, Km. 1278+264 BORING LOG
			SHEET NO. B-15

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BB#4

SAMPLE NO.	DEPTH (M)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.00	Silty Clay	6	68	78	37	41				100	99	98	97	96	95	94	2.60	CH
4	3.55	4.00	Silty Clay	24	41	77	39	38					100	100	99	98	97	96	2.60	CH
6	5.55	6.00	Silty Clay	30	44	76	37	39						100	99	98	97	95	2.63	CH
8	7.55	8.00	Silty Clay	34	42	71	40	31					100	100	99	98	97	96	2.63	CH
10	9.55	10.00	Silty Clay	37	42	78	43	35						100	99	98	97	97	2.65	CH
12	11.55	12.00	Silty Clay	39	44	77	38	39				100	100	99	98	97	96	95	2.62	CH
14	13.55	14.00	Silty Clay	47	39	78	40	38						100	99	98	97	96	2.67	CH
16	15.55	16.00	Silty Clay	47	36	75	37	38					100	99	98	97	96	95	2.68	CH
18	17.55	18.00	Silty Clay	66	48	75	39	36					100	100	99	99	98	97	2.68	CH
20	19.55	20.00	Silty Clay	60	43	77	42	35				100	98	97	97	96	96	95	2.64	CH





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-4, Km. 1278+264 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-16

BB - 5

BORING LOG

GROUND SURFACE: | GROUND ELEVATION: | WATER TABLE : 1.50m

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
1–2	▽	2.5	2.5		Sandy Clay	Brown	Firm	High Plasticity Clay w/ Little Sand	.70 – 1.00 – 1.70	CH	3	1 / 1 / 2
											7	1 / 2 / 5
3–9					Silty Clay	Gray	Hard	High Plasticity	2.00 – 2.70		27	7 / 14 / 13
									3.00 – 3.70	CH	24	8 / 11 / 13
									4.00 – 4.70		22	8 / 10 / 12
									5.00 – 5.70	CH	24	9 / 11 / 13
									6.00 – 6.70		32	11 / 14 / 18
									7.00 – 7.70	CH	42	10 / 17 / 25
									8.00 – 8.70		36	10 / 15 / 21
									9.00 – 9.70	CH	34	12 / 17 / 17
									10.00 – 10.70		39	11 / 17 / 22
									11.00 – 11.70	CH	44	12 / 18 / 26
									12.00 – 12.70		50	14 / 25 / 25
									13.00 – 13.70	CH	44	12 / 20 / 24
									14.00 – 14.70		40	13 / 19 / 21
									15.00 – 15.70	CH	63	18 / 25 / 38
									16.00 – 16.70		89	16 / 27 / 62
18–20								High Plasticity Clay with some Fine Sand	17.00 – 17.70	CH	64	16 / 25 / 39
									18.00 – 18.70		81	19 / 31 / 50
		20.0	17.5						19.00 – 20.00	CH	65	18 / 30 / 35

STANDARD PENETRATION TEST OR CORE RECOVERY: • (N-VALUE) 10 20 30 40 50; □ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. —●— L.L. —○— P.L. —▲— 20 40 60 80 100 120 140

SPECIFIC GRAVITY —●— 2 3

GRAVEL / SAND / SILT / CLAY 20 40 60 80 %

SCALE (m) 1–35

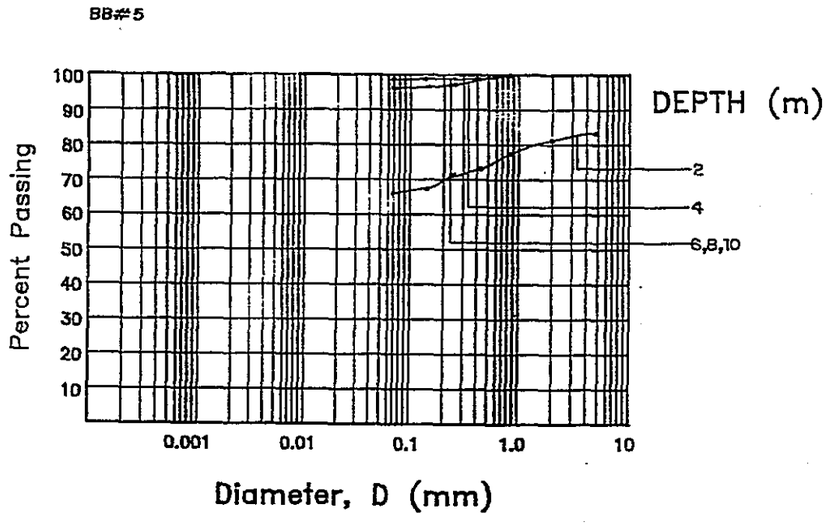
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-5, Km. 1278+264 BORING LOG

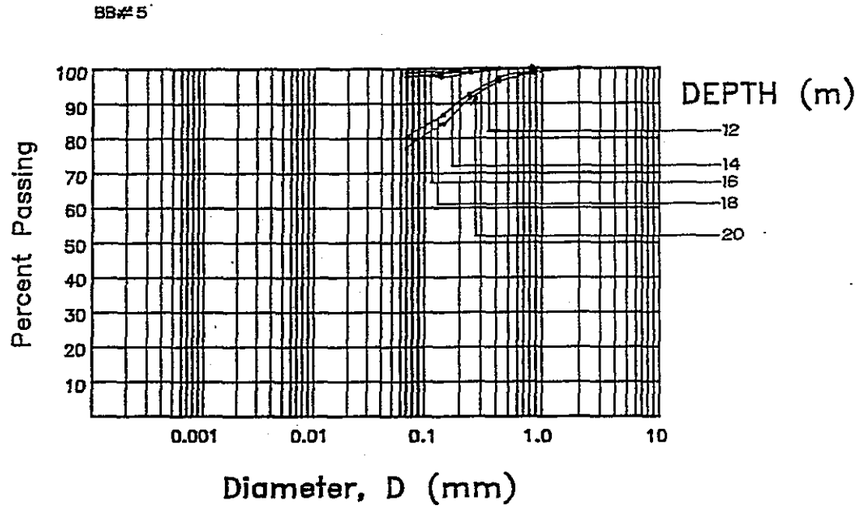
SHEET NO. B - 17

SUMMARY OF LABORATORY TEST RESULTS

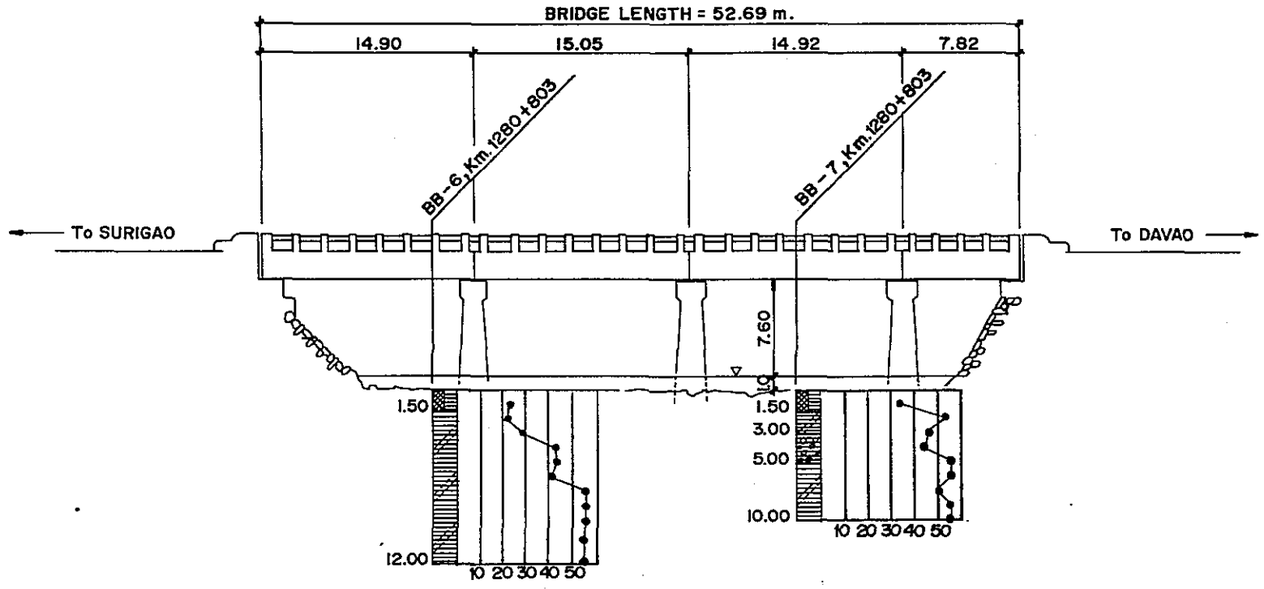
BORING NO. BB #5

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-2	1.55	2.00	Sandy Clay	7	59	70	36	34		100	86	83	81	77	73	71	68	66	2.68	CH
4	3.55	4.00	Silty Clay	24	44	78	42	36						100	99	98	97	96	2.58	CH
6	5.55	6.00	Silty Clay	24	47	79	41	38						100	100	99	99	99	2.59	CH
8	7.55	8.00	Silty Clay	42	48	77	38	39						100	100	99	99	99	2.60	CH
10	9.55	10.00	Silty Clay	34	47	77	41	36						100	100	99	99	99	2.62	CH
12	11.55	12.00	Silty Clay	44	48	80	43	37						100	100	99	99	98	2.64	CH
14	13.55	14.00	Silty Clay	49	47	73	39	34						100	99	99	98	98	2.64	CH
16	15.55	16.00	Silty Clay	63	48	766	41	35							100	100	99	99	2.63	CH
18	17.55	18.00	Silty Clay	64	37	76	38	38					100	99	98	93	86	80	2.68	CH
20	19.55	20.00	Sandy Clay	65	40	71	34	37					100	99	97	92	84	77	2.70	CH



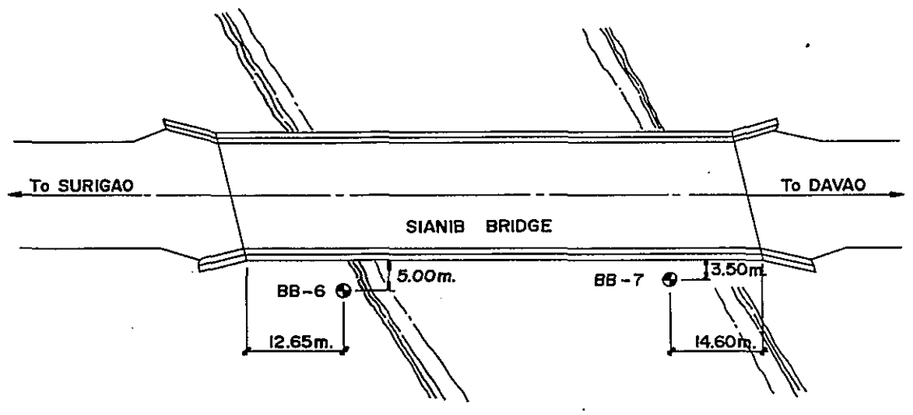


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-5, Km.1278+264 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-18



PROFILE

SCALE: 1:400 m.



BORING LOCATION

DRAWN NOT TO SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-6,7, Km. 1280+803 BORING LOCATION	SHEET NO. B-19

BORING LOG

BB-6

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	STANDARD PENETRATION TEST OR CORE RECOVERY: • (N-VALUE) 10 20 30 40 50; □ SAMPLE RECOVERED 20 40 60 80 100	NAT.M.C. / L.L. / P.L. (20 40 60 80 100 120 140)	SPECIFIC GRAVITY (2 3)	GRAVEL / SAND / SILT / CLAY (20 40 60 80 %)	SCALE (m)
GROUND SURFACE:				GROUND ELEVATION:				WATER TABLE : 1.40m.									
1		1.5	1.5		Sand and Gravel	Gray	DENSE	Core Boring	0.7	CH	22	7 10 12					1
2									1.5		21	10 11 10					2
3									2.5								3
4								High Plasticity Clay	3.5	CH	29	9 12 17					4
5									4.5		43	18 21 22					5
6									5.5	CH	44	14 21 23					6
7					Silty Sand	Gray	HARD	High Plasticity with trace of Gravel	6.5		41	13 16 25					7
8									7.5	CH	61	17 28 33					8
9									8.5		62	19 24 38					9
10									9.5	CH	61	16 26 35					10
11									10.5		64	18 28 36					11
12		12.0	10.5					High Plasticity	11.5	CH	68	16 88					12
13									12.5								13
14																	14
15																	15
16																	16
17																	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
31																	31
32																	32
33																	33
34																	34
35																	35

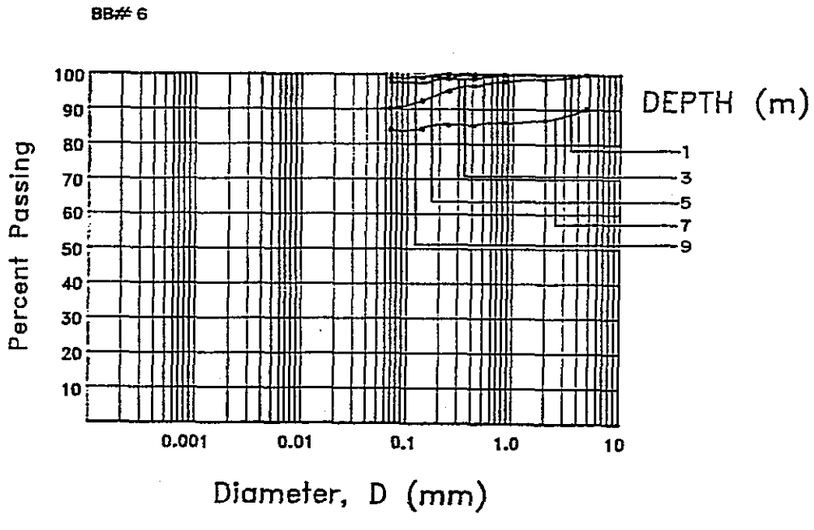
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-6, Km. 1280+803 BORING LOG

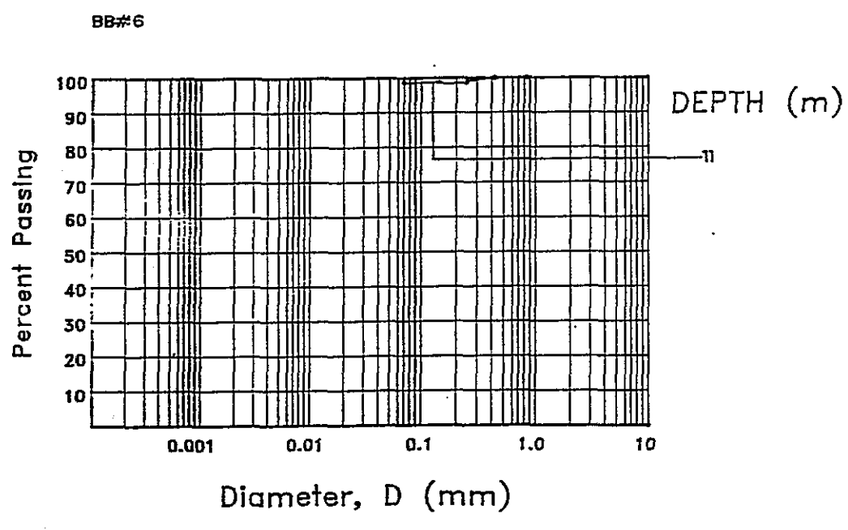
SHEET NO.
B-20

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BB # 6

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-1	1.55	2.00	Silty Clay	22	49	71	37	34				100	99	98	97	95	92	90	2.63	CH
3	3.55	4.00	Silty Clay	29	49	78	72	36						100	99	99	98	98	2.59	CH
5	5.55	6.00	Silty Clay	44	45	79	43	36						100	100	99	99	99	2.58	CH
7	7.55	8.00	Silty Clay	61	52	76	41	35		100	94	90	87	86	85	85	84	84	2.70	CH
9	9.55	10.00	Silty Clay	61	53	79	44	35							100	100	99	99	2.60	CH
11	11.55	12.00	Silty Clay	88	47	77	42	35						100	100	99	99	99	2.59	CH





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-6, Km. 1280+803 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-21

BB - 7

BORING LOG

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	STANDARD PENETRATION TEST OR CORE RECOVERY: DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100	NAT.M.C. / L.L. / P.L. (20 40 60 80 100 120 140)	SPECIFIC GRAVITY (2 3)	GRAVEL / SAND / SILT / CLAY	SCALE (m)
GROUND SURFACE:		GROUND ELEVATION:					WATER TABLE : 1.00m.										
1		1.50	1.5		Sand, Gravel Boulder			CORING	1.70		34	14 15 19					1
2																	2
3		3.00	1.5		Silty Clay	G R A Y	Hard	High Plastic Fines	3.00	CH	52	21 25 27					3
4					Clayey Gravel		Medium Dense	High Plastic Fines	4.00	GC	47	17 22 25					4
5		5.00	2.0						5.00		44	14 18 26					5
6									6.00		63	29 31 32					6
7					Silty Clay		Hard	High Plastic Fines	7.00	CH	57	14 27 30					7
8									8.00		50	15 50					8
9		10.00	5.0						9.00		60	18 28 32					9
10									10.00		62	26 30 32					10
11																	11
12																	12
13																	13
14																	14
15																	15
16																	16
17																	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
31																	31
32																	32
33																	33
34																	34
35																	35

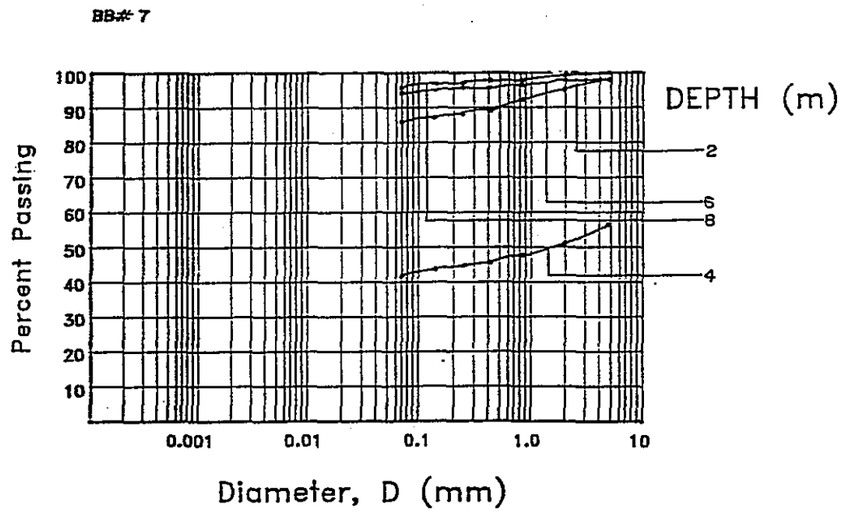
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-7, Km. 1280+803 BORING LOG

SHEET NO.
B - 22

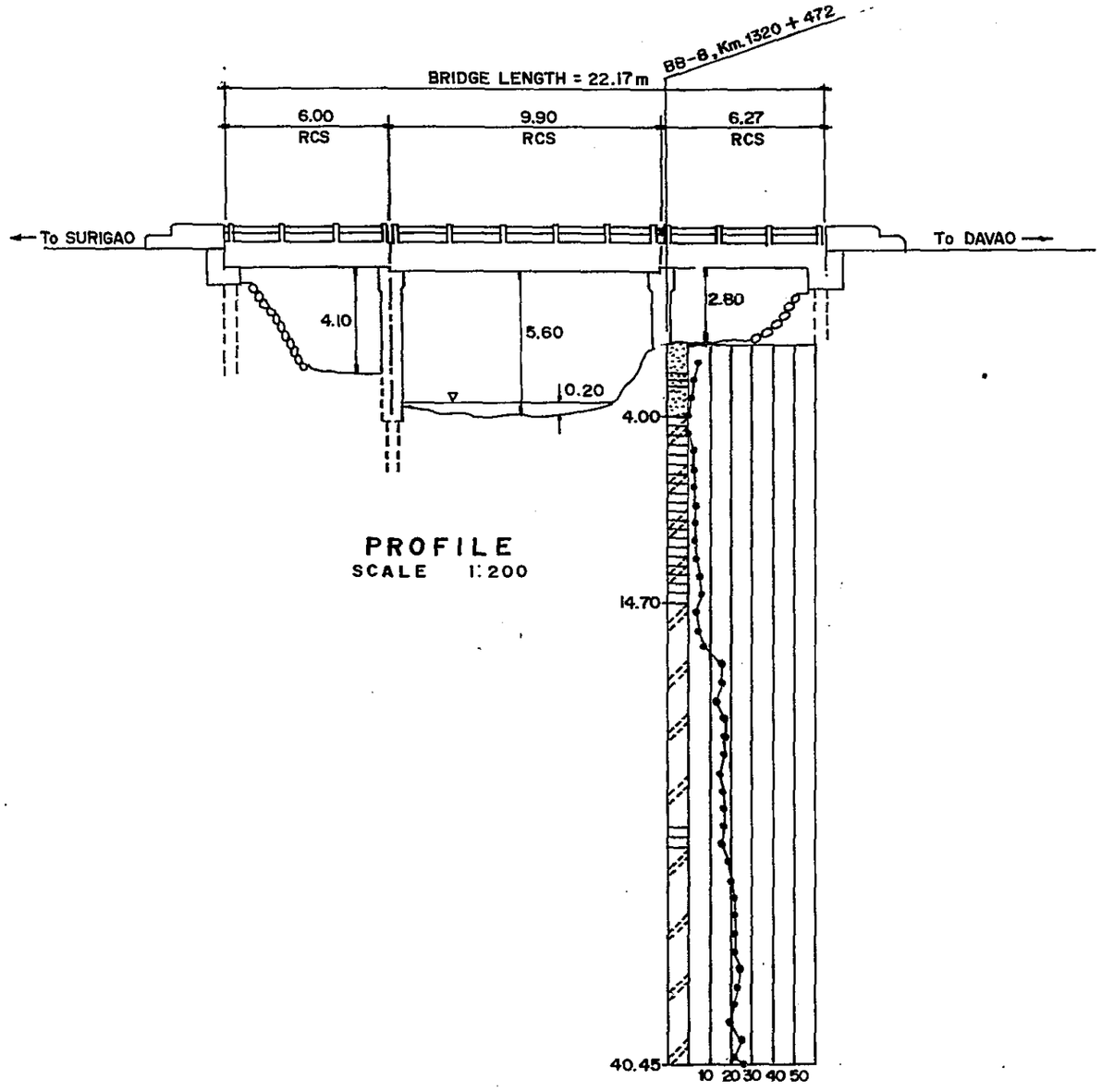
SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BB #7

SAMPLE NO.	DEPTH (m)	TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
					LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS-2	3.0	Silty Clay	52	68	76	41	35			100	98	95	92	89	88	87	86	2.61	CH
4	8.0	Clayey Gravel	44	25	71	39	32	100	90	69	56	51	48	46	45	44	42	2.71	GC
6	7.0	Silty Clay	57	52	79	42	37			100	98	98	97	96	96	95	94	2.59	CH
8	9.0	Silty Clay	60	51	77	41	36				100	99	98	98	97	97	96	2.63	CH



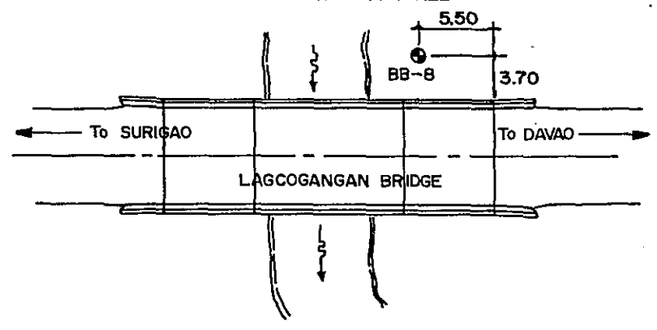
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-7, Km. 1280+803 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-23



PROFILE
SCALE 1:200

BORING LOCATION

DRAWN NOT TO SCALE



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-8, Km.1320+472 BORING LOCATION	SHEET NO. B-24

BORING LOG

BB – 8

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:			GROUND ELEVATION:				WATER TABLE :	
1–4		4.0	4.0		Clayey Sand	Brown To Light Gray	Soft To Very Soft	
4–14		14.7	10.7		Silty Clay	Gray To Dark Gray	Soft	
14–35					Clayey Silt	Gray To Grayish Green	Medium Stiff To Very Stiff	

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
1.15	SC	5	2 2 3
1.45–2.15		2	1 1 1
2.45–3.15	SC	1	0 0 0
3.45–4.15		0	
4.45–5.15	ML	0	
5.45–6.15		2	1 1 2
6.45–7.15	SC-OL	2	2 1 1
7.45–8.15		2	0 1 1
8.45–9.15	MH-OL	4	1 2 2
9.45–10.15		3	1 1 2
10.45–11.15	MH-OL	2	1 1 1
11.45–12.15		3	1 1 2
12.45–13.15	MH	5	2 2 3
13.45–14.15		6	2 3 3
14.45–15.15	CH	3	1 2 1
15.45–16.15		4	2 2 2
16.45–17.15	ML	8	2 3 5
17.45–18.15		15	5 6 9
18.45–19.15	MH	15	4 7 8
19.45–20.15		12	4 5 7
20.45–21.15	MH	17	6 8 9
21.45–22.15		18	4 7 11
22.45–23.15	MH	17	5 7 10
23.45–24.15		14	4 6 8
24.45–25.15	MH	17	5 7 10
25.45–26.15		18	5 8 10
26.45–27.15	MH	18	6 8 10
27.45–28.15		16	6 7 9
28.45–29.15	MH	19	7 8 11
29.45–30.15		20	7 9 11
30.45–31.15	MH	21	8 9 12
31.45–32.15		21	7 10 11
32.45–33.15	MH	21	8 10 11
33.45–34.15		23	7 10 13
34.45	MH	22	7 10 12

STANDARD PENETRATION TEST OR CORE RECOVERY
• (N-VALUE) 10 (20) 30 40 50
□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

SCALE (m) 1–35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB - 8 , Km. 1320 + 472 BORING LOG

SHEET NO. B-25

BORING LOG

BB-8

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		35.00						
1–6		40.45	25.75		Clayey Silt	Gray To Grayish Green	Medium Stiff To Very Stiff	
7–35								

GROUND SURFACE: GROUND ELEVATION: WATER TABLE :

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100
35.15	MH	22	7 10 12	
35.45		25	10 11 14	
36.45				
37.15	MH	33	35 15 18	
37.45		26	10 12 14	
38.15				
38.45	MH	25	9 12 13	
39.15				
39.45		26	12 13 13	
40.15				
40.45				

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

SCALE (m) 1–35

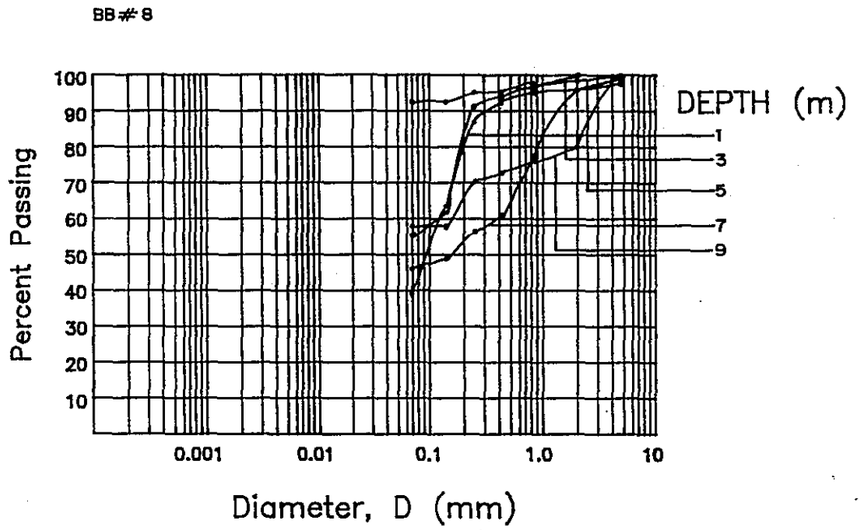
	REPUBLIC OF THE PHILIPPINES	PROJECT TITLE:		SHEET NO.
JAPAN INTERNATIONAL COOPERATION AGENCY	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-8 , Km. 1320 + 472 BORING LOG	B-26

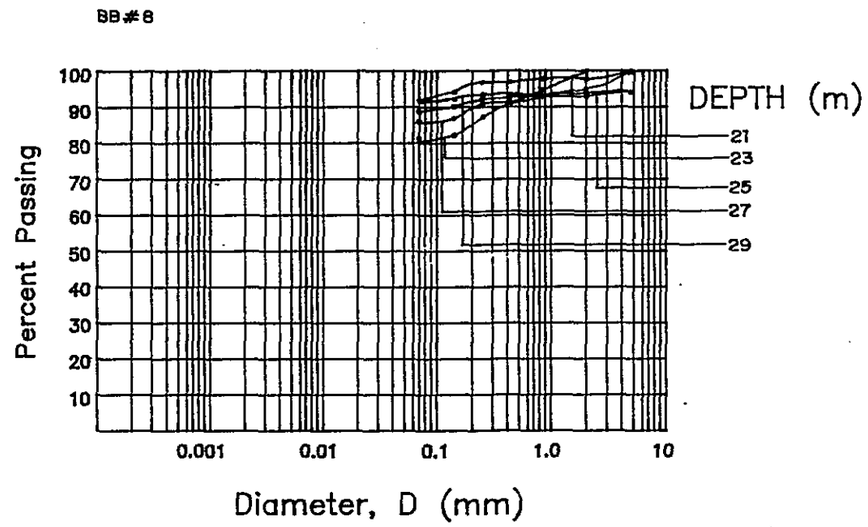
SUMMARY OF LABORATORY TEST RESULTS

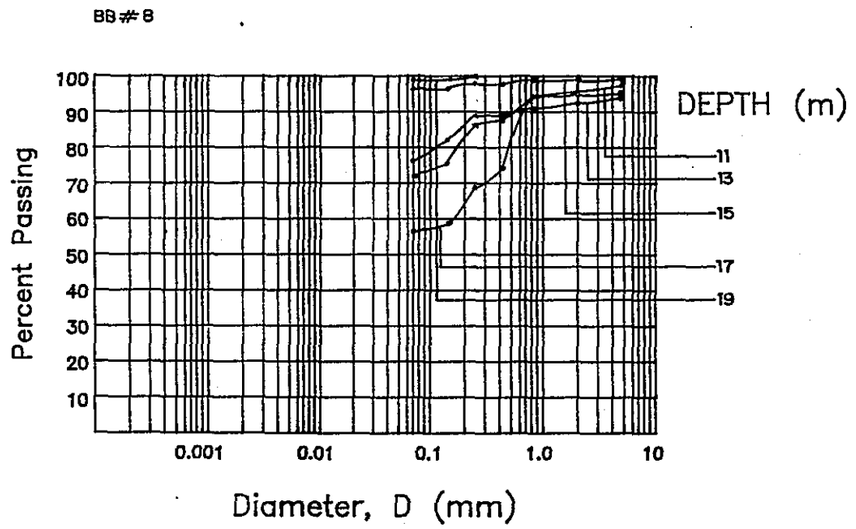
BORING NO. BB # 8

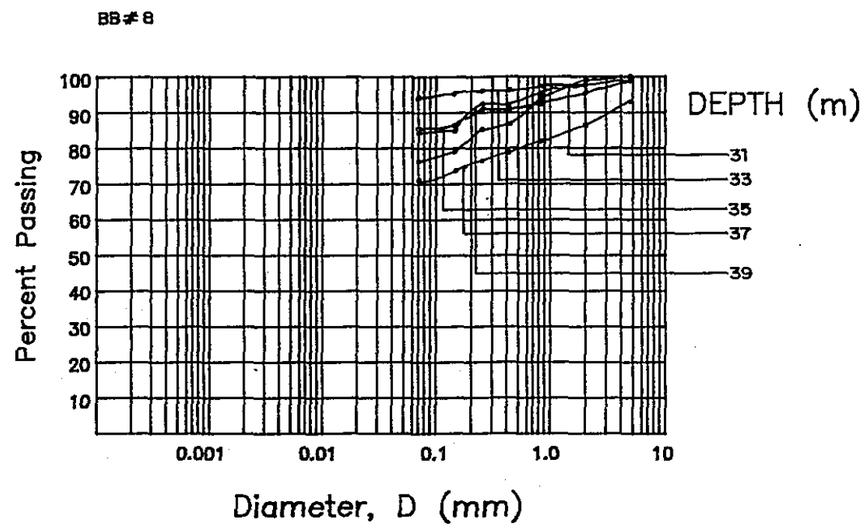
SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.0	1.45	Clayey Sand	5	40.81	28	19	9		100	98	98	96	95	92	87	63	39	2.66	SC
3	3.0	3.45	Sand & Clay	1	57.09	45	23	22					100	96	94	91	62	55	2.67	SC
5	5.0	5.45	Clayey Silt	0	86.58	41	26	15				100	99	97	95	95	93	93	2.60	ML
7	7.0	7.45	Sand & Clay	2	174.74	42	30	12			100	99	96	78	61	56	49	47	2.53	SM-OL
9	9.0	9.45	Sand & Clay	4	172.35	53	36	17				100	80	77	73	70	58	58	2.57	MH-OL
11	11.0	11.45	Sandy Clayey Silt	2	151.77	59	41	18			100	98	96	94	88	86	75	72	2.55	MH-OL
13	13.0	13.45	Clayey Silt	5	80.39	57	37	20		100	95	94	93	91	89	89	82	76	2.64	MH
15	15.0	15.45	Clay	3	71.16	52	22	30			100	99	99	99	98	98	97	97	2.68	MH
17	17.0	17.45	Sandy Clayey Silt	8	97.06	41	26	15		100	97	95	95	94	74	69	59	57	2.59	ML
19	19.0	19.45	Clayey Silt	15	62.59	56	32	24								100	99	99	2.67	MH
21	21.0	21.45	Clayey Silt	17	69.58	60	33	27				100	98	98	97	97	94	92	2.67	MH
23	23.0	23.45	Clayey Silt	17	71.93	60	31	29					100	94	91	88	82	81	2.66	MH
25	25.0	25.45	Clayey Silt	17	80.24	61	41	20		100	96	94	93	93	92	92	90	89	2.63	MH
27	27.0	27.45	Clayey Silt	18	70.54	62	38	24				100	95	93	91	91	88	87	2.64	MH
29	29.0	29.45	Clayey Silt	11	31.17	56	31	25		100	96	94	94	94	93	93	92	92	2.62	MH
31	31.0	31.45	Clayey Silt	21	62.01	51	29	22			100	99	98	98	97	97	96	95	2.68	MH
33	33.0	33.45	Sandy Clayey Silt	21	124.54	56	40	16				100	99	94	88	86	79	77	2.64	MH
35	35.0	35.45	Clayey Silt	22	113.88	75	49	26			100	99	96	93	91	91	87	86	2.71	MH
37	37.0	37.45	Sandy Clayey Silt	33	101.98	70	37	33			100	93	87	82	79	77	74	71	2.69	MH
39	39.0	39.45	Clayey Silt	25	111.99	71	40	31				100	98	95	92	92	86	85	2.67	MH

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-8, Km.1320+472 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-27

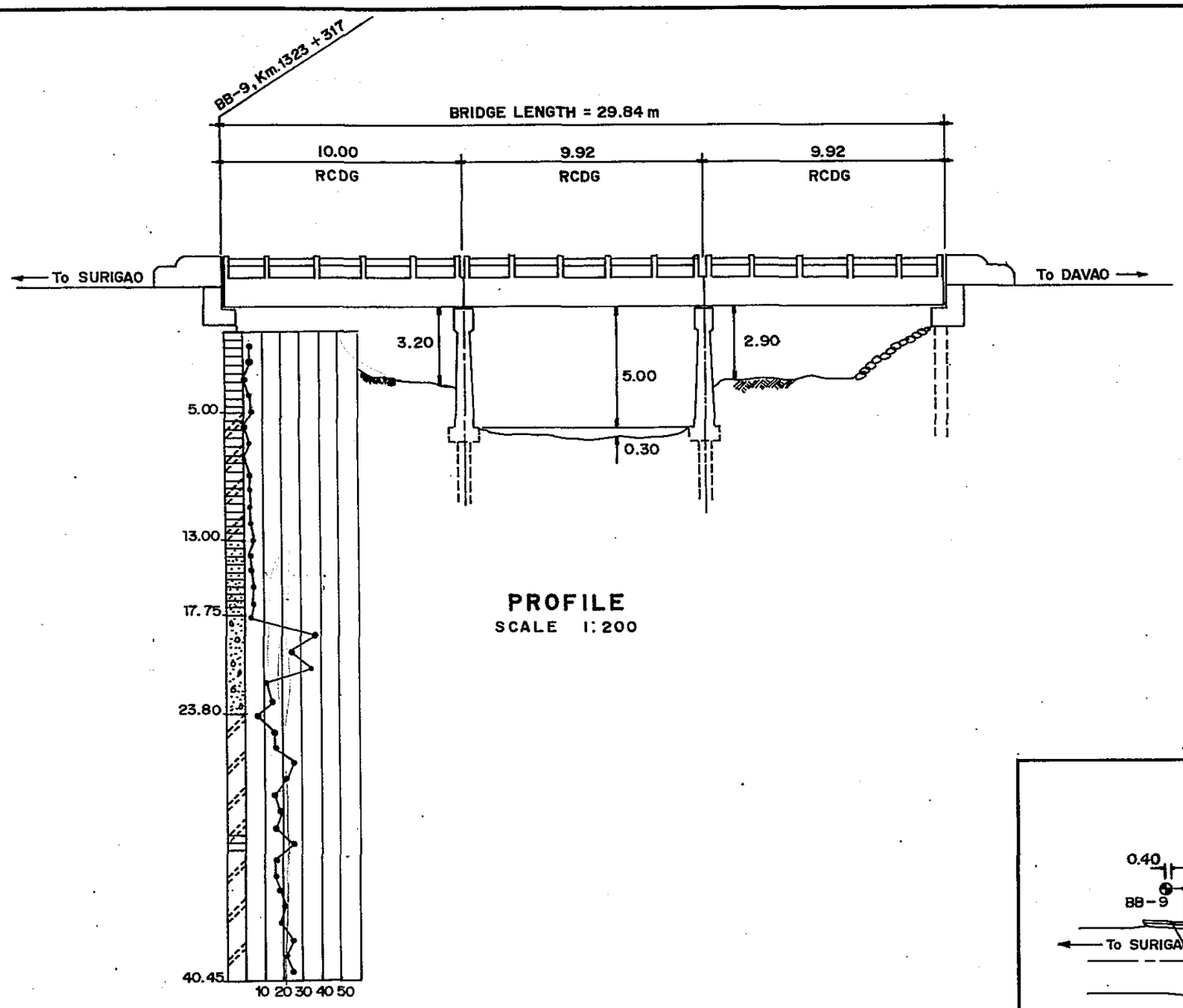






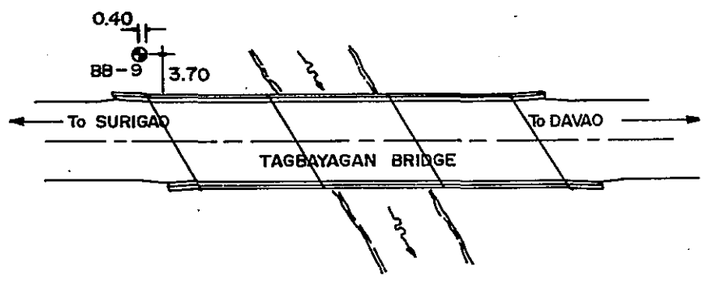


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-8, Km. 1320+472 SIEVE ANALYSIS GRAPH	SHEET NO. B-28



PROFILE
SCALE 1:200

BORING LOCATION
DRAWN NOT TO SCALE



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-9, Km.1323+317 BORING LOCATION	SHEET NO. B-29

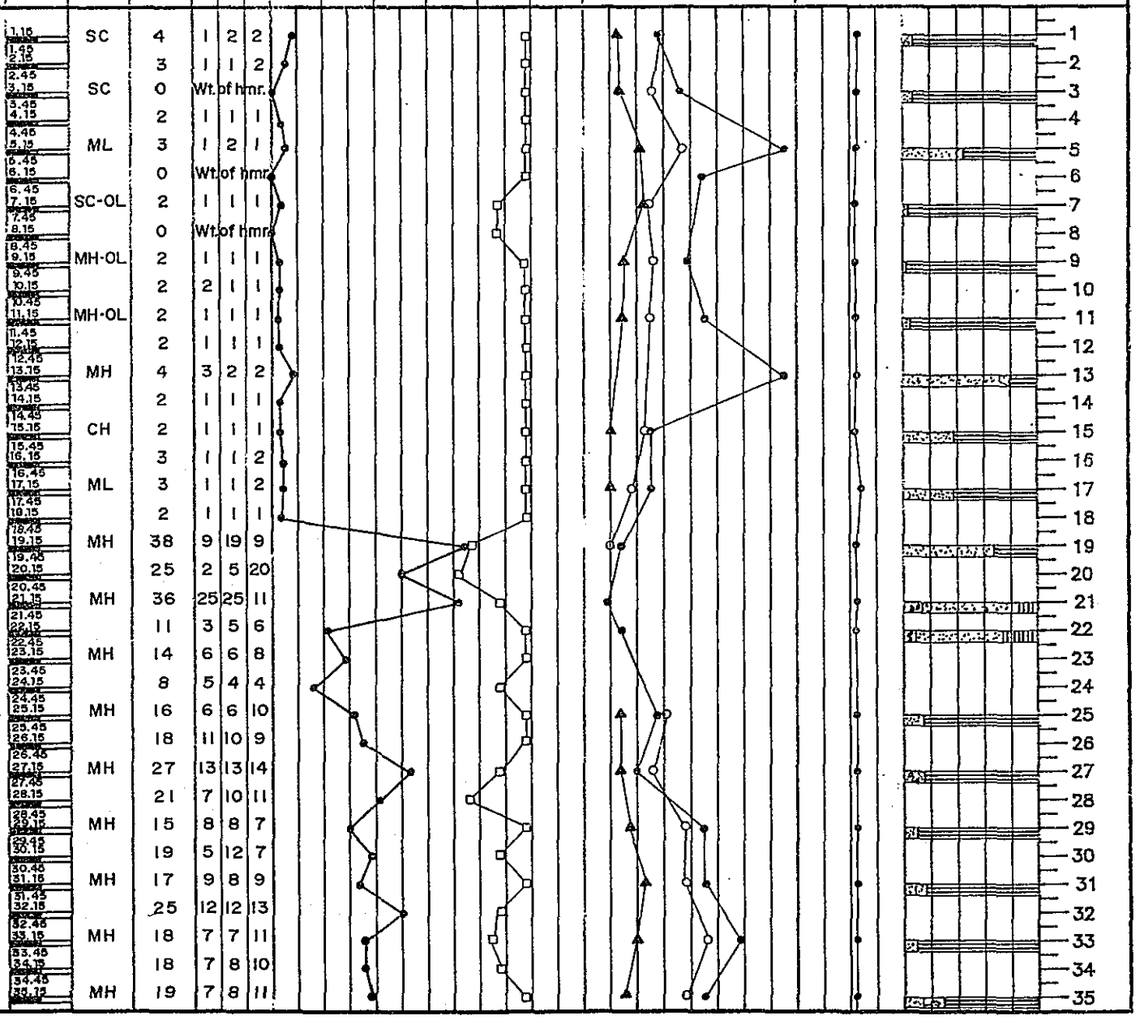
BORING LOG

BB # 9

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
	GROUND SURFACE:		GROUND ELEVATION: 0.00 m.				WATER TABLE : 1.50 m.	
1–5	▽	5.0	5.0		Clay	Brown to light Green	SOFT	
6–13		13.0	8.0		Clay / and Clayey Silt w/ presence of slightly organic and decayed wood fibers.	Gray to dark	SOFT to VERY SOFT	
14–17		17.75	4.75		Sandy Clay	Gray	SOFT	
18–23		23.80	6.05		Gravel & Sand traces of Clay	Gray	DENSE	
24–35					Clayey Silt with appreciable amt. of fine Sand, traces of fine Gravel.	Gray	STIFF to VERY STIFF	

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
1.15	SC	4	1 2 2
1.45–2.15	SC	3	1 1 2
2.45–3.15	SC	0	Wt. of hmr.
3.45–4.15	ML	2	1 1 1
4.45–5.15	ML	3	1 2 1
5.45–6.15	SC-OL	0	Wt. of hmr.
6.45–7.15	SC-OL	2	1 1 1
7.45–8.15	MH-OL	0	Wt. of hmr.
8.45–9.15	MH-OL	2	1 1 1
9.45–10.15	MH-OL	2	2 1 1
10.45–11.15	MH-OL	2	1 1 1
11.45–12.15	MH	2	1 1 1
12.45–13.15	MH	4	3 2 2
13.45–14.15	CH	2	1 1 1
14.45–15.15	CH	2	1 1 1
15.45–16.15	ML	3	1 1 2
16.45–17.15	ML	3	1 1 2
17.45–18.15	MH	2	1 1 1
18.45–19.15	MH	38	9 19 9
19.45–20.15	MH	25	2 5 20
20.45–21.15	MH	36	25 25 11
21.45–22.15	MH	11	3 5 6
22.45–23.15	MH	14	6 6 8
23.45–24.15	MH	8	5 4 4
24.45–25.15	MH	16	6 6 10
25.45–26.15	MH	18	11 10 9
26.45–27.15	MH	27	13 13 14
27.45–28.15	MH	21	7 10 11
28.45–29.15	MH	15	8 8 7
29.45–30.15	MH	19	5 12 7
30.45–31.15	MH	17	9 8 9
31.45–32.15	MH	25	12 12 13
32.45–33.15	MH	18	7 7 11
33.45–34.15	MH	18	7 8 10
34.45–35.15	MH	19	7 8 11



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-9, Km. 1323+317 BORING LOG	SHEET NO. B-30

BORING LOG

BB # 9

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	STANDARD PENETRATION TEST OR CORE RECOVERY: DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM: 15 cm	15 cm	15 cm
									36.15		21	8	9	12
					Clayey Silt with Appreciable Amt. of Fine Sand, Traces of Fine Gravel		Stiff to Very Stiff		36.45 37.15	MH	19	10	9	10
									37.45 38.15		25	8	13	12
									38.45 39.15	MH	21	7	8	13
									39.45 40.15		25	7	10	15
		40.45	16.65						40.45					

GROUND SURFACE: GROUND ELEVATION: WATER TABLE : 1.50m.

STANDARD PENETRATION TEST OR CORE RECOVERY: • (N-VALUE) 10 20 30 40 50; □ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. L.L. P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL SAND SILT CLAY — 20 40 60 80 %

SCALE (m) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-9, Km. 1323+317 BORING LOG	SHEET NO. B-31

SUMMARY OF LABORATORY TEST RESULTS

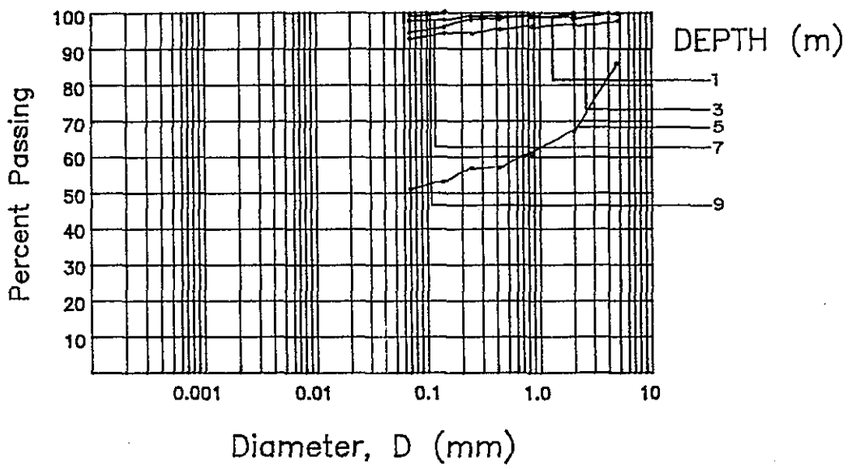
BORING NO. BB # 9

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.0	1.45	Clay	4	57.73	59	25	34					100	99	98	98	96	94	2.62	CH
3	3.0	3.45	Clay	0	74.04	54	27	27			100	98	97	96	95	95	94	93	2.70	CH
5	5.0	5.45	Sandy Clay	3	282.15	77	41	36			100	86	68	61	58	58	53	51	2.66	CH
7	7.0	7.45	Clayey Silt	2	87.06	52	43	9				100	99	99	99	99	98	98	2.53	MH-OL
9	9.0	9.45	Clay	2	79.46	55	30	25									100	99	2.60	CH
11	11.0	11.45	Silty Clay	2	91.53	50	28	22				100	97	96	96	96	96	95	2.67	CL-CH
13	13.0	13.45	Wood fibers	4	593.43	NP	NP	NP			100	81	55	40	30	30	22	20	2.65	-
15	15.0	15.45	Sandy Clay	2	50.82	44	20	24		100	75	75	74	74	73	71	63	61	2.66	CL
17	17.0	17.45	Sandy Clay	3	50.45	37	20	17						100	99	99	80	65	2.69	CL
19	19.0	19.45	Clayey Gravel	38	25.25	40	20	20	49	49	49	45	45	41	38	38	33	29	2.63	GC
21	21.0	21.45	Gravel and Sand	36	19.71	NP	NP	NP		100	90	89	83	58	19	15	12	11	2.66	SP-SM
22	22.0	22.45	Silty Sand	11	27.77	NP	NP	NP		100	96	85	73	57	40	34	25	22	2.67	SM
25	25.0	25.45	Clay	16	57.29	62	27	35				100	99	98	97	97	93	86	2.65	CH
27	27.0	27.45	Clay	27	40.26	56	27	29			100	94	89	86	85	85	83	83	2.67	CH
29	29.0	29.45	Silty Clay	15	88.71	78	35	43					100	98	97	97	95	95	2.66	MH-CH
31	31.0	31.45	Clayey Silt	17	89.53	79	43	36			100	99	96	88	85	85	82	81	2.68	MH
33	33.0	33.45	Clayey Silt	18	119.58	95	40	55				100	99	96	94	94	92	91	2.66	MH
35	35.0	35.45	Sandy Clay	19	91.10	79	32	47			100	95	91	86	83	83	76	71	2.61	CH
37	37.0	37.45	Sandy Clayey Silt	19	81.91	77	57	20		100	86	86	84	83	82	82	82	79	2.70	MH
39	39.0	39.45	Clayey Silt	21	87.66	91	45	46			100	92	86	78	77	77	75	74	2.62	MH

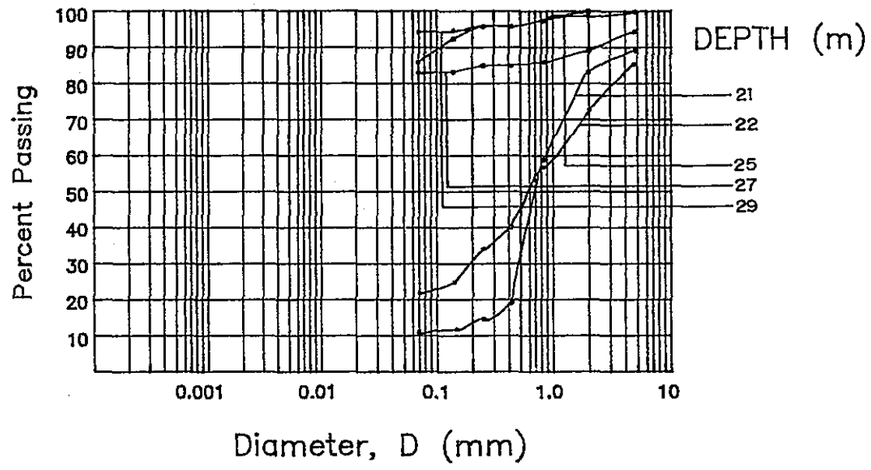
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-9, Km. 1323+317 SUMMARY OF LABORATORY TEST RESULTS

SHEET NO. B - 32

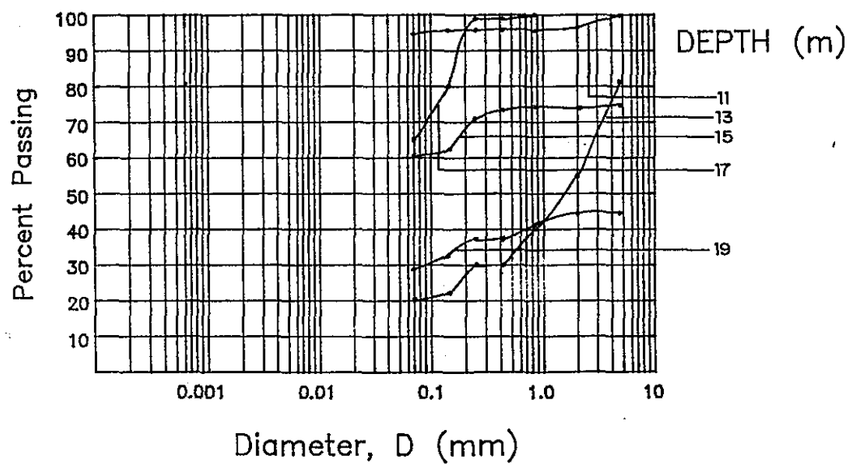
BB# 9



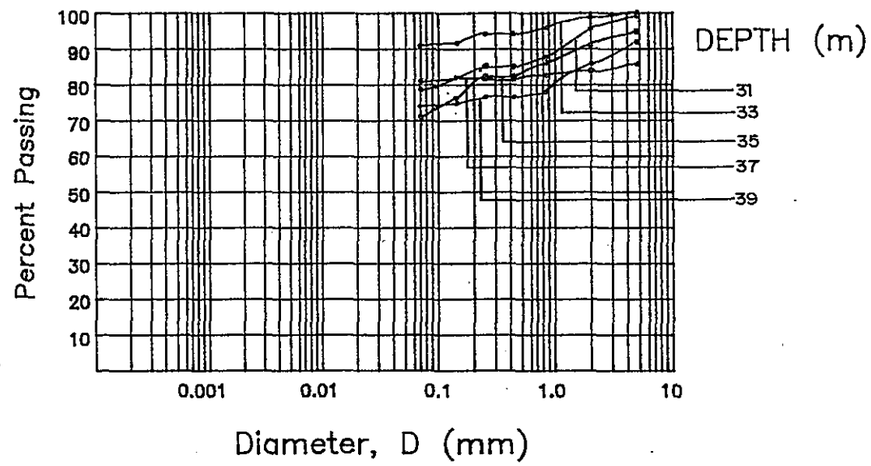
BB# 9



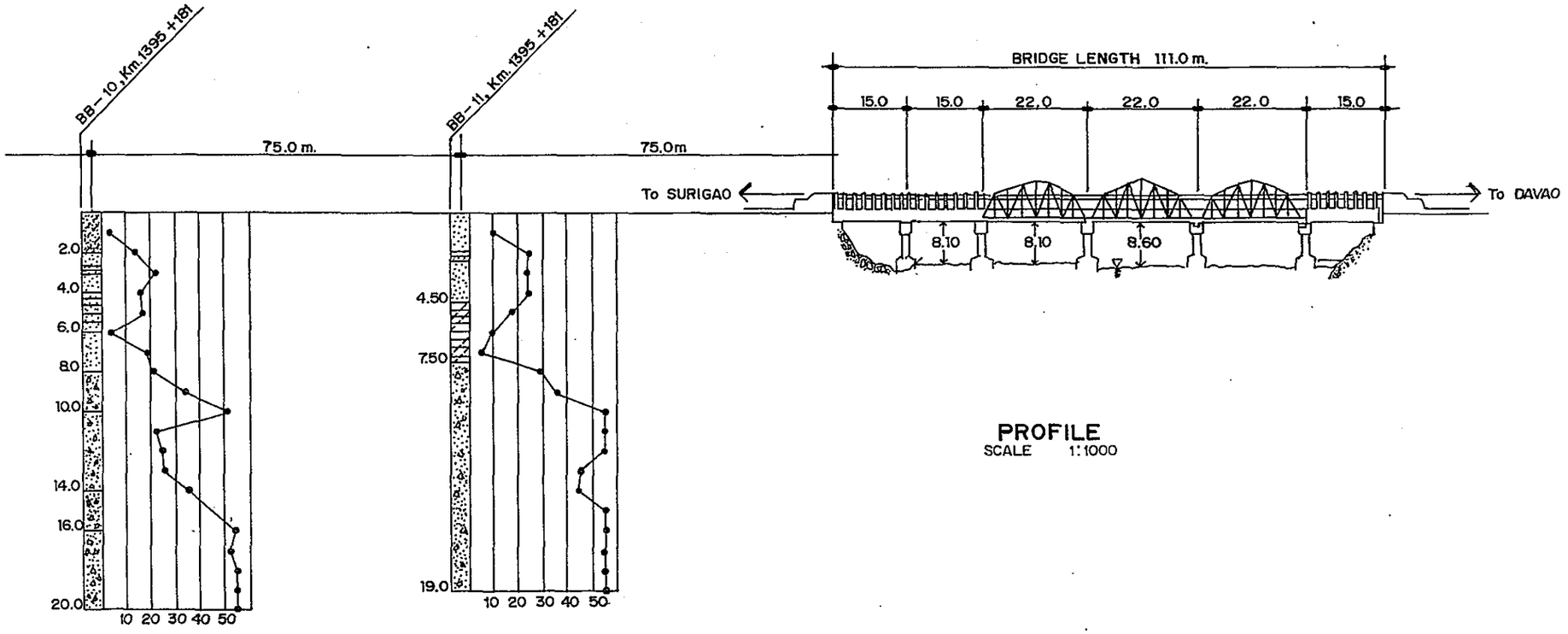
BB# 9



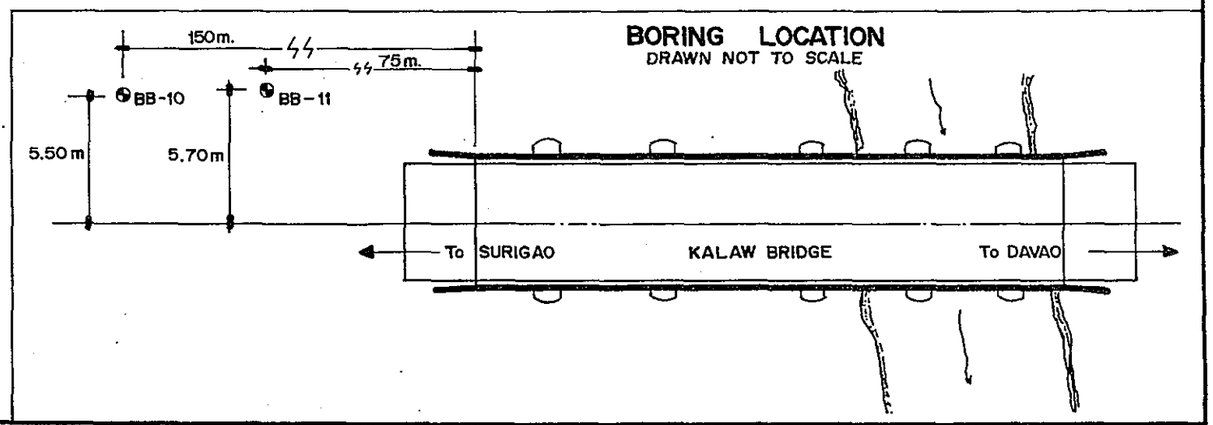
BB# 9



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-9, Km. 1323 + 317 SIEVE ANALYSIS GRAPH	SHEET NO. B-33



PROFILE
SCALE 1:1000



BORING LOCATION
DRAWN NOT TO SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-10,11, Km.1395+181 BORING LOCATION	SHEET NO. B-34

BB - 10

BORING LOG

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:		GROUND ELEVATION:					WATER TABLE : 5.75 m.	
1–2		2.0	2.0		Silty Sand	Brown	Loose to Dense	Medium Plastic
3–4		4.0	2.0		Clayey Sand			
5–6	▽	6.0	2.0		Sandy Clay		Very Stiff	High Plastic Clay
7–8		8.0	2.0		Sand	G R A Y	Medium Dense To Very Dense	Non Plastic Fines
9–10		10.0	2.0		Sandy Gravel			
11–14		14.0	4.0		Gravelly Sand			
15–16		16.0	2.0		Sandy Gravel			
17–20		20.0	4.0		Gravelly Sand			

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100
0.70		3	1 2 1	
1.0	SM	13	3 6 7	
2.0 2.7		22	8 8 14	
3.0 3.7	SC	16	6 9 7	
4.0 4.7		18	6 8 10	
5.0 5.7	CH	3	2 1 2	
6.0 6.7		19	9 11 8	
7.0 7.7	SP	21	6 10 11	
8.0 8.7		34	23 25 19	
9.0 9.7	GP	51	27 27 24	
10.0 10.7		22	14 11 11	
11.0 11.7		24	14 14 10	
12.0 12.7		25	6 5 20	
13.0 13.7	SP	35	17 15 20	
14.0 14.7				
15.0 15.7	GP	54	20 54/5	
16.0 16.7		52	31 52	
17.0 17.7	SP	60	20 30 30	
18.0 18.7		56	28 56	
19.0 19.7		50	30 50	
20.0				

NAT.M.C. —●— L.L. —○— P.L. —▲—

20 40 60 80 100 120 140

SPECIFIC GRAVITY —●— 2 3

GRAVEL / SAND / SILT / CLAY

20 40 60 80 %

SCALE (m) 1–35

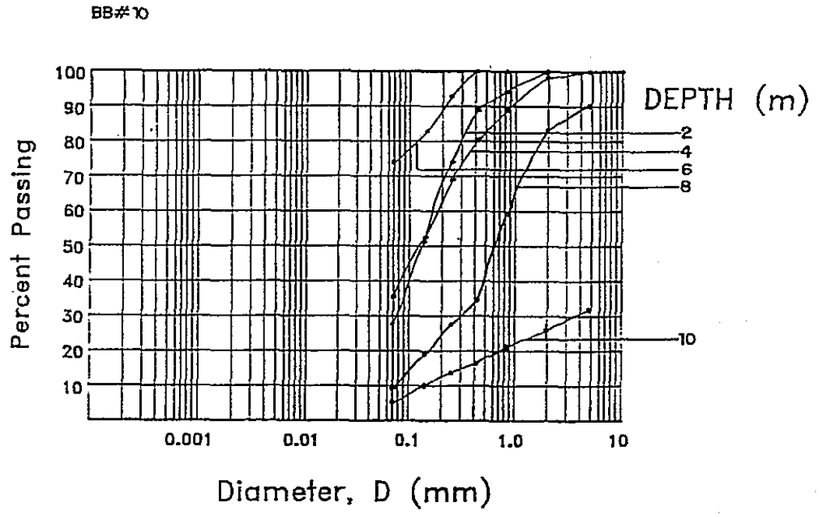
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT - TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-10, Km. 1395+181 BORING LOG

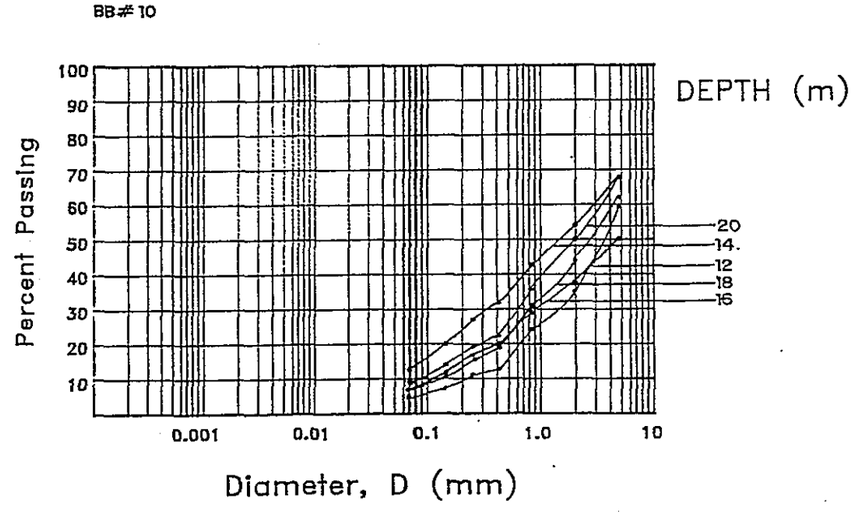
SHEET NO.
B - 35

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BB # 10

SAMPLE NO.	DEPTH (M)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 2	1.55	2.0	Silty Sand	13	20	25	19	6					100	94	89	74	51	28	2.69	SM
4	3.55	4.0	Clayey Sand	16	21	34	21	13				100	99	89	80	69	52	36	2.67	SC
6	5.55	6.0	Sandy Clay	3	36	60	30	30						100	100	93	83	74	2.63	CH
8	7.55	8.0	Sand	21	19	NL	NP	NP		100	94	90	83	59	35	28	19	9	2.70	SP
10	9.55	10.0	Sandy Gravel	51	6	NL	NP	NP	69	51	39	32	26	21	17	14	10	6	2.71	GP
12	11.55	12.0	Gravelly Sand	24	8	NL	NP	NP		100	81	59	35	24	13	11	8	5	2.71	SP
14	13.55	14.0	Gravelly Sand	35	12	NL	NP	NP		100	87	68	54	43	32	27	20	13	2.69	SP
16	15.55	16.0	Sandy Gravel	54	8	NL	NP	NP	100	88	71	50	38	29	20	17	12	7	2.66	GP
18	17.55	18.0	Gravelly Sand	60	9	NL	NP	NP	100	91	76	62	44	31	19	16	11	7	2.66	SP
20	19.55	20.0	Gravelly Sand	50	12	NL	NP	NP	100	90	82	68	50	36	23	19	14	9	2.69	SW





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-10, Km.1395+181 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-36

BORING LOG

BB-11

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
	GROUND SURFACE:		GROUND ELEVATION:				WATER TABLE : 5.50m.	
1–4		4.5	4.5		Clayey Sand	Brown	Dense	Fines of Low Plasticity with Traces of Gravel
5–7	▽	7.5	3.0		Silty Clay	Brown To Gray	Very Stiff	High Plasticity with Little Sand
8–19		19.0	11.5		Gravelly Sand	Gray	Very Dense	Non Plastic Fines
20–35								

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
0.70	SC	10	5 / 5 / 5
1.00–1.70		24	14 / 12 / 12
2.00	SC	23	6 / 11 / 12
2.70–3.00		24	9 / 11 / 13
3.70–4.00	CH	18	6 / 8 / 10
4.70–5.00		10	5 / 5 / 5
5.70–6.00	CH	5	2 / 3 / 2
6.70–7.00		29	15 / 15 / 14
7.70–8.00	SP	36	15 / 16 / 20
8.70–9.00		62	18 / 28 / 34
9.70–10.00	SP	63	11 / 27 / 36
10.70–11.00		61	24 / 28 / 33
11.70–12.00	SP	46	20 / 22 / 24
12.70–13.00		44	10 / 19 / 25
13.70–14.00	SP	70	28 / 34 / 36
14.20–15.00		61	61 / 15
15.70–16.00	GP	76	30 / 39 / 37
16.70–17.00		78	36 / 39 / 39
17.70–18.00	SP	70	29 / 33 / 37
18.70–19.00			

• (N-VALUE) 10 20 30 40 50
□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. —•—
L.L. —○—
P.L. —▲—
20 40 60 80 100 120 140

SPECIFIC GRAVITY —•— 2 3

GRAVEL
SAND
SILT
CLAY
20 40 60 80 %

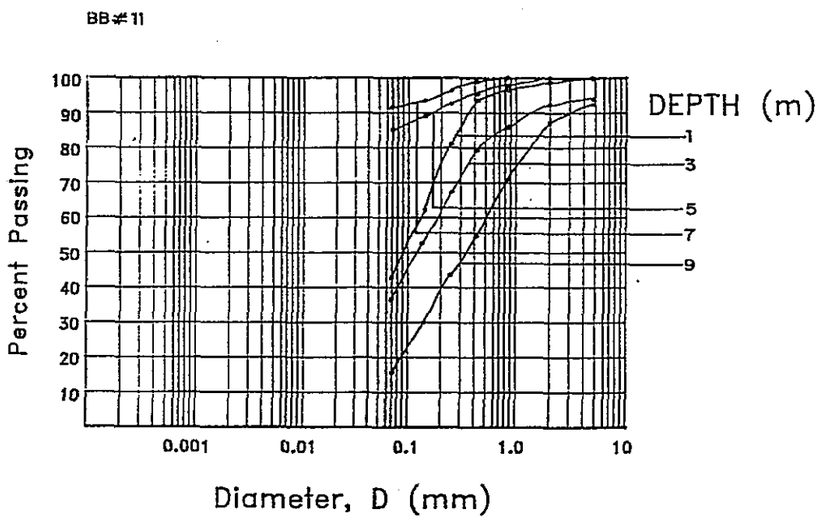
SCALE (m) 1–35

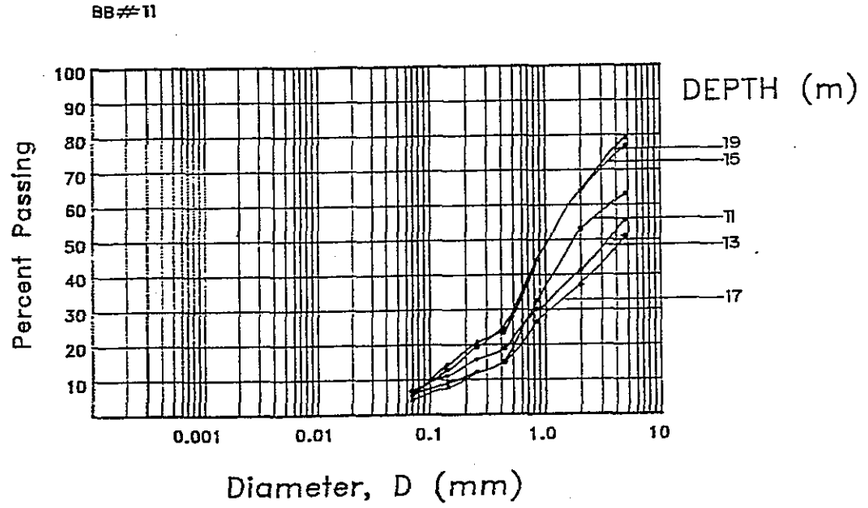
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-11, Km.1395+181 BORING LOG	SHEET NO. B-37

SUMMARY OF LABORATORY TEST RESULTS

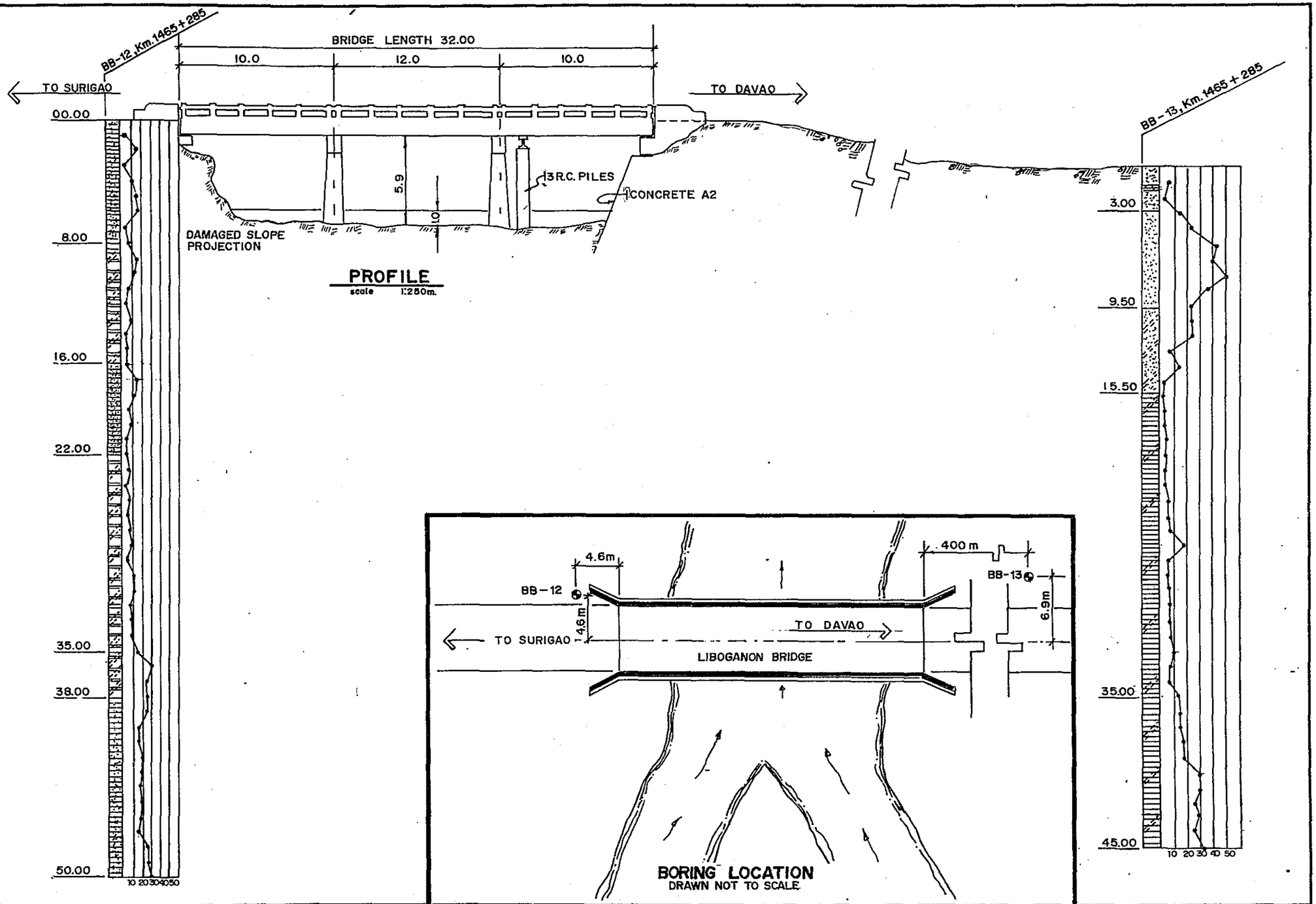
BORING NO. BB #11

SAMPLE NO.	DEPTH (M)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	0.55	1.0	Clayey Sand	10	24	33	21	12				100	99	97	94	81	62	43	2.68	SC
3	2.55	3.0	Clayey Sand	23	24	31	20	11		100	95	94	93	86	79	68	53	37	2.69	SC
5	4.55	5.0	Silty Clay	18	38	59	32	27					100	98	96	93	89	85	2.61	CH
7	6.55	7.0	Silty Clay	5	39	60	31	29						100	99	97	94	92	2.59	CH
9	8.55	9.0	Sand	36	16		NP			100	96	93	88	71	54	44	30	16	2.65	SP
11	10.55	11.00	Gravelly Sand	63	10		NP		79	79	71	63	53	32	15	12	9	6	2.67	SP
13	12.55	13.0	Gravelly Sand	46	8		NP			100	72	55	41	30	19	16	11	7	2.62	SP
15	14.55	15.0	Gravelly Sand	70	11		NP			100	87	78	64	44	24	19	13	6	2.69	SP
17	16.55	17.0	Sandy Gravel	76	6		NP		100	75	63	51	38	27	15	12	8	4	2.69	GP
19	18.55	19.00	Gravelly Sand	70			NP			100	88	79	64	44	25	21	14	7	2.63	SP





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-11, Km. 1395+181 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. B-38



PROFILE
scale 1:250m.

BORING LOCATION
DRAWN NOT TO SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-12,13, Km. 1465+285 BORING LOCATION	SHEET NO. B-39

BORING LOG

BB - 12

GROUND SURFACE: GROUND ELEVATION: WATER TABLE :6.70m.

DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
8.00	8.0		Sandy Clay	BROWN	Stiff	High Plasticity	CH	7	3 3 4
								13	5 6 7
						Low Plasticity	CL	7	3 3 4
								10	3 4 6
								11	5 5 6
								12	5 6 6
								5	2 2 3
								6	2 3 3
16.00	8.0		Silty Clay			High Plasticity	CH	12	4 5 7
					Firm			10	3 4 6
								9	3 4 5
								4	3 2 2
								7	4 3 4
								5	3 2 3
								6	4 3 3
								4	2 2 2
			Sandy Clay			Low Plastic Fines	CL	16	6 7 9
								12	6 6 6
								7	5 4 3
								9	4 4 5
								7	5 3 4
22.00	6.0							6	5 3 3
			Silty Clay	DARK GRAY	Firm to Stiff	High Plasticity	CH	6	4 3 3
								4	3 2 2
								7	4 3 4
								7	3 4 3
								8	5 4 4
								9	5 5 4
								9	5 4 5
								10	4 5 5
								10	5 5 5
								8	4 4 4
								9	4 5 4
								8	4 4 4
35.00	13.0						CL	14	5 7 7

STANDARD PENETRATION TEST OR CORE RECOVERY
• (N-VALUE) 10 20 30 40 50
□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100120140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

SCALE (m) 1 – 35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-12, Km. 1465 +285 BORING LOG

SHEET NO. B-40

BORING LOG

BB - 12

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		38.00	3.0		Silty Clay	DARK GRAY	Stiff to Very Stiff	Low Plastic Fines
		50.00	12.0		Sandy Clay			

GROUND SURFACE: GROUND ELEVATION: WATER TABLE :6.70m

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM 15 cm	15 cm	15 cm
35.7					
36.0		29	11	13	16
36.7		26	16	17	19
37.0		26	9	12	14
37.7					
38.0		24	10	12	12
38.7					
39.0		16	6	8	8
39.7					
40.0		15	8	7	8
40.7					
41.0		18	8	9	9
41.7					
42.0		14	9	7	7
42.7					
43.0	CL	16	8	7	9
43.7					
44.0		14	9	7	7
44.7					
45.0		16	8	9	7
45.7					
46.0		17	9	7	10
46.7					
47.0		25	9	12	13
47.7					
48.0		25	10	11	14
48.7					
49.0		30	12	16	14
49.7					
50.0					

• (N-VALUE) 10 20 30 40 50

□ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. L.L. P.L. 20 40 60 80 100120140

SPECIFIC GRAVITY 2 3

GRAVEL SAND SILT CLAY 20 40 60 80 %

SCALE (m) 1–35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-12, Km.1465+285 BORING LOG

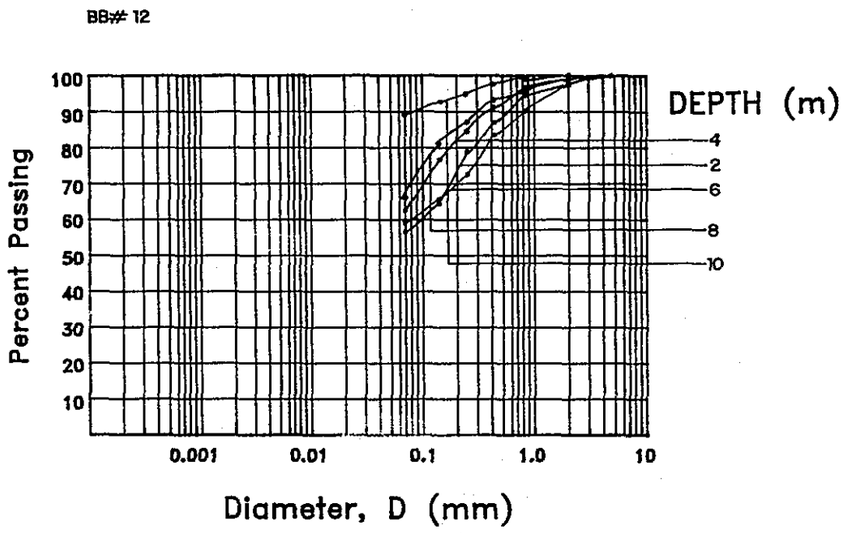
SHEET NO. B-41

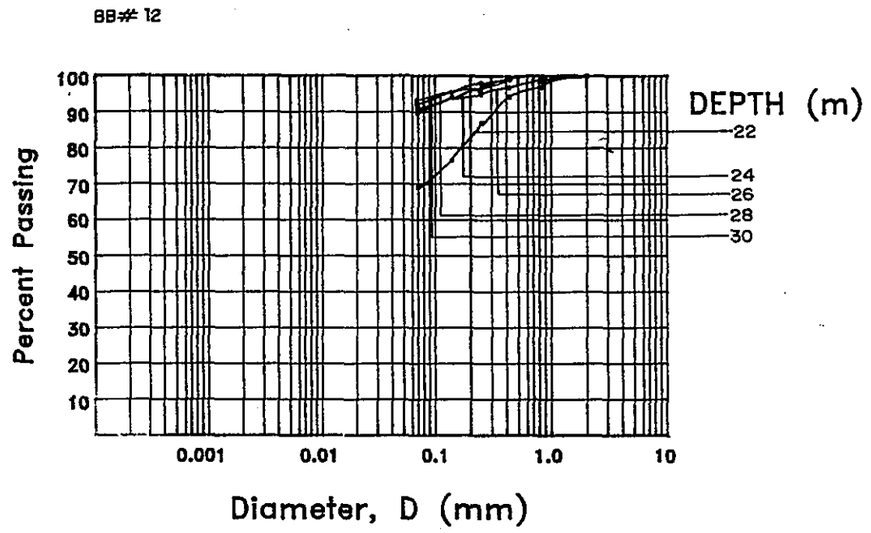
BORING NO. BB # 12

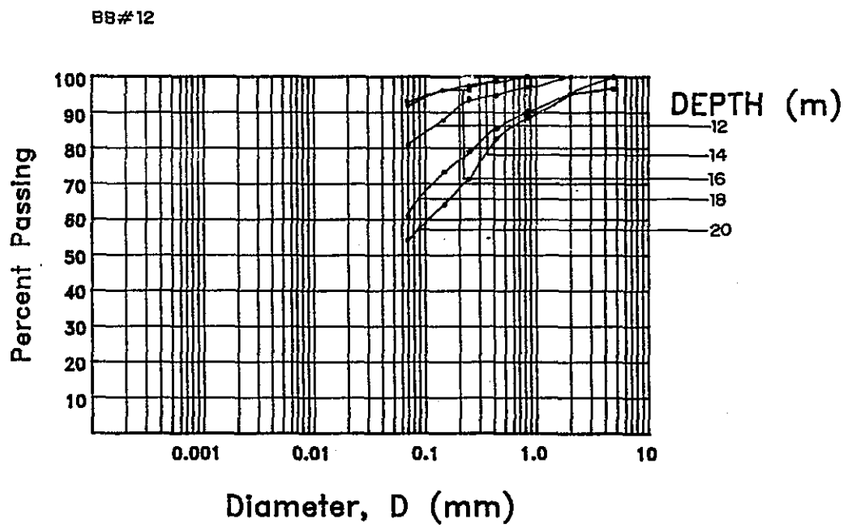
SAMPLE NO.	DEPTH (M)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
2	1.55	2.0	Sandy Clay	13	25.8	51	30	21				100	99	97	91	84	77	63	2.65	CH
4	3.55	4.0	Sandy Clay	10	31	47	28	19				100	98	95	88	79	64	57	2.68	CL
6	5.55	6.0	Sandy Clay	12	39	38	24	14				100	98	90	83	72	65	59	2.68	CL
8	7.55	8.0	Sandy Clay	6	70	40	23	17				100	99	96	93	87	81	66	2.60	CL
10	9.55	10.0	Silty Clay	10	67	61	31	30					100	99	98	95	93	89	2.59	CH
12	11.55	12.0	Silty Clay	4	67	57	28	29					100	97	95	94	88	81	2.59	CH
14	13.55	14.0	Silty Clay	5	45	77	35	42						100	99	98	96	93	2.61	CH
16	15.55	16.0	Silty Clay	4	45.5	71	32	39						100	99	97	96	92	2.61	CH
18	17.55	18.0	Sandy Clay	12	45	46	27	19				100	95	90	85	79	73	61	2.62	CL
20	19.55	20.0	Sandy Clay	9	45	33	21	12			100	97	95	89	83	71	64	54	2.67	CL
22	21.55	22.0	Sandy Clay	6	58	44	27	17					100	97	94	87	78	69	2.65	CL
24	23.55	24.0	Silty Clay	4	46	69	40	29						100	99	97	94	91	2.58	CH
26	25.55	26.0	Silty Clay	7	46	74	35	39					100	99	97	95	94	90	2.58	CH
28	27.55	28.0	Silty Clay	9	46.5	71	34	37						100	99	98	95	92	2.59	CH
30	29.55	30.0	Silty Clay	10	48	76	35	41					100	100	99	96	95	93	2.63	CH
32	31.55	32.0	Silty Clay	8	45	80	36	44						100	100	99	97	94	2.63	CH
34	33.55	34.0	Silty Clay	8	42	72	34	38						100	99	97	96	95	2.60	CH
38	37.55	38.0	Silty Clay	26	31	46	27	19					100	99	97	95	94	84	2.65	CL
40	39.55	40.0	Sandy Clay	16	41	49	28	21					100	98	96	89	83	77	2.66	CL
42	41.55	42.0	Sandy Clay	18	45	47	27	20					100	99	97	89	79	65	2.68	CL
44	43.55	44.0	Sandy Clay	16	33	39	25	14					100	99	94	87	75	67	2.68	CL
46	45.55	46.0	Sandy Clay	16	43	43	26	17				100	99	96	93	89	76	61	2.66	CL
48	47.55	48.0	Sandy Clay	25	32	33	21	12				100	99	97	91	81	69	54	2.69	CL
50	49.55	50.0	Sandy Clay	30	52	42	26	16				100	99	96	95	89	77	68	2.66	CL

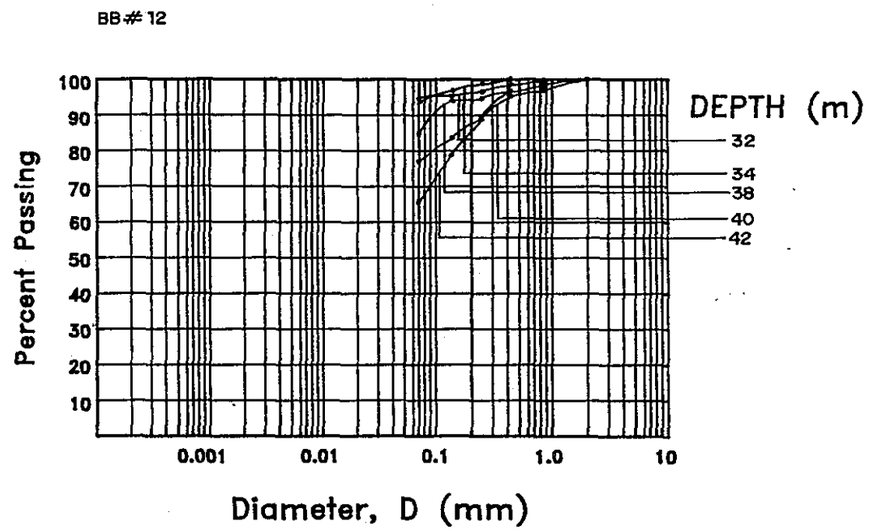
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-12, Km. 1465+285 SUMMARY OF LABORATORY TEST RESULTS

SHEET NO.
B-42



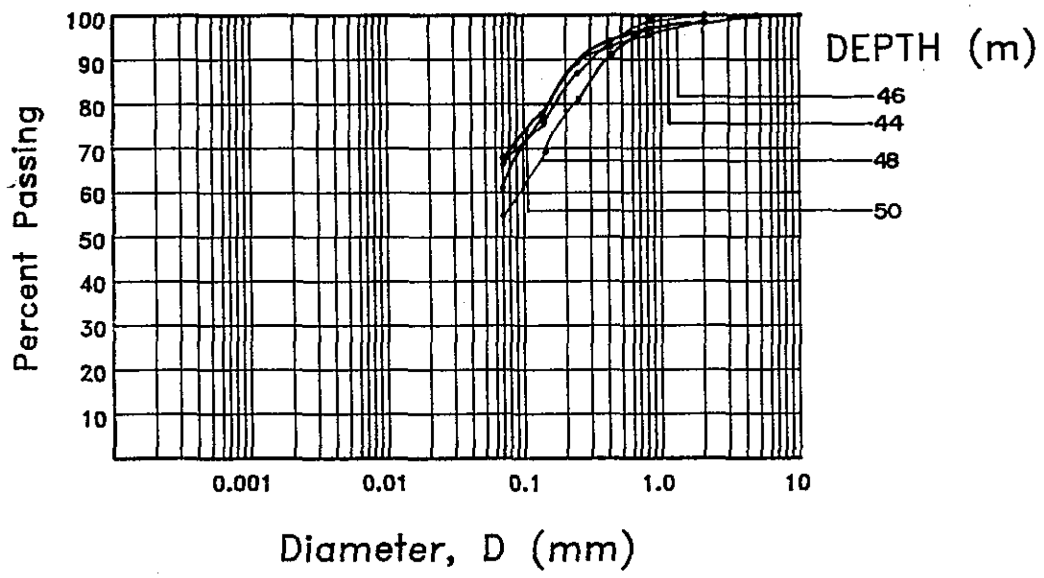


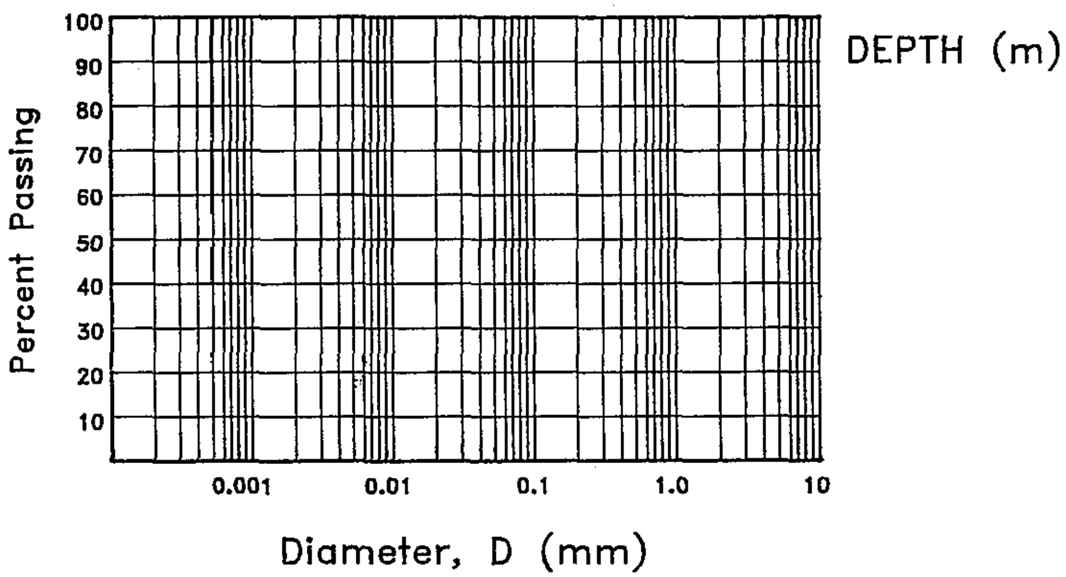


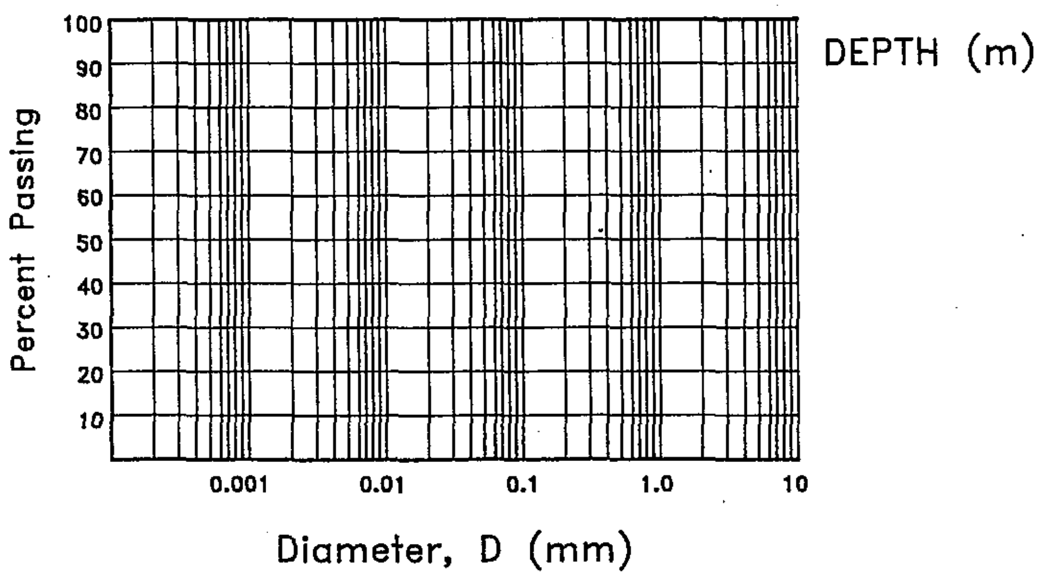


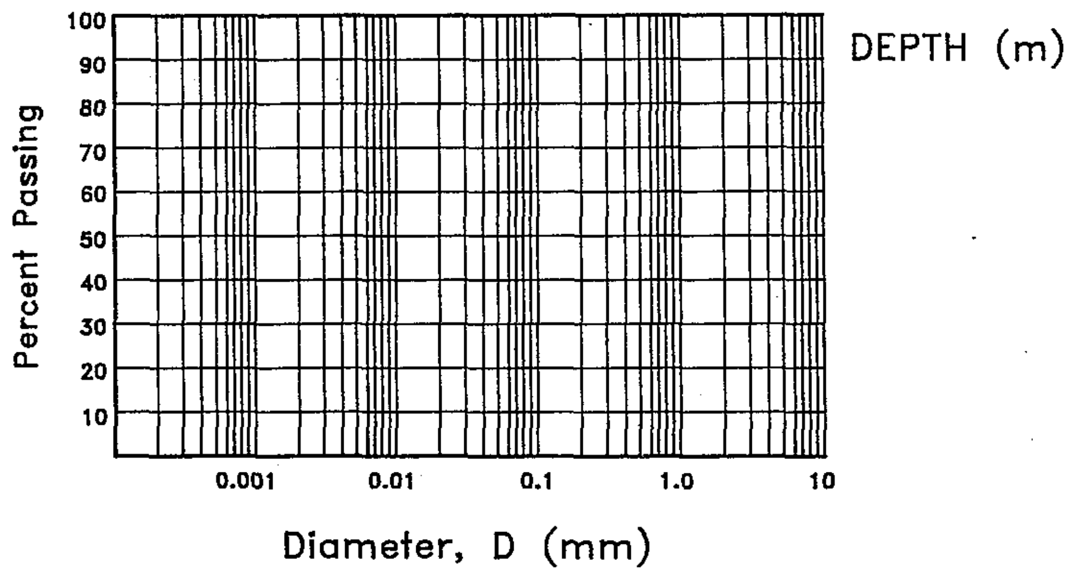
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-12, Km. 1465+285 SIEVE ANALYSIS GRAPH	SHEET NO. B-43

BB# 12









JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-12 Km. 1465+285 SIEVE ANALYSIS GRAPH	SHEET NO. B-44

BORING LOG

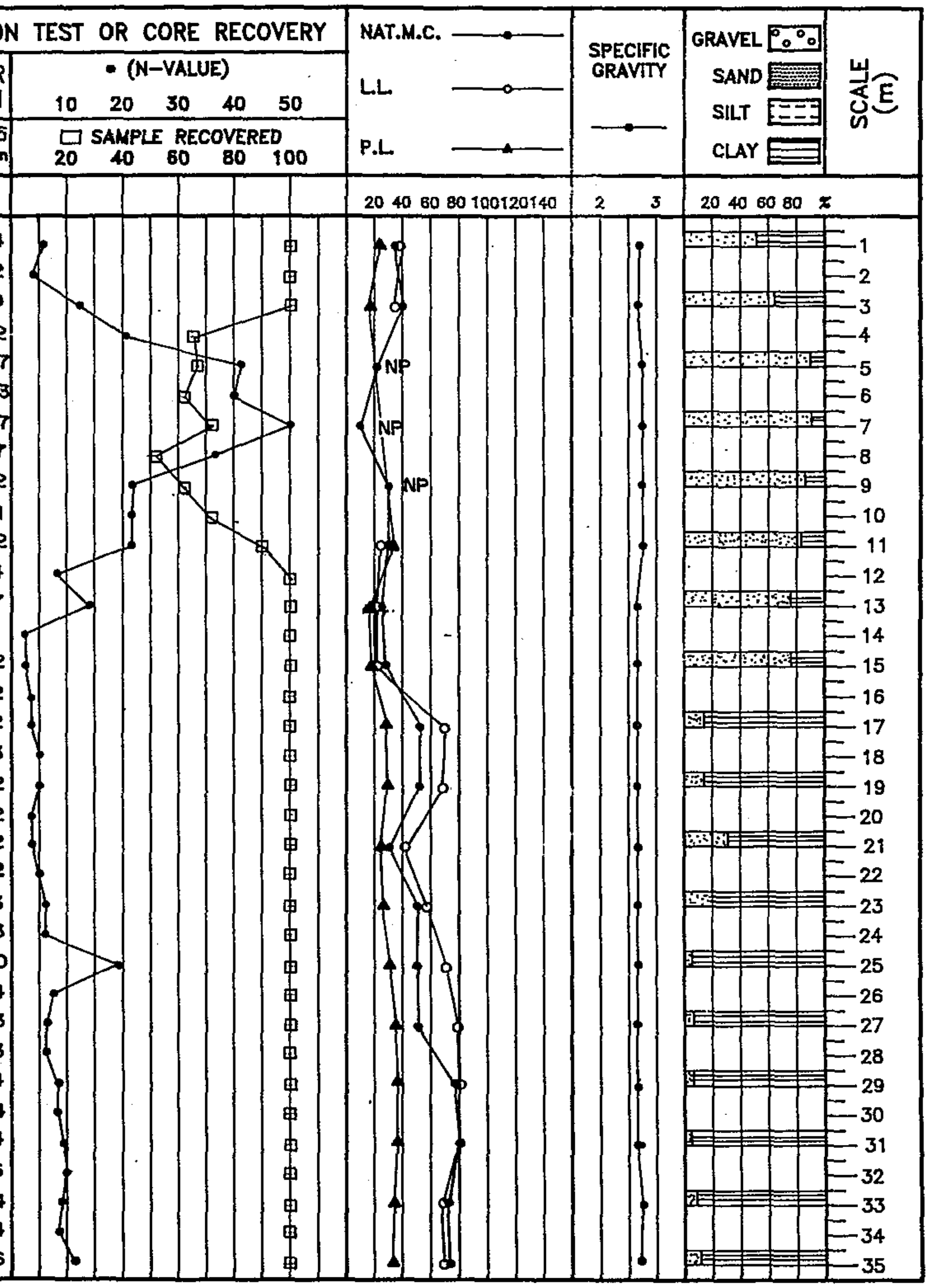
BB-13

GROUND SURFACE: GROUND ELEVATION: WATER TABLE : 3.40m.

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
0–3.0		3.0	3.0	Clayey Sand	Brown	Loose to Dense	Medium Plastic Fines
3.0–9.5		9.5	6.5	Sand		Medium Dense To Dense	Non Plastic Fine Sand
9.5–15.5		15.5	6.0	Silty Sand		Dense to Loose	Low Plastic Fines
15.5–35.0		35.0	19.5	Silty Clay	Dark Gray	Firm to Stiff	High Plasticity Fines with Traces of Sand

STANDARD PENETRATION TEST OR CORE RECOVERY

Scale (m)	Depth (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM: 15 cm	15 cm	15 cm
1	0.7	SC	6	2	2	4
2	1.0 / 1.7		4	2	2	2
3	2.0 / 2.7	SC	13	2	4	9
4	3.0 / 3.7		21	7	9	12
5	4.0 / 4.7	SP	42	9	15	37
6	5.0 / 5.7		40	10	17	23
7	6.0 / 6.7	SP	50	15	23	27
8	7.0 / 7.7		37	15	20	17
9	8.0 / 8.7	SP	22	14	10	12
10	9.0 / 9.7		22	8	11	11
11	10.0 / 10.7	SM	22	5	10	12
12	11.0 / 11.7		8	4	4	4
13	12.0 / 12.7	SM	14	6	7	7
14	13.0 / 13.7		3	3	2	1
15	14.0 / 14.7	SM	3	2	1	2
16	15.0 / 15.7		4	2	2	2
17	16.0 / 16.7	CH	4	2	2	2
18	17.0 / 17.7		5	3	2	3
19	18.0 / 18.7	CH	5	2	3	2
20	19.0 / 19.7		4	3	2	2
21	20.0 / 20.7	CL	4	2	2	2
22	21.0 / 21.7		5	2	3	2
23	22.0 / 22.7	CH	6	3	3	3
24	23.0 / 23.7		6	3	3	3
25	24.0 / 24.7	CH	19	6	9	10
26	25.0 / 25.7		7	4	3	4
27	26.0 / 26.7	CH	6	3	3	3
28	27.0 / 27.7		6	3	3	3
29	28.0 / 28.7	CH	8	4	4	4
30	29.0 / 29.7		8	4	4	4
31	30.0 / 30.7	CH	9	3	5	4
32	31.0 / 31.7		10	3	4	6
33	32.0 / 32.7	CH	9	4	5	4
34	33.0 / 33.7		8	3	4	4
35	34.0 / 34.7 / 35.0	CH	12	5	6	6



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-13, Km. 1465 + 285 BORING LOG	SHEET NO. B-45

BORING LOG

BB-13

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
		35.0	19.5		Silty Clay	Dark Gray	Stiff to Very Stiff	High Plasticity with Traces of Sand
		45.0	10.0					

GROUND SURFACE: GROUND ELEVATION: WATER TABLE : 3.40m.

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)
34.7			
35.0 / 35.7		15	7 / 7 / 8
36.0 / 36.7	CH	15	7 / 8 / 7
37.0 / 37.7		18	5 / 9 / 9
38.0 / 38.7	CH	18	6 / 8 / 10
39.0 / 39.7		30	11 / 15 / 15
40.0 / 40.7	CH	30	10 / 13 / 17
41.0 / 41.7		28	11 / 12 / 16
42.0 / 42.7	CH	29	12 / 13 / 16
43.0 / 43.7		27	9 / 14 / 13
44.0 / 44.7	CH	31	13 / 14 / 17
45.0			

• (N-VALUE) 10 20 30 40 50 — □ SAMPLE RECOVERED 20 40 60 80 100

NAT.M.C. — L.L. — P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

SCALE (m) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-13, Km. 1465+285 BORING LOG

SHEET NO. B-46

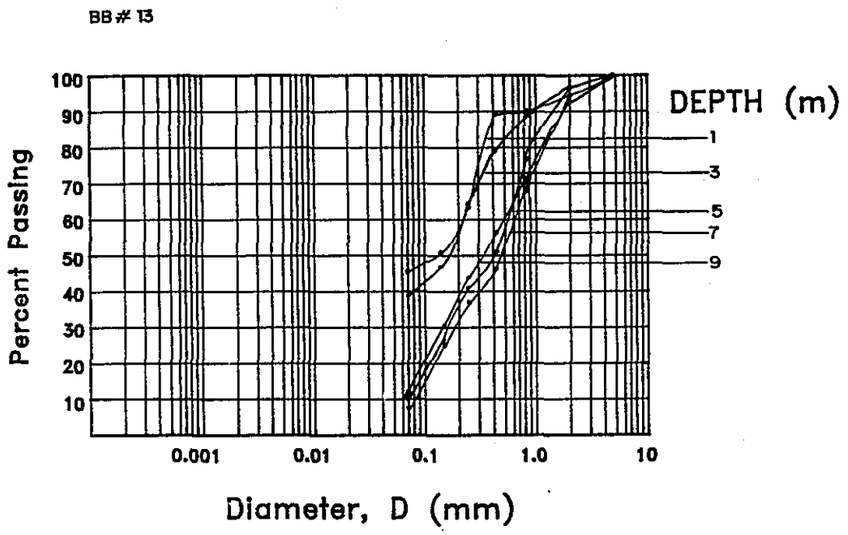
SUMMARY OF LABORATORY TEST RESULTS

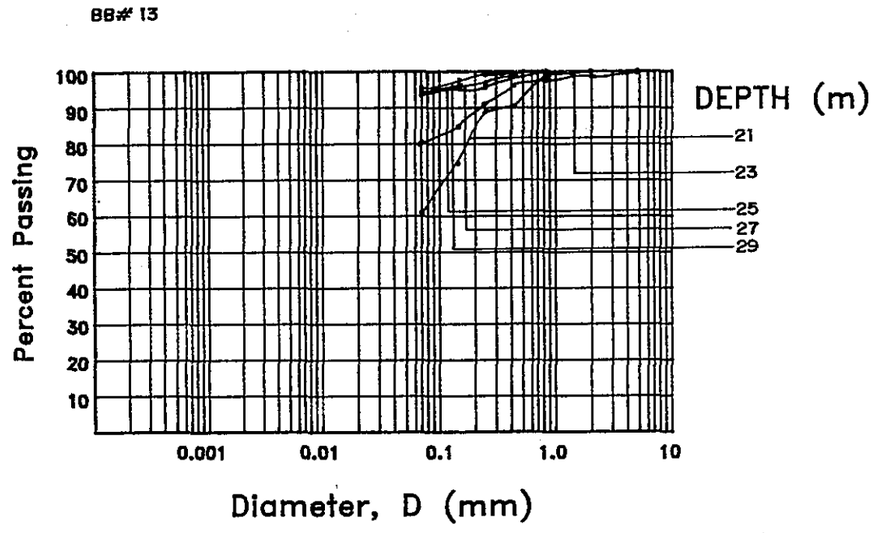
BORING NO. BB #13

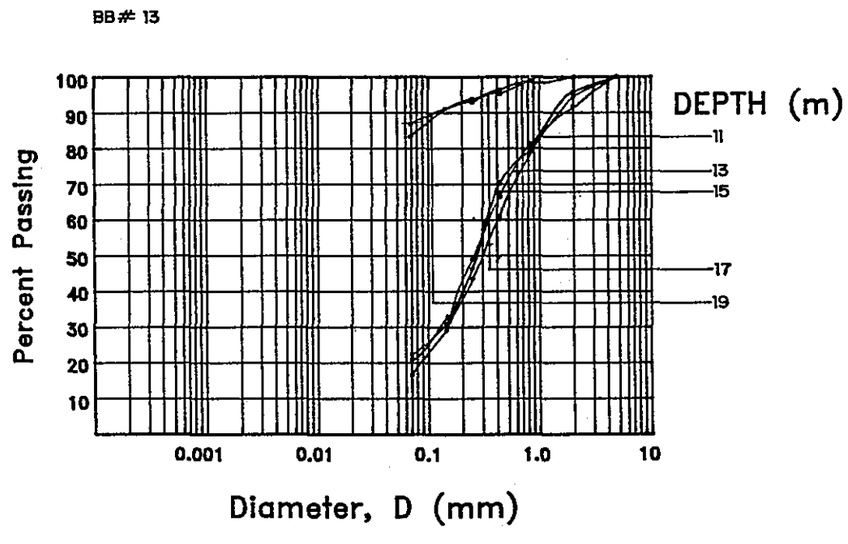
SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	0.55	1.00	Clayey Sand	6	32	39	23	16				100	94	90	89	63	51	46	2.67	SC
3	2.55	3.00	Clayey Sand	13	40	32	19	13				100	96	89	79	64	48	39	2.65	SC
5	4.55	5.00	Fine Sand	42	21	NL	NP	NP				100	96	77	51	41	27	10	2.69	SP
7	6.55	7.00	Fine Sand	50	16	NL	NP	NP				100	94	68	47	38	25	8	2.70	SP
9	8.55		Fine Sand	22	31	NL	NP	NP				100	93	71	57	44	30	12	2.71	SP
11	10.55	11.00	Silty Sand	22	32	27	23	4				100	94	79	60	43	29	17	2.72	SM
13	12.55	13.00	Silty Sand	14	29	24	19	5				100	92	81	67	49	31	23	2.68	SM
15	14.55	15.00	Silty Sand	3	34	22	18	4				100	96	79	70	47	33	21	2.64	SM
17	16.55	17.00	Silty Clay	4	54	67	33	34					100	99	97	94	91	83	2.64	CH
19	18.55	19.00	Silty Clay	5	53	65	30	35					100	99	96	93	91	87	2.62	CH
21	20.55	21.00	Sandy Clay	4	33	42	24	18					100	99	90	89	74	61	2.62	CL
23	22.55	23.00	Sandy Clay	6	51	59	28	31				100	99	98	97	91	84	80	2.60	CH
25	24.55	25.00	Silty Clay	19	50	71	32	39						100	99	98	97	95	2.59	CH
27	26.55	27.00	Silty Clay	6	54	77	36	41						100	99	97	96	94	2.59	CH
29	28.55	29.00	Silty Clay	8	50	79	38	41						100	99	99	98	97	2.61	CH
31	30.55	31.00	Silty Clay	9	56	80	37	43						100	100	99	97	96	2.61	CH
33	32.55	33.00	Silty Clay	9	52	72	35	37						100	99	98	96	94	2.66	CH
35	34.55	35.00	Silty Clay	12	49	77	37	40						100	99	98	97	91	2.65	CH
37	36.55	37.00	Silty Clay	15	48	71	33	38						100	99	97	96	93	2.67	CH
39	38.55	39.00	Silty Clay	18	51	70	31	39						100	99	98	96	90	2.67	CH
41	40.55	41.00	Silty Clay	30	52	79	38	41						100	100	98	97	96	2.60	CH
43	42.55	43.00	Silty Clay	29	50	80	37	43						100	100	99	98	97	2.62	CH
45	44.55	45.00	Silty Clay	31	62	76	37	39						100	100	99	98	96	2.64	CH

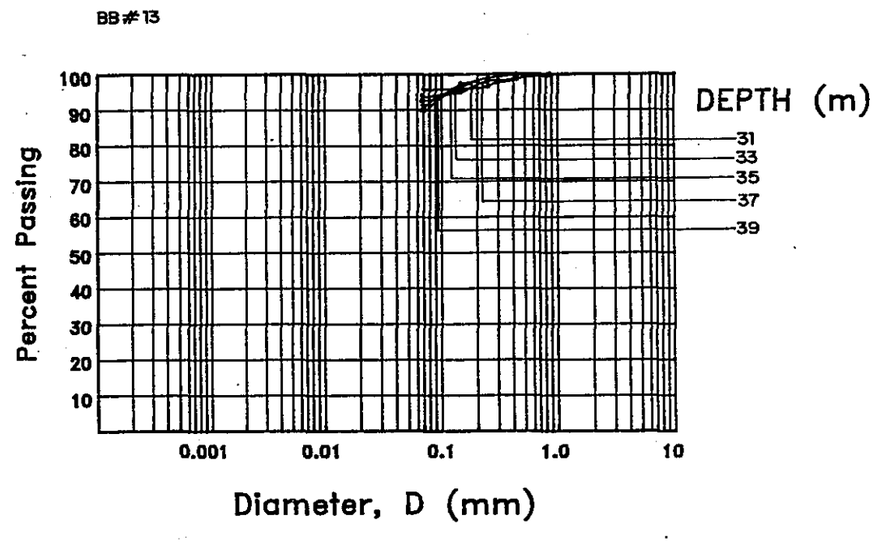
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-13, Km. 1465+285 SUMMARY OF LABORATORY TEST RESULTS

SHEET NO.
B - 47

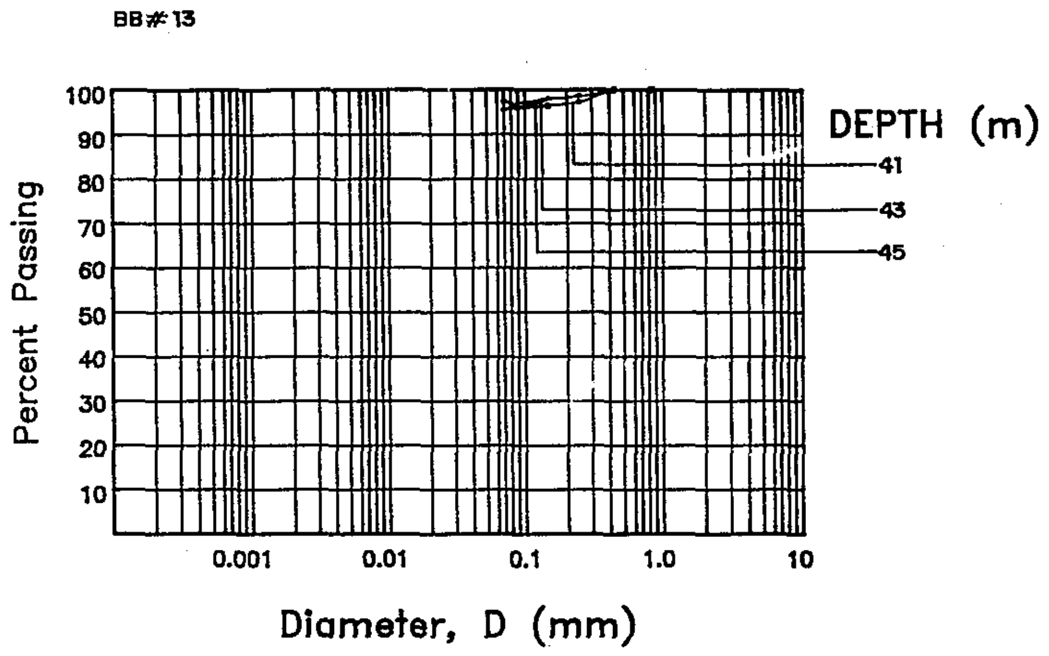


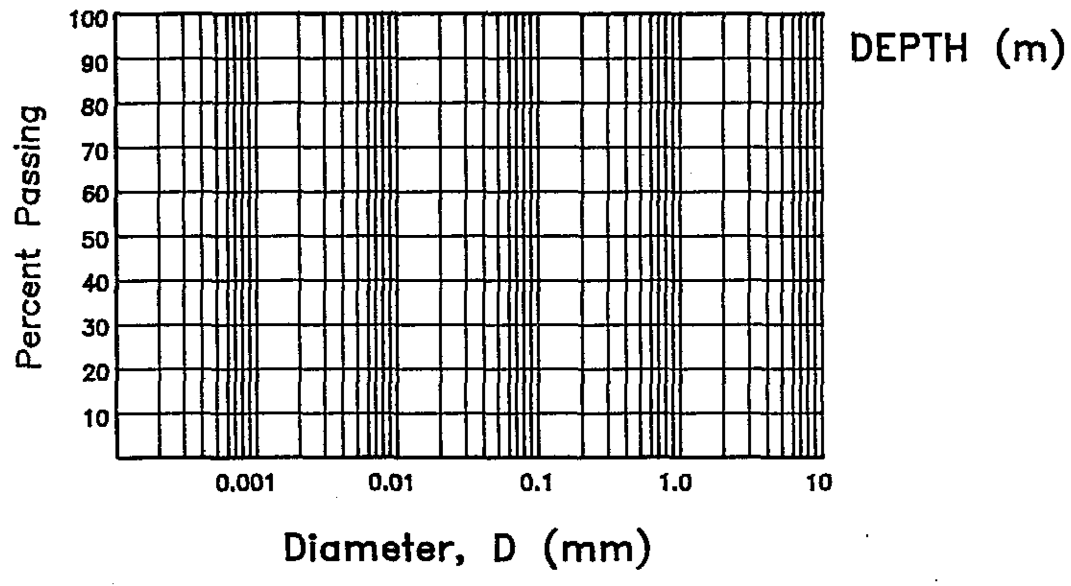


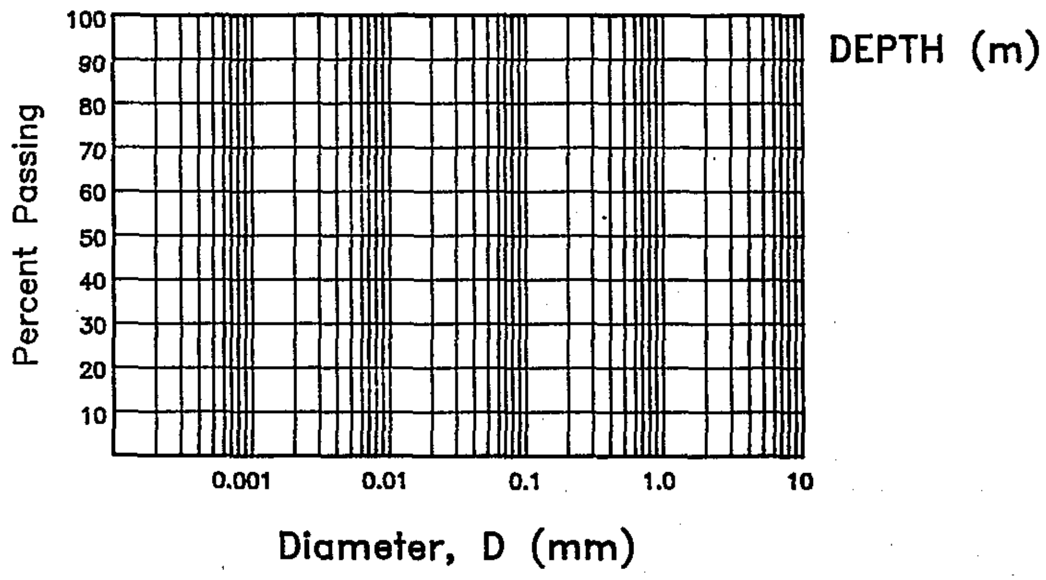


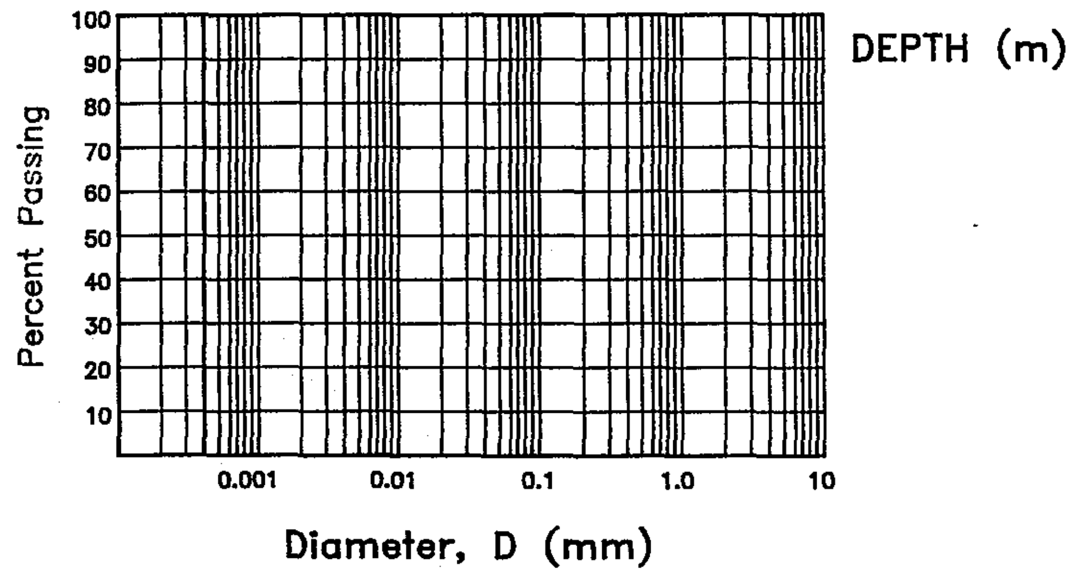


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-13, Km. 1465+285 SIEVE ANALYSIS GRAPH	SHEET NO. B-48





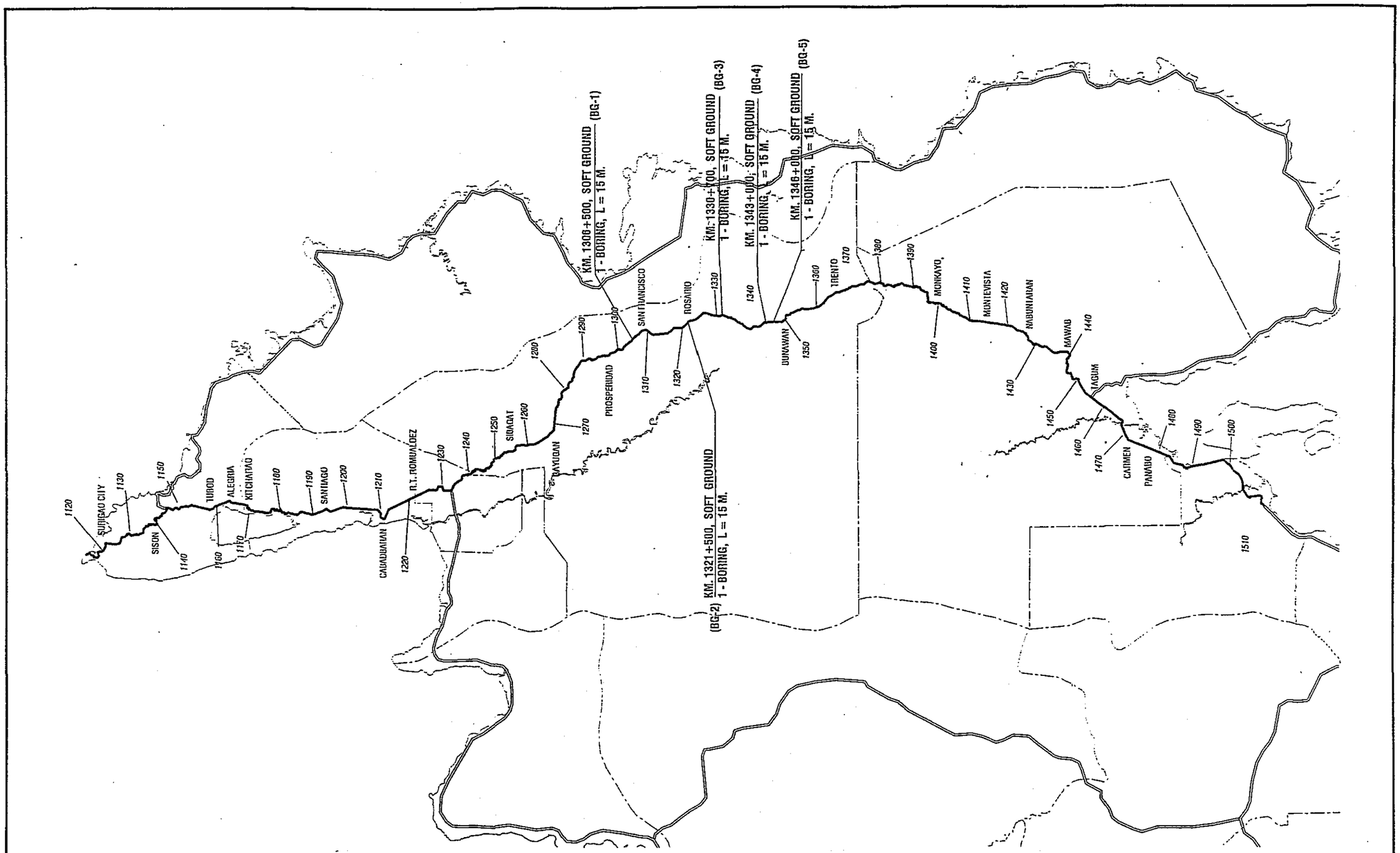




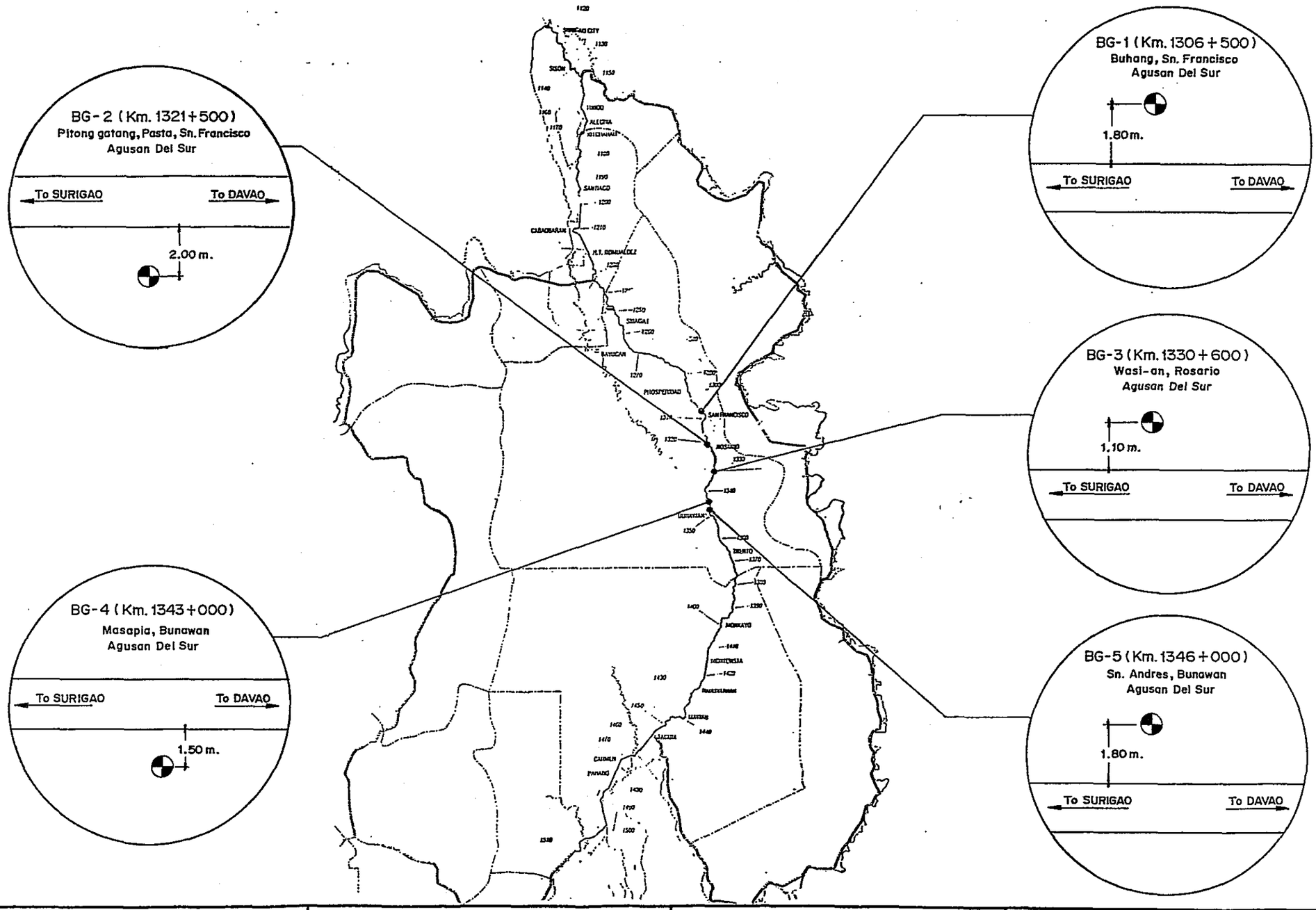
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BB-13, Km. 1465+285 SIEVE ANALYSIS GRAPH	SHEET NO. B-49

3.GEO-TECHNICAL INVESTIGATION

— SOFT GROUND SITES —



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	GEOTECHNICAL SURVEY LOCATION FOR SOFTGROUND SHEET NO. G – 1



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-1, 2, 3, 4 & 5 BORING LOCATION	SHEET NO. G-2

BORING LOG

BG-1

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:				GROUND ELEVATION:			WATER TABLE :-0.40 m	
1		.90	.90		Silty Clay	Light Gray	Soft	Probable Fill Materials.
2		1.50			Silty Clay with Presence of Slightly Organic and decayed Wood Fibers			
3			3.50			Dark Brown	Very Soft	
4								
5		5.00					Soft to Mid. Stiff	
6			2.00		Silty Clay	Gray		
7		7.00						
8								
9								
10								
11			8.45		Clayey Silt	Gray	Mid. Stiff to Stiff	
12								
13								
14								
15		15.45						
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100
1.15				
1.45	CL	2	1 1 1	
2.15	CL OL		Pressed	Pressed Shelby Tube
2.45	CL OL	1	1 1	
3.15	CL OL		Pressed	Pressed Shelby Tube
3.45	CL	1	1 1 1	
4.15		4	1 2 2	
4.45	CL	7	2 3 4	
5.15		10	3 4 6	
5.45	MH	12	4 5 7	
6.15		12	3 5 7	
6.45	MH	11	4 5 6	
7.15		13	5 6 7	
7.45	MH	12	4 6 6	
8.15			No Penetration	
8.45	MH	15	6 7 8	
9.15				
9.45				
10.15				
10.45				
11.15				
11.45				
12.15				
12.45				
13.15				
13.45				
14.15				
14.45				
15.15				
15.45				

Coring

NAT.M.C. — L.L. — P.L.

20 40 60 80 100 120 140

SPECIFIC GRAVITY

2 3

GRAVEL / SAND / SILT / CLAY

20 40 60 80 %

SCALE (m)

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-1, Km. 1306+500 BORING LOG

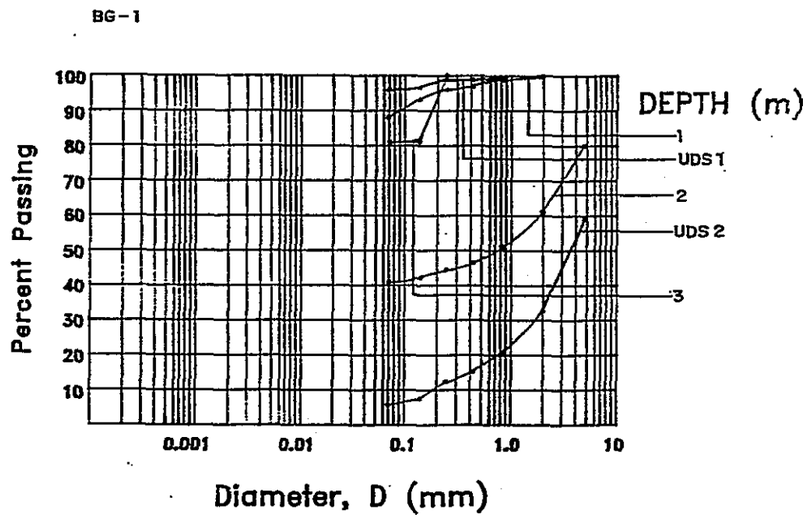
SHEET NO.

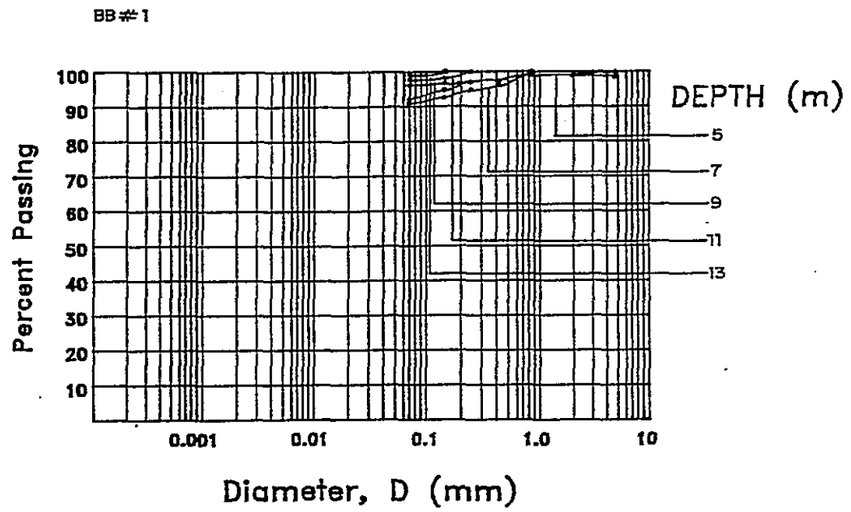
G - 3

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BG # 1

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.00	1.45	Silty Clay	2	46.64	37	23	14					100	99	98	97	93	88	2.63	CL
UDS 1	2.00	2.45	Silty Clay and Wood Fibers		157.79	32	23	9					100	99	99	99	97	97	2.64	CL-OL
SS 2	3.00	3.45	Sandy Clayey Silt and Wood Fibers	1	231.24	43	37	6			100	80	61	51	47	45	42	41	2.58	CL-OL
UDS 2	4.00	4.45	Silty Clay and Wood Fiber		229.45	37	31	6			100	59	33	21	15	12	8	6	2.66	CL-OL
SS 3	5.00	5.45	Silty Clay	1	49.29	39	19	20								100	81	81	2.59	CL
SS 5	7.00	7.45	Silty Clay	7	64.76	47	24	23				100	99	99	98	98	95	92	2.62	CL
SS 7	9.00	9.45	Clayey Silt	12	69.51	55	35	20						100	97	95	93	91	2.62	MH
SS 9	11.00	11.45	Clayey Silt	11	71.02	60	32	28			100	99	99	99	98	98	97	97	2.68	MH
SS 11	13.00	13.45	Clayey Silt	12	88.71	68	35	33								100	98	98	2.70	MH
SS13	15.00	15.45	Claye Silt	15	73.44	62	32	30									100	99	2.68	MH

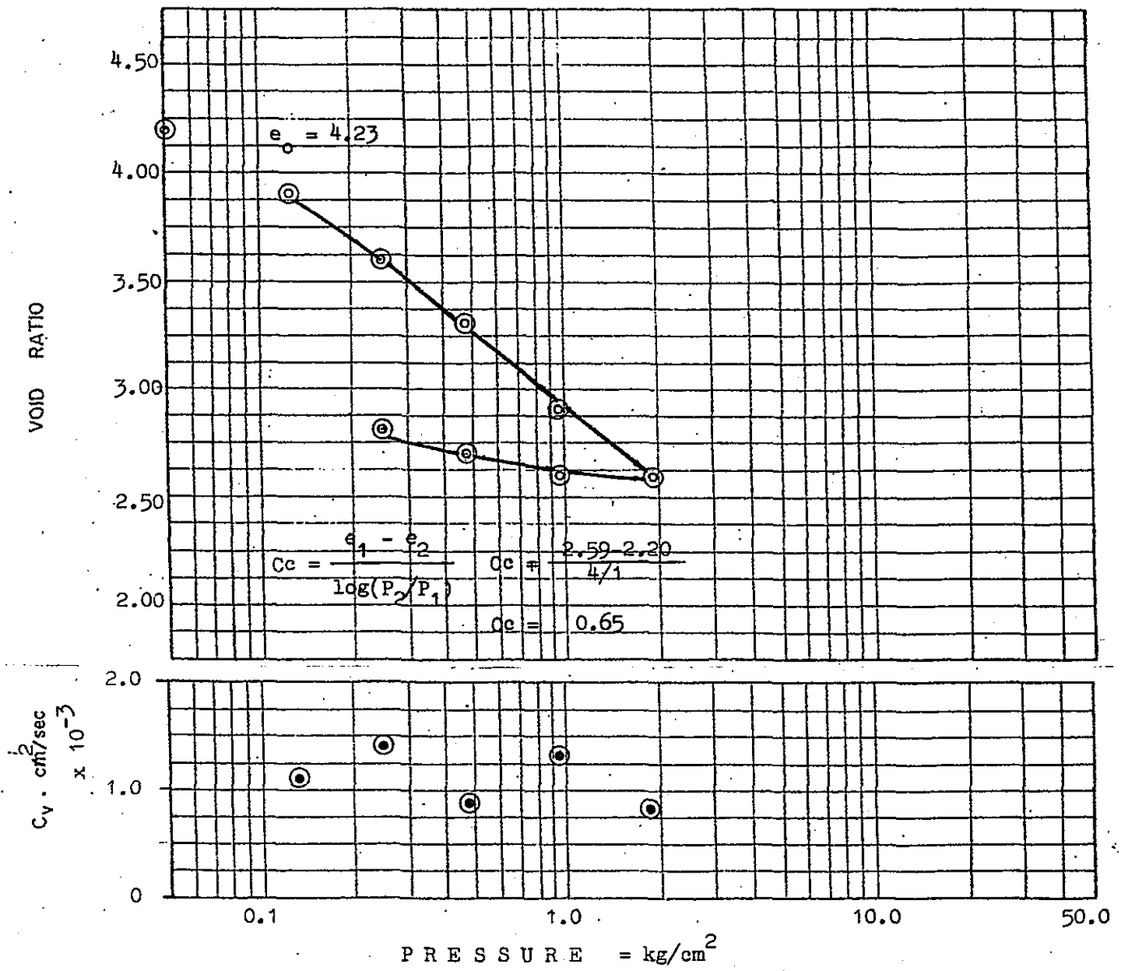




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-1, Km. 1306+500 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. G-4

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-1 (UDS-1)	2.00-2.45 m	October 01, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Dark brown silty CLAY with wood fibers.		CL-OL

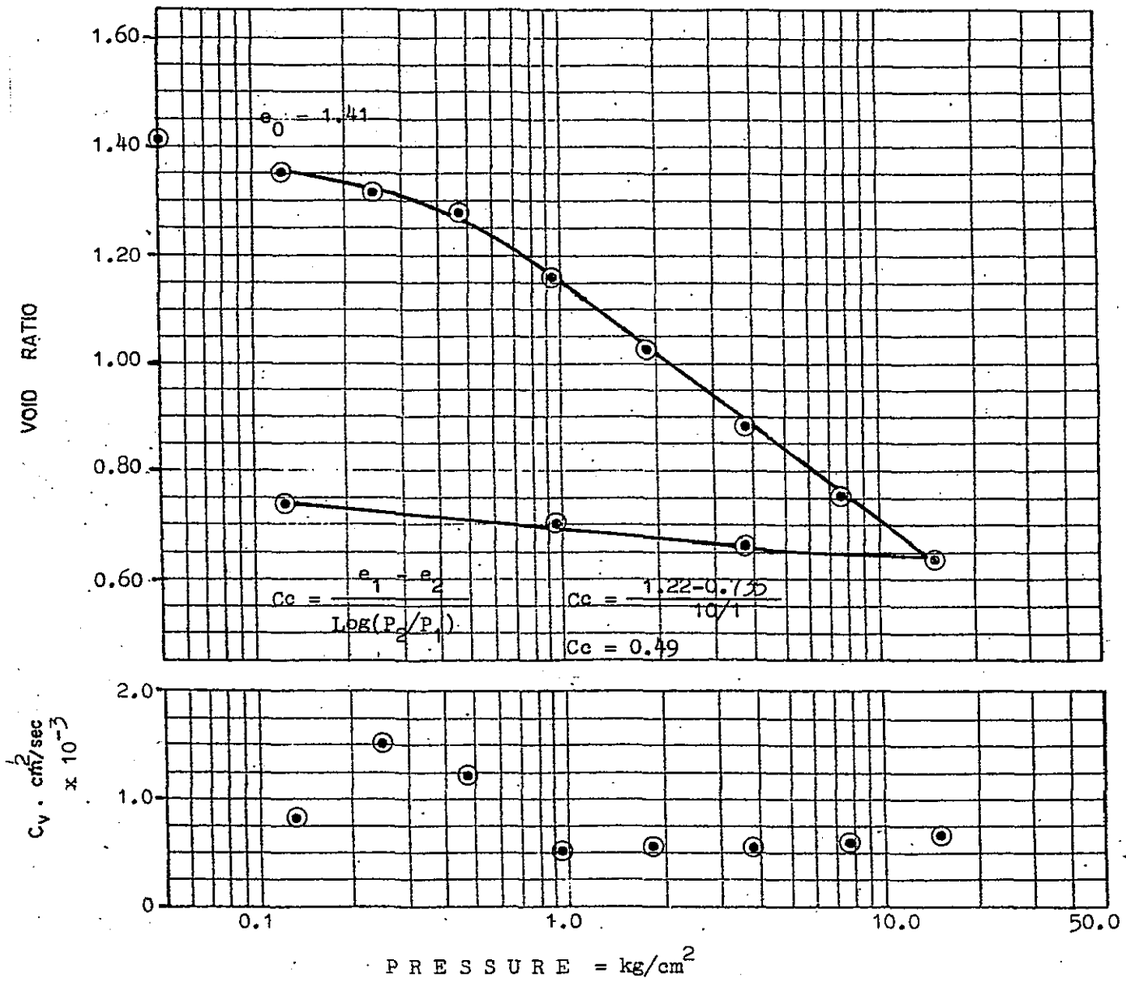
CONSOLIDATION TEST



SOIL DESCRIPTION Dark brown silty CLAY with wood fibers		INITIAL	FINAL
LIQUID LIMIT 32	HEIGHT (cm)	1.91	1.45
PLASTIC LIMIT 23	WATER CONTENT (%)	157.79	104.62
PLASTICITY INDEX 9	DRY UNIT WEIGHT (g/cc)	0.50	0.73
SPECIFIC GRAVITY 2.64	VOID RATIO	4.23	0.56
PRECON. PRESSURE kg/cm²	SATURATION (%)	96.99	101.52

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-1 (UDS-2)	4.00-4.45 m	September 23, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Light gray silty CLAY with wood fibers.		CL-OL

CONSOLIDATION TEST

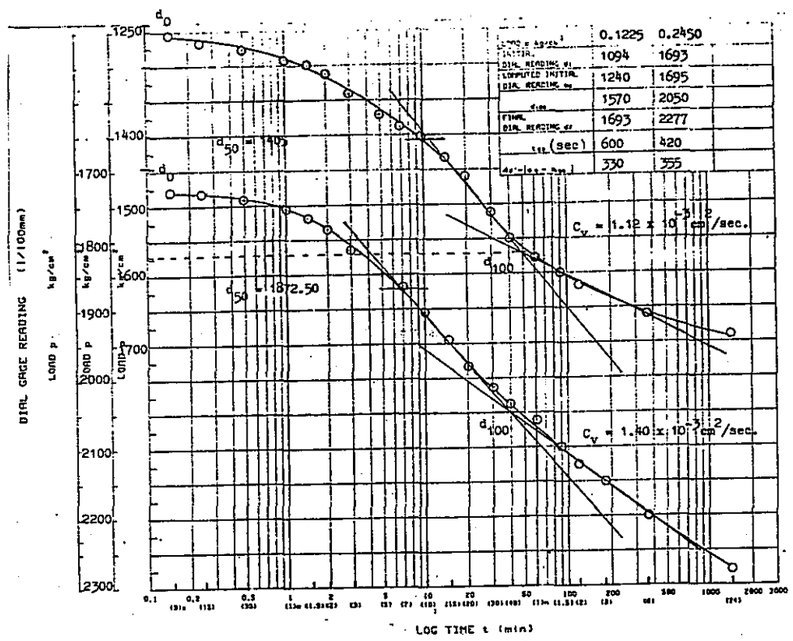


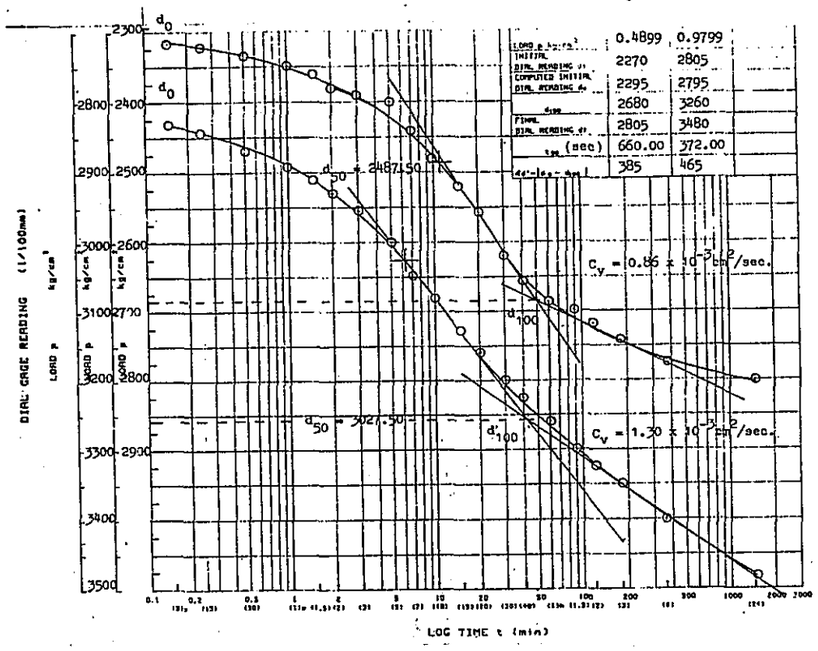
SOIL DESCRIPTION Light gray silty CLAY with wood fibers		INITIAL	FINAL
LIQUID LIMIT 37	HEIGHT (cm)	2.00	1,17
PLASTIC LIMIT 31	WATER CONTENT (%)	91.10	34.00
PLASTICITY INDEX 6	DRY UNIT WEIGHT (g/cc)	1.10	1.88
SPECIFIC GRAVITY 2.64	VOID RATIO	1.41	0.64
PRECON. PRESSURE kg/cm² = 0.40	SATURATION (%)	91.10	91.10

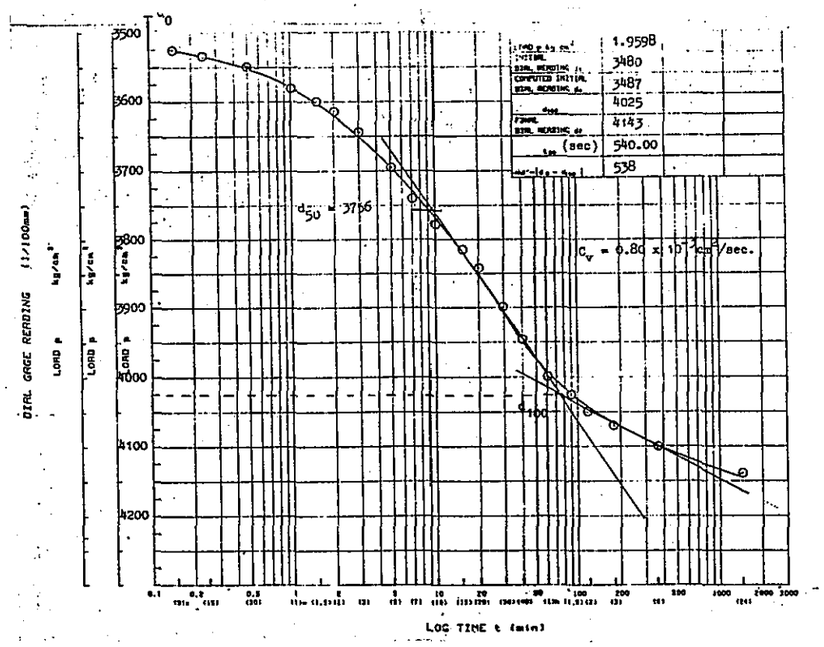
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G – 5

SAMPLE NO:	DEPTH:
BG-1 (UDS-1)	2.00-2.45 m
SAMPLE DESCRIPTION:	
Dark brown silty CLAY with wood fibers.	

DIAL READING VS. LOG TIME CURVE



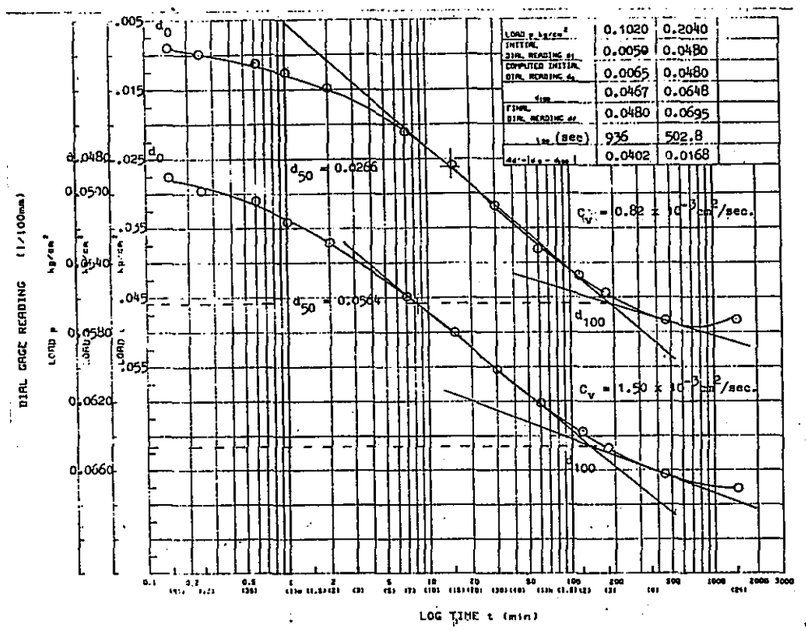


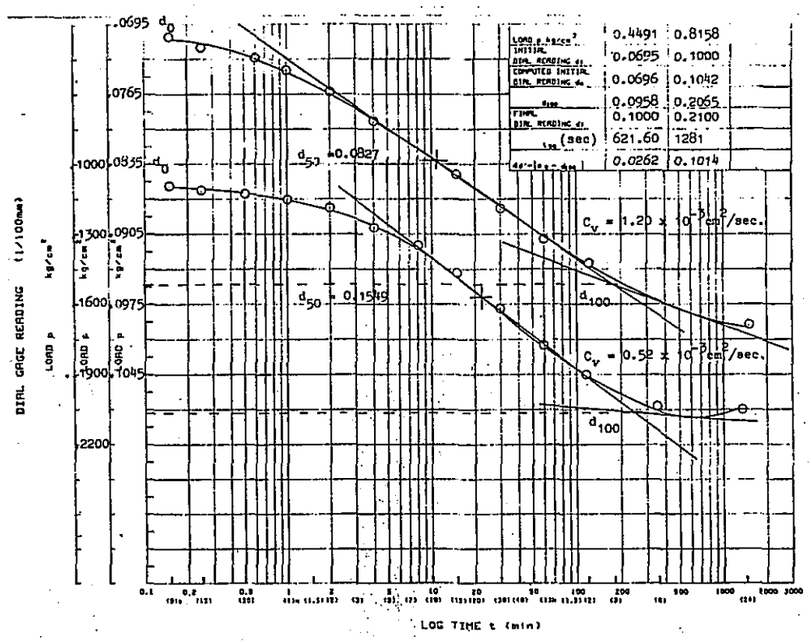


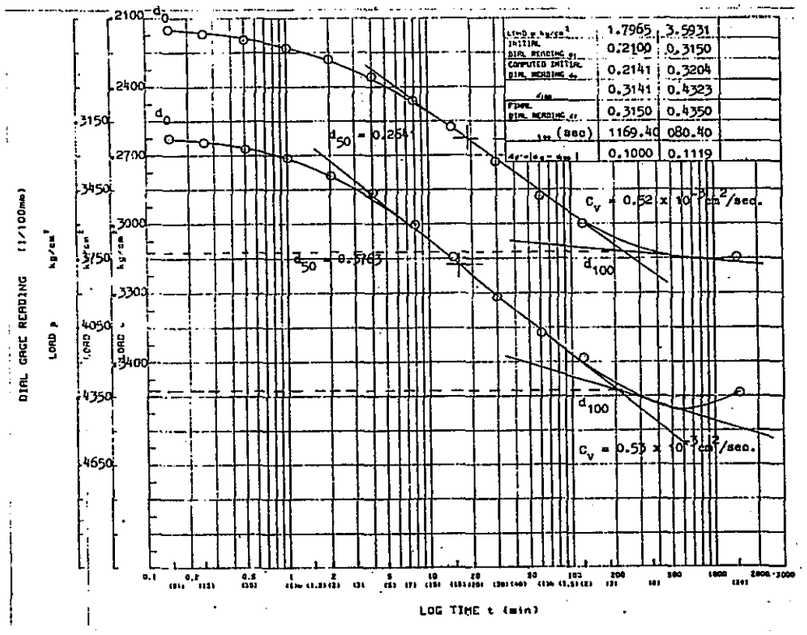
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G - 6

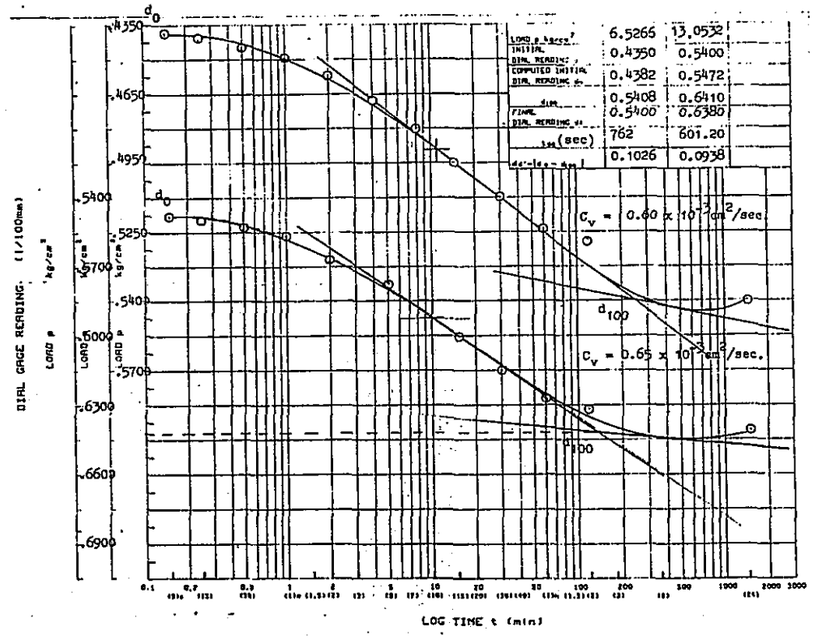
SAMPLE NO:	DEPTH:
BG-1 (UDS-2)	4.00-4.45 m
SAMPLE DESCRIPTION:	
Light gray silty CLAY with wood fibers.	

DIAL READING VS. LOG TIME CURVE









JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: **FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT** (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G – 7

BORING LOG

BG-2

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
GROUND SURFACE:					GROUND ELEVATION:		WATER TABLE :	
1		1.80	1.80		Gravel and Sand	Gray	Loose	Probable Fill Materials
2		3.15	1.35		Clay	Gray	Very Soft	
3								
4					Clay with Presence of Slightly Organic and Decayed Wood Fibers	Dark Brown to Black	Very Soft	
5								
6								
7		8.00	4.85					
8								
9					Clayey Silt and Silty Clay	Gray	Med. Stiff to Very Stiff	
10								
11								
12								
13								
14								
15		15.45	7.45					
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100
1.15	SM	7	4 4 3	
1.45 / 2.15	CH		Pressed	Pressed Shelby Tube
2.45 / 3.15	CL OL		Wt of Hammer	
3.45 / 4.15	CL OL		Pressed	Pressed Shelby Tube
4.45 / 5.15	CL OL	2	1 1 1	
5.45 / 6.15	CL OL		Wt of Hammer	
6.45 / 7.15	CL OL		Wt of Hammer	
7.45 / 8.15		6	2 3 3	
8.45 / 9.15	MH	14	4 6 8	
9.45 / 10.15		16	5 7 9	
10.45 / 11.15	MH	17	5 7 10	
11.45 / 12.15		14	4 7 7	
12.45 / 13.15	CH	14	4 7 7	
13.45 / 14.15		16	5 7 8	
14.45 / 15.15	CH	14	4 7 7	
15.45				

NAT.M.C. / L.L. / P.L. — 20 40 60 80 100 120 140

SPECIFIC GRAVITY — 2 3

GRAVEL / SAND / SILT / CLAY — 20 40 60 80 %

Wood Fibers

Wood Fibers

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-2, Km. 1321+500 BORING LOG

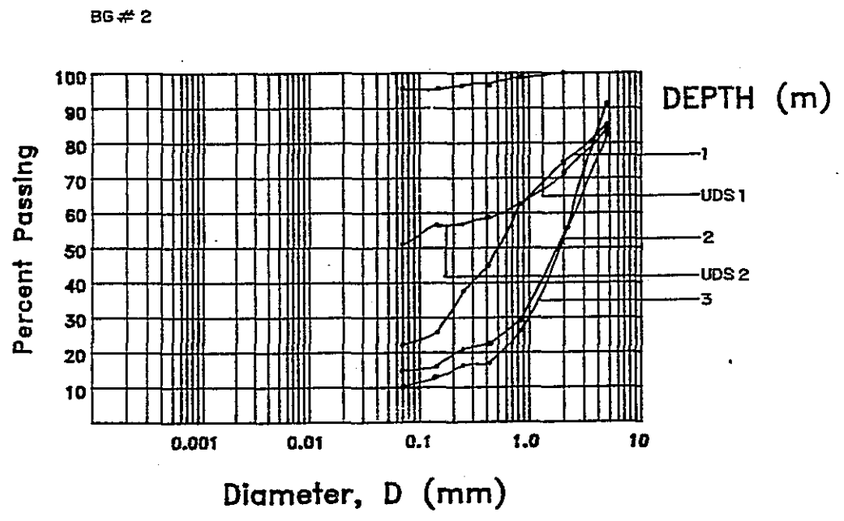
SHEET NO.

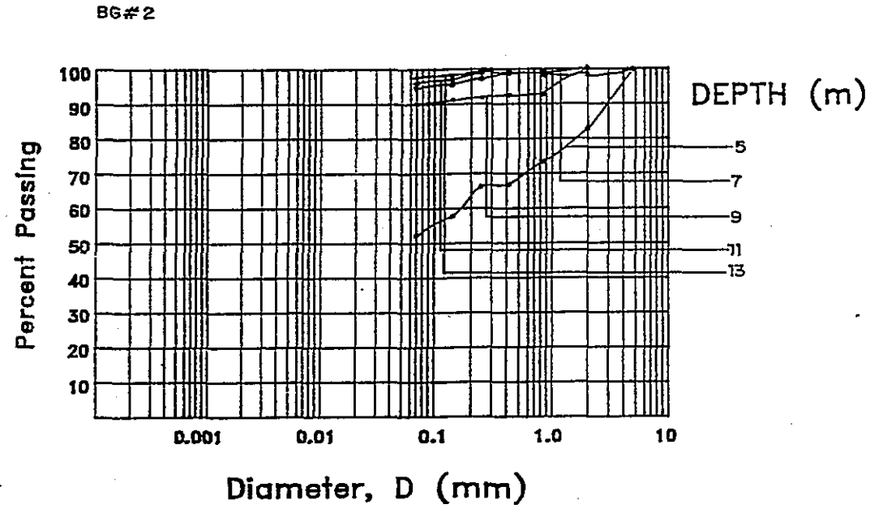
G - 8

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BG# 2

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.00	1.45	Silty Sand	7	41.87	NP	NP	NP			100	85	74	63	45	38	26	22	2.65	SM
UDS 1	2.00	2.45	Clay		57.59	56	27	29					100	99	97	97	96	96	2.68	CH
SS 2	3.00	3.45	Clay with Wood Fibers		174.38	44	39	5			100	91	55	29	22	21	16	15	2.57	CL-OL
UDS 2	4.00	4.45	Sandy Silty Clay		249.70	42	23	19			100	84	71	63	59	57	57	51	2.52	CL-OL
SS 3	5.00	5.45	Clay with Wood Fibers	2	290.77	46	34	12			100	83	55	26	17	17	13	10	2.57	CL-OL
SS 5	7.00	7.45	Clay with Wood Fibers		174.38	42	34	8				100	83	73	67	67	58	52	2.59	CL-OL
SS 7	9.00	9.45	Clayey Silt	14	75.96	63	32	31					100	99	99	99	98	97	2.65	MH
SS 9	11.00	11.45	Clayey Silt	17	76.12	57	33	24					100	93	93	92	91	90	2.63	MH
SS 11	13.00	13.45	Clay	14	66.08	52	27	25				100	99	99	99	98	97	95	2.65	CH
SS 13	15.00	15.45	Clay	14	52.87	59	29	30					100	99	99	99	98	98	2.66	CH

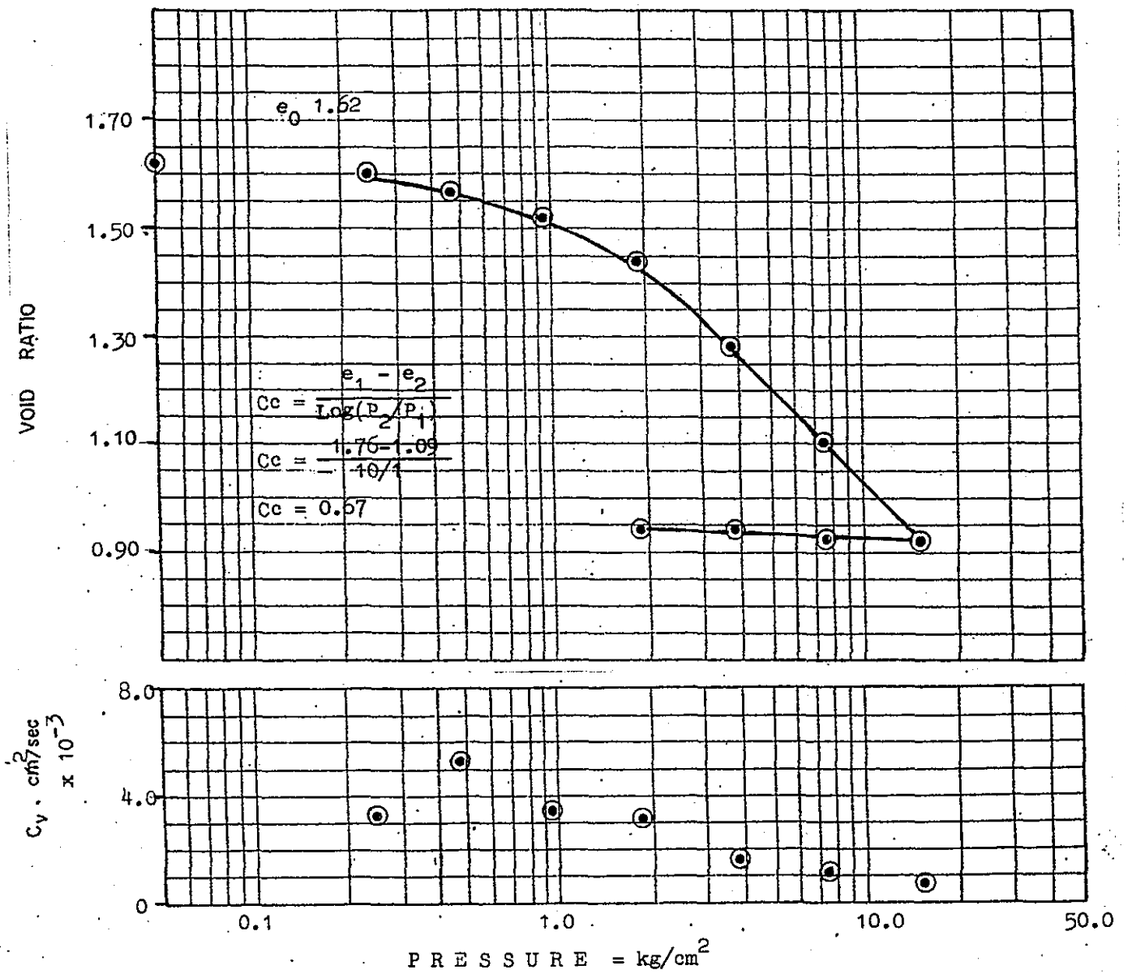




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-2, Km.1321+500 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. G-9

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-2 (UDS-1)	2.00-2.45	September 27, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Gray CLAY		CH

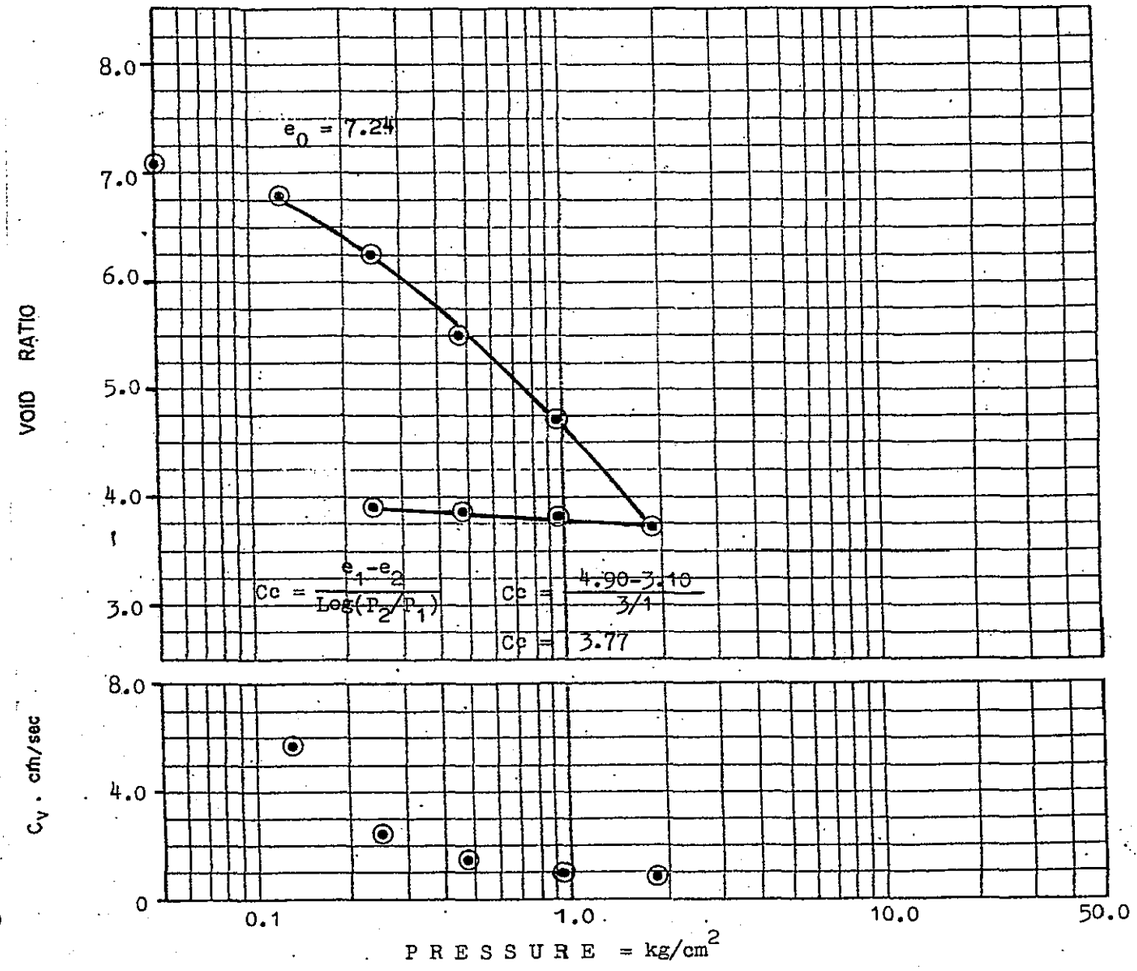
CONSOLIDATION TEST



SOIL DESCRIPTION	Gray CLAY		INITIAL	FINAL
LIQUID LIMIT	56	HEIGHT (cm)	1.91	1.48
PLASTIC LIMIT	27	WATER CONTENT (%)	57.59	36.35
PLASTICITY INDEX	29	DRY UNIT WEIGHT (g/cc)	1.02	1.37
SPECIFIC GRAVITY	2.68	VOID RATIO	1.62	0.92
PRECON. PRESSURE	kg/cm^2 =1.56	SATURATION (%)	99.15	101.48

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-2 (UDS-2)	4.00-4.45 m	September 24, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Dark brown sandy-silty CLAY		CL-OL

CONSOLIDATION TEST

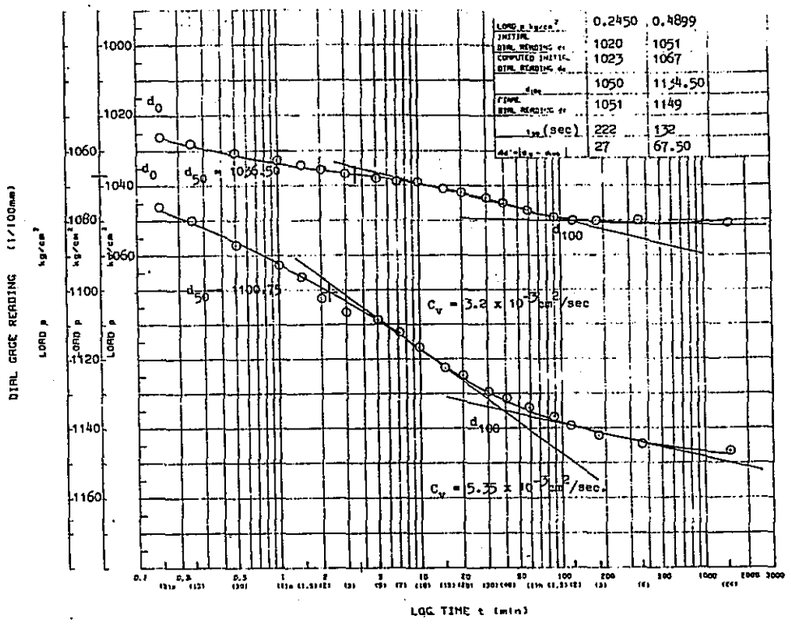


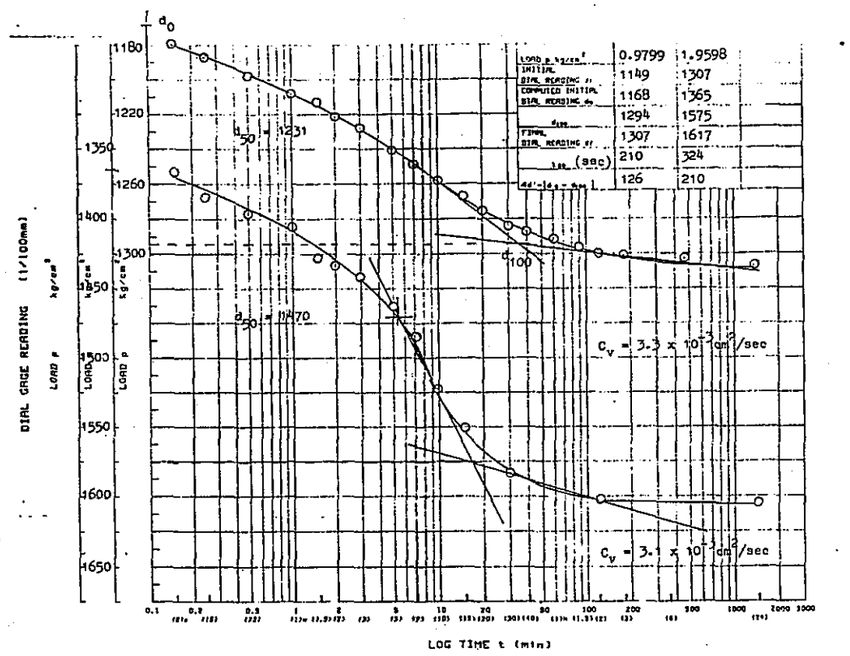
SOIL DESCRIPTION	Dark brown sandy - silty CLAY		INITIAL	FINAL
LIQUID LIMIT	42	HEIGHT (cm)	1.91	1.21
PLASTIC LIMIT	23	WATER CONTENT (%)	249.70	169.52
PLASTICITY INDEX	19	DRY UNIT WEIGHT (g/cc)	0.31	0.44
SPECIFIC GRAVITY	2.52	VOID RATIO	7.24	3.72
PRECON. PRESSURE	kg/cm^2 = 0.25	SATURATION (%)	87.00	91.02

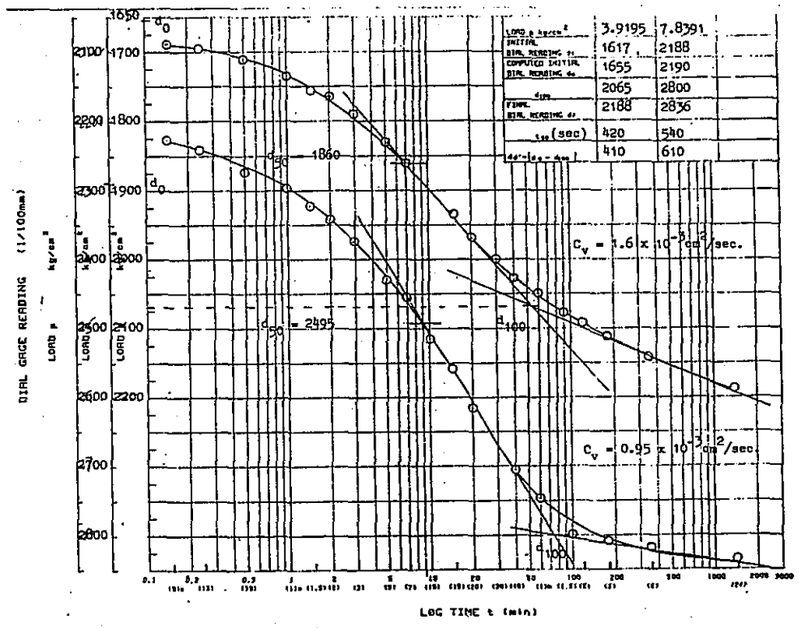
	REPUBLIC OF THE PHILIPPINES	PROJECT TITLE:	SHEET CONTENTS:	SHEET NO.:
JAPAN INTERNATIONAL COOPERATION AGENCY	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	CONSOLIDATION TEST RESULTS	G-10

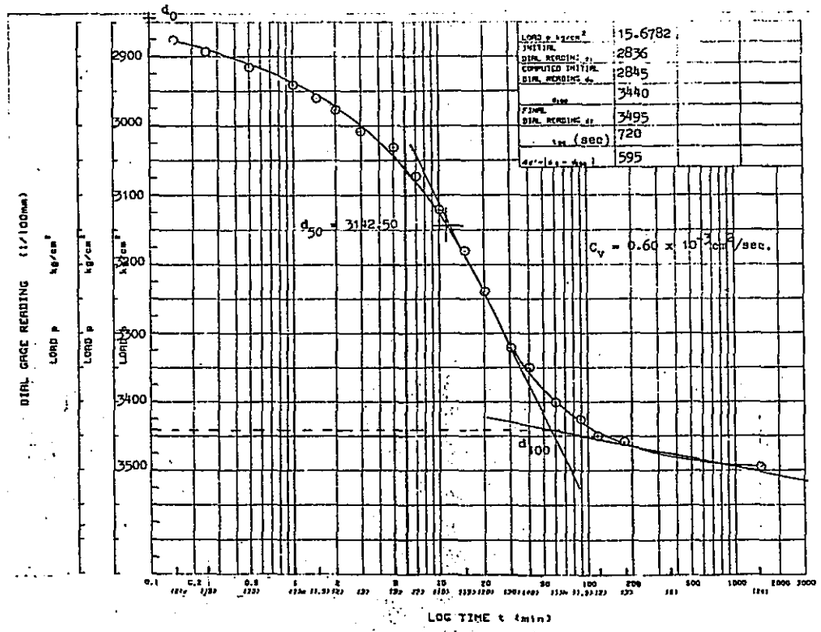
SAMPLE NO:	DEPTH:
BG-2 (UDS-1)	2.00-2.45 m
SAMPLE DESCRIPTION:	
Gray CLAY.	

DIAL READING VS. LOG TIME CURVE





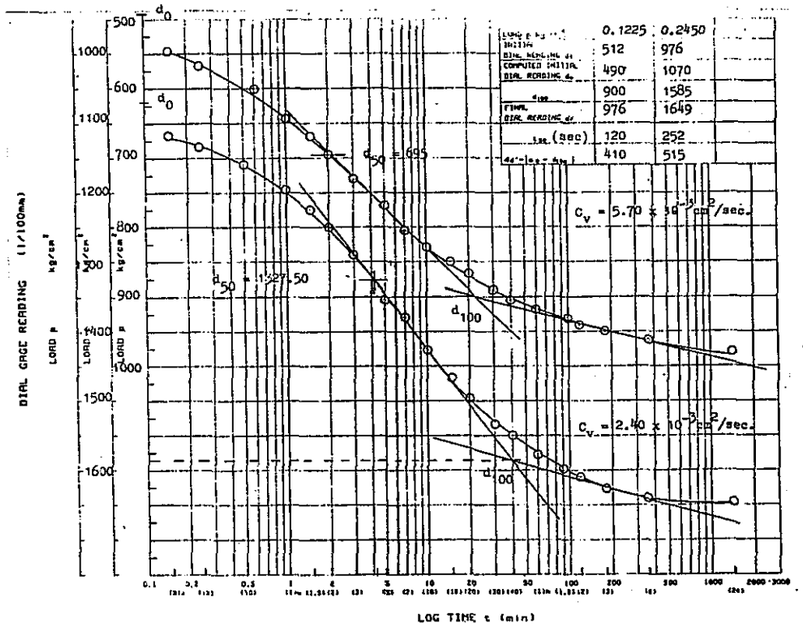


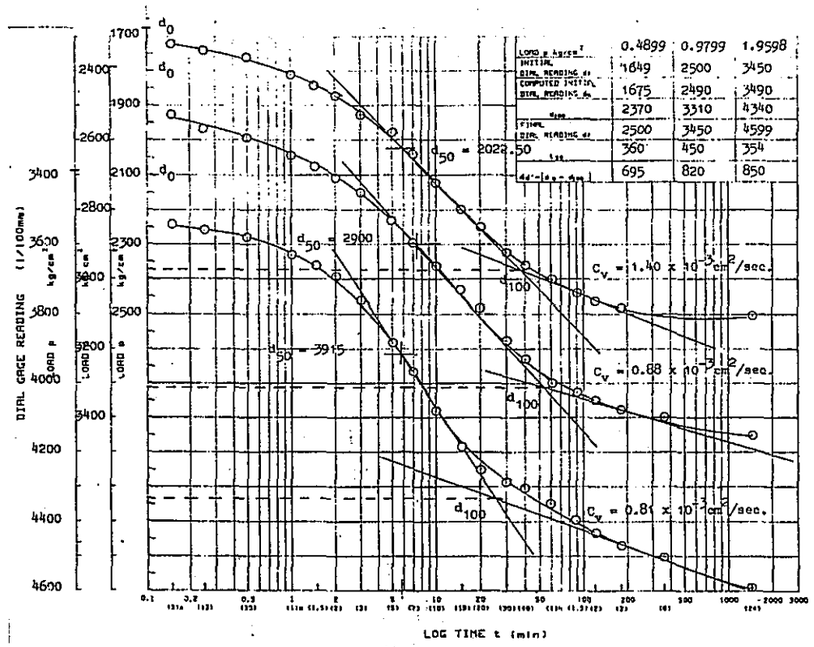


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: **FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)**	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G -11

DIAL READING VS. LOG TIME CURVE

SAMPLE NO:	DEPTH:
BG-2 (UDS-2)	4.00-4.45 m
SAMPLE DESCRIPTION:	
Dark brown sandy-silty CLAY.	





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: **FEASIBILITY STUDY ON** PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G – 12

BORING LOG

BG-3

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
	GROUND SURFACE:			GROUND ELEVATION:			WATER TABLE : 0.98m.	
1–35	▽	2.20	2.20		Gravel and Sand	Brown to Gray	Med. Dense	Probable Fill Materials
		9.00	6.80		Clay/and Clayey Silt with Presence of Slightly Organic and Decayed Wood Fibers	Light Brown to Dark Brown	Very Soft to Soft	
		15.45	6.45		Sandy Clay with Presence of Shell Fragments	Gray	Med. Stiff to Very Stiff	

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100
1.15	SM	23	30 22 12	
1.45	CH	7	2 3 4	
2.15	CH OL		Wt. of Hammer	
2.45	MH OL	-	Pressed	Pressed Shelby Tube
4.45	MH	2	1 1 1	
5.12		3	1 1 2	
6.45	MH OL	2	1 1 1	
6.15	MH OL	4	3 2 2	
8.45		8	4 4 4	
8.45	SC CL	2	0 1 1	
10.15		10	2 4 6	
10.45	ML	18	5 8 10	
11.15		24	9 11 13	
12.42		28	11 14 14	
12.15	SC CL	29	10 14 15	
13.45				
14.45				
15.15				
15.45				

NAT.M.C. — L.L. — P.L.

20 40 60 80 100 120 140

SPECIFIC GRAVITY

2 3

GRAVEL / SAND / SILT / CLAY

20 40 60 80 %

Wood Fibers

Wood Fibers

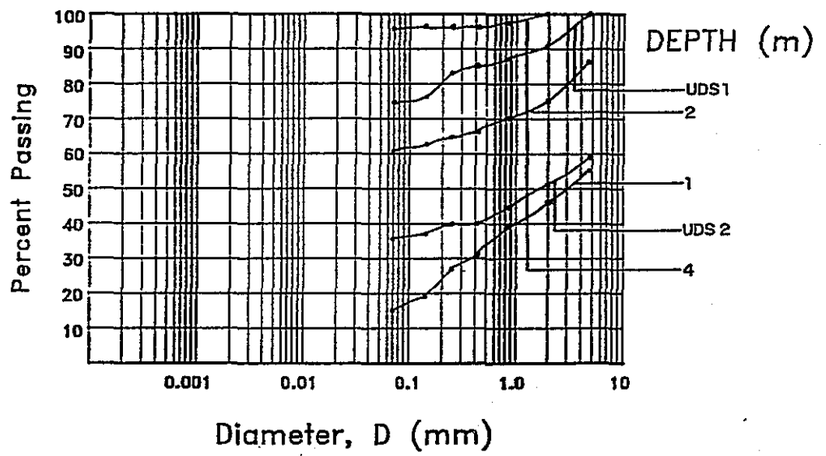
SCALE (m)

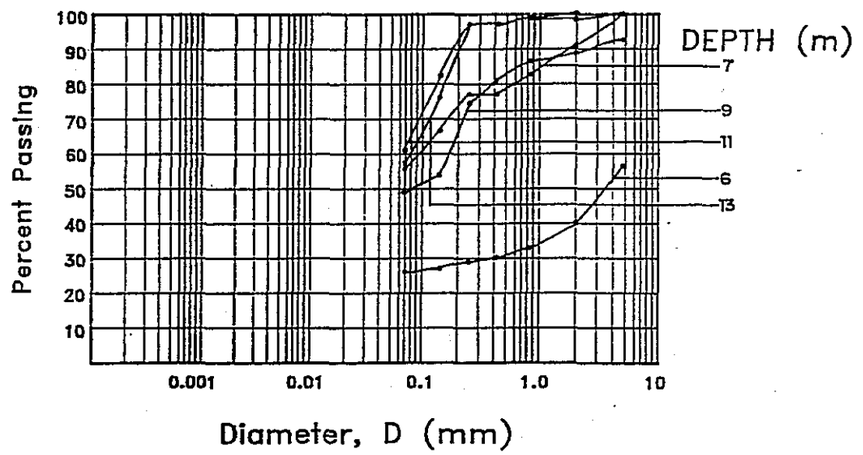
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-3, Km. 1330+600 BORING LOG
			SHEET NO. G-13

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BG # 3

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.00	1.45	Gravel and Sand	23	14.07	NP	NP	NP	100	85	64	55	47	39	31	27	19	15	2.63	SM
UDS 1	2.55	3.00	Sandy Clay and Wood Fibers		42.83	51	27	24				100	91	87	85	83	76	74	2.67	CH
SS2	3.00	3.45	Sandy Clay and Wood Fibers		241.27	265	196	69			100	86	75	70	66	65	63	61	2.58	CH-OL
UDS2	4.00	4.45	Silty Clay and Wood Fibers		173.49	58	39	19		100	78	59	51	45	40	40	38	36	2.57	MH-OL
SS 4	5.00	5.45	Clayey Silt	2	47.10	70	47	30					100	98	97	97	97	96	2.63	MH
SS6	7.00	7.45	Clayey Silt and Wooden Fibers	2	458.12	125	105	20			100	56	40	33	30	29	28	27	2.51	MH OL
SS7	8.00	8.45	Clayey Silt and Wooden Fibers	4	411.02	58	41	17				100	91	83	78	78	68	56	2.57	MH-OL
SS9	10.00	10.45	Sand and Clay	2	51.28	34	22	13			100	93	89	87	81	75	54	49	2.67	SC CL
SS11	12.00	12.45	Sandy Clayey Silt	18	44.91	36	27	9				100	99	99	98	98	82	61	2.69	ML
SS13	15.00	15.45		28	44.13	34	21	13					100	99	98	98	76	57	2.54	SC CL

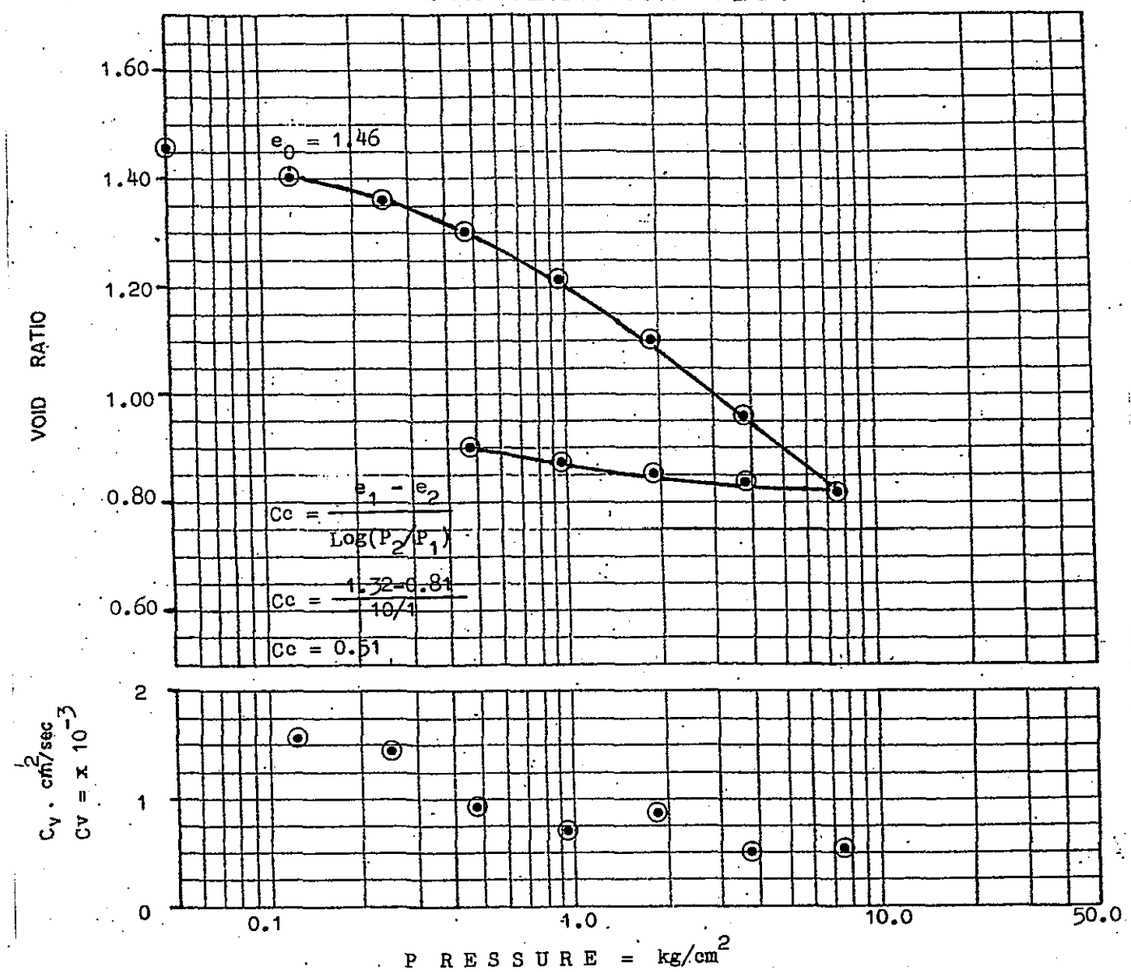




JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-3, Km. 1330+600 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. G-14

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-3 (UDS-1)	2.55-3.00 m	September 26, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Light brown to gray sandy CLAY		CH

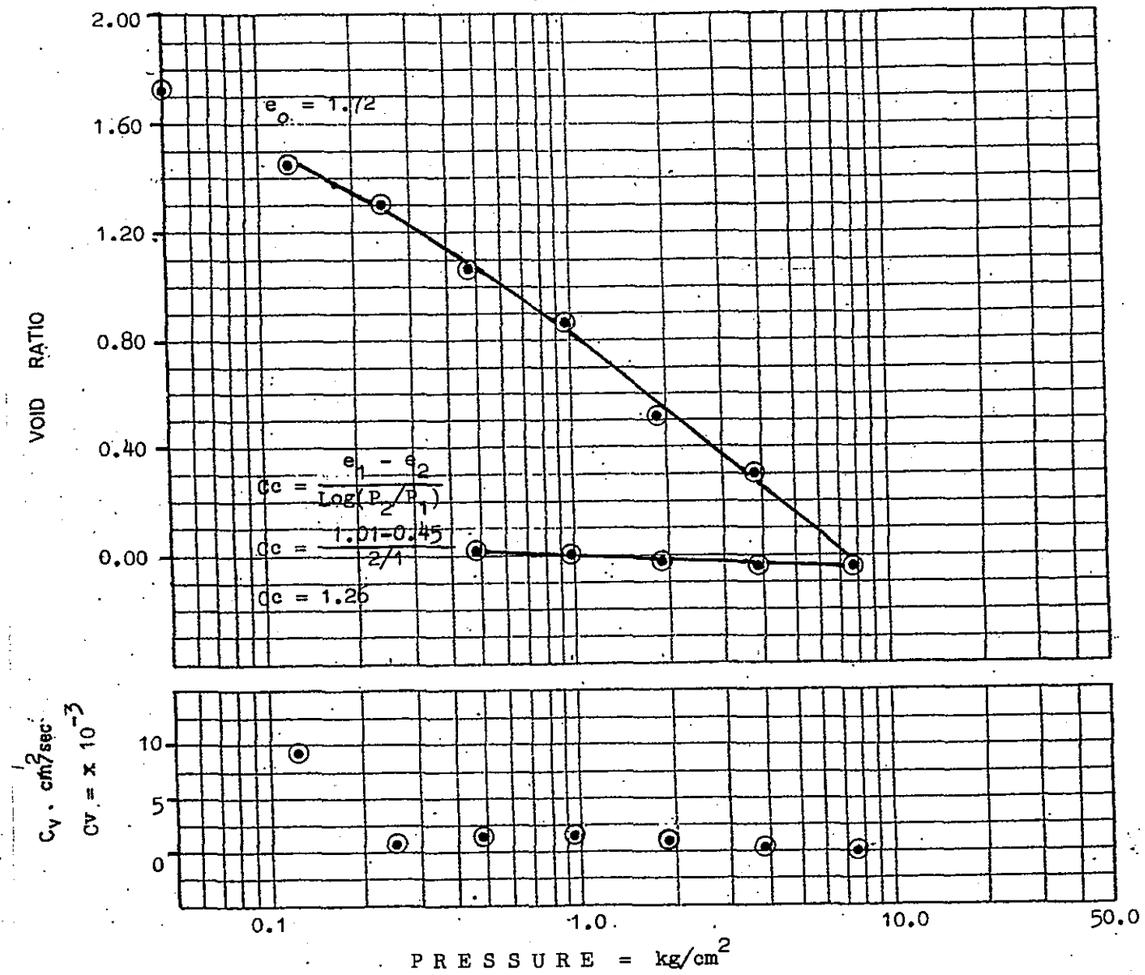
CONSOLIDATION TEST



SOIL DESCRIPTION Light brown to gray sandy CLAY		INITIAL	FINAL
LIQUID LIMIT	51	HEIGHT (cm)	1.91	1.42
PLASTIC LIMIT	27	WATER CONTENT (%)	57.85	48.88
PLASTICITY INDEX	24	DRY UNIT WEIGHT (g/cc)	1.07	1.45
SPECIFIC GRAVITY	2.64	VOID RATIO	1.46	0.91
PRECON. PRESSURE	kg/cm² = 0.50	SATURATION (%)	137.37	-

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-3 (UDS-2)	4.00-4.45 m	Seotember 26, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Dark brown sandy-clayey SILT with wood fibers.		MH-OL

CONSOLIDATION TEST

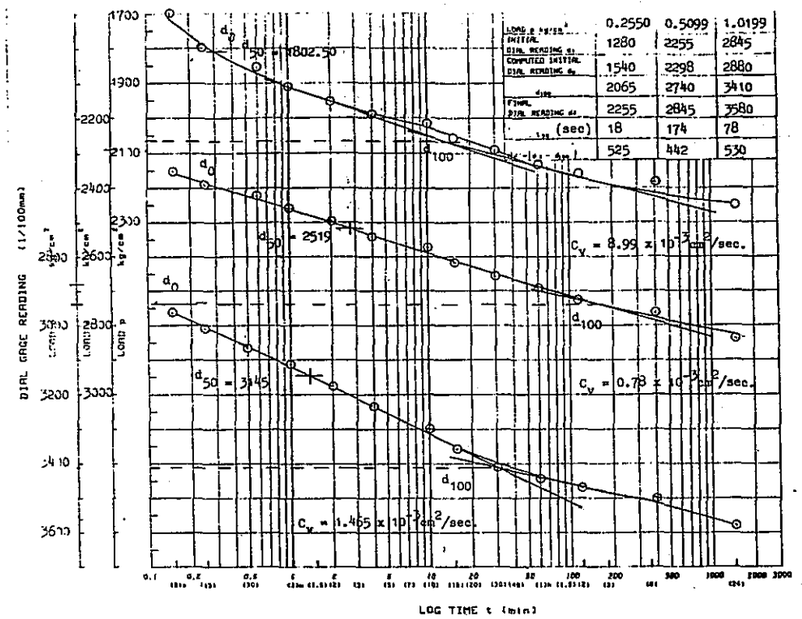


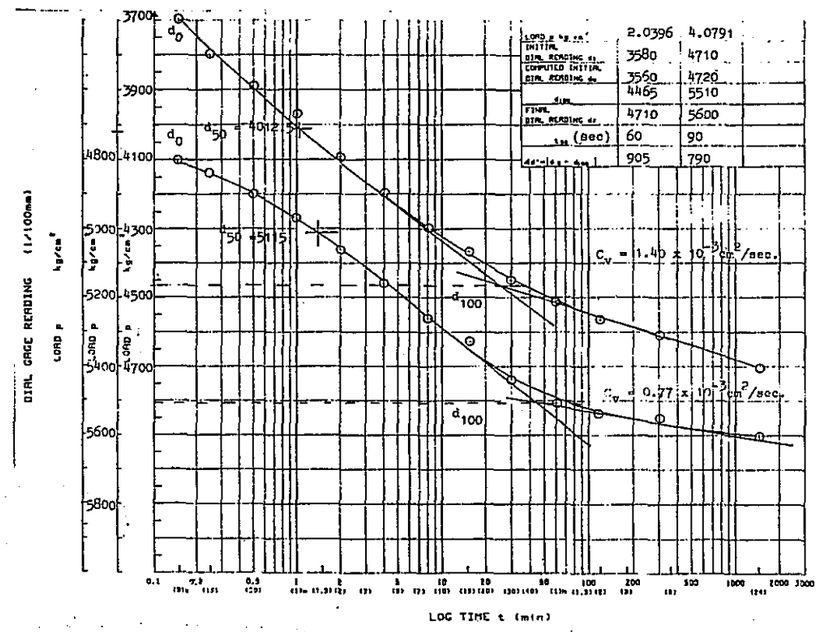
SOIL DESCRIPTION Dark brown sandy-clayey SILT w/ wood fiber		INITIAL	FINAL
LIQUID LIMIT	58	HEIGHT (cm)	1.91	0.735
PLASTIC LIMIT	39	WATER CONTENT (%)	350.70	0.484
PLASTICITY INDEX	19	DRY UNIT WEIGHT (g/cc)	0.72	1.86
SPECIFIC GRAVITY	1.950	VOID RATIO	1.72	0.117
PRECON. PRESSURE	kg/cm² = 0.40	SATURATION (%)	66.77	-

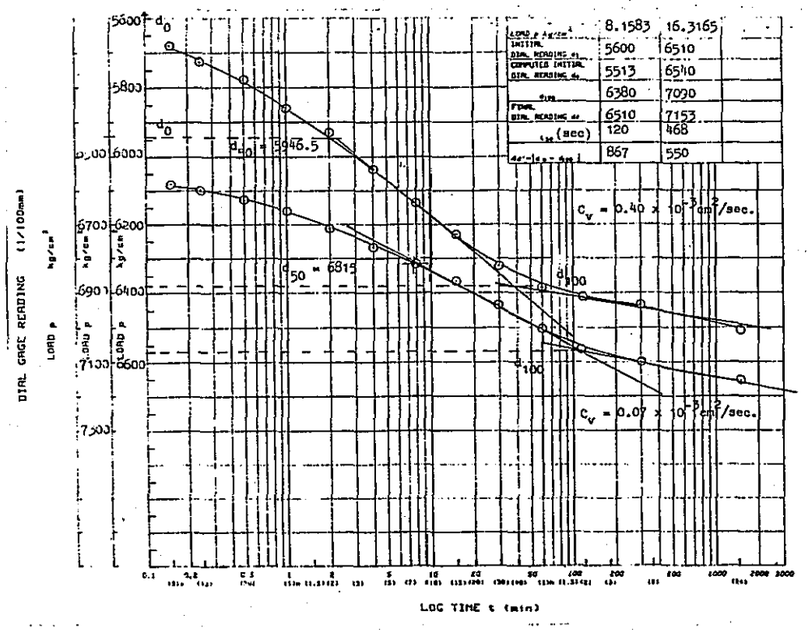
	REPUBLIC OF THE PHILIPPINES	PROJECT TITLE:	SHEET CONTENTS:	SHEET NO.:
JAPAN INTERNATIONAL COOPERATION AGENCY	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	CONSOLIDATION TEST RESULTS	G – 15

SAMPLE NO:	DEPTH:
BG-3 (UDS-1)	2.55-3.00 m
SAMPLE DESCRIPTION: Light brown to gray sandy CLAY.	

DIAL READING VS. LOG TIME CURVE



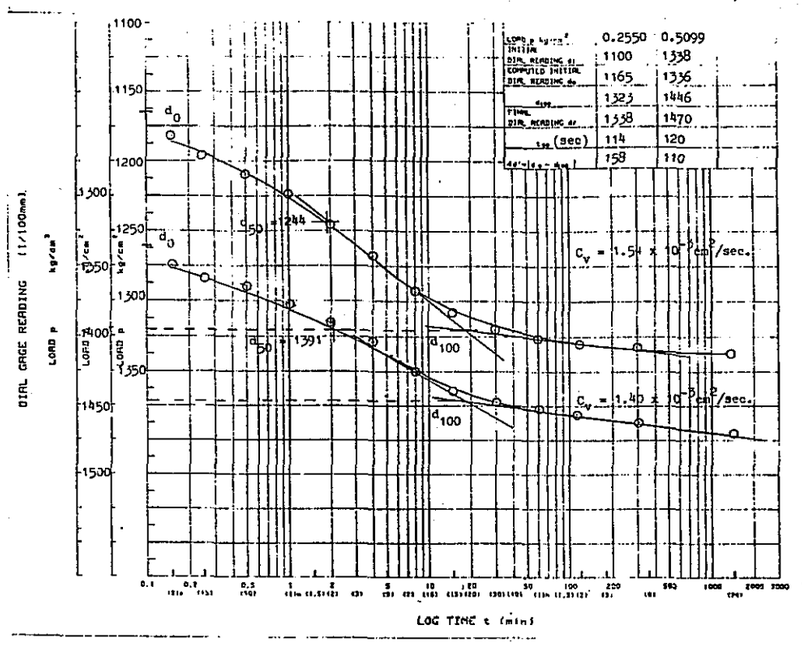


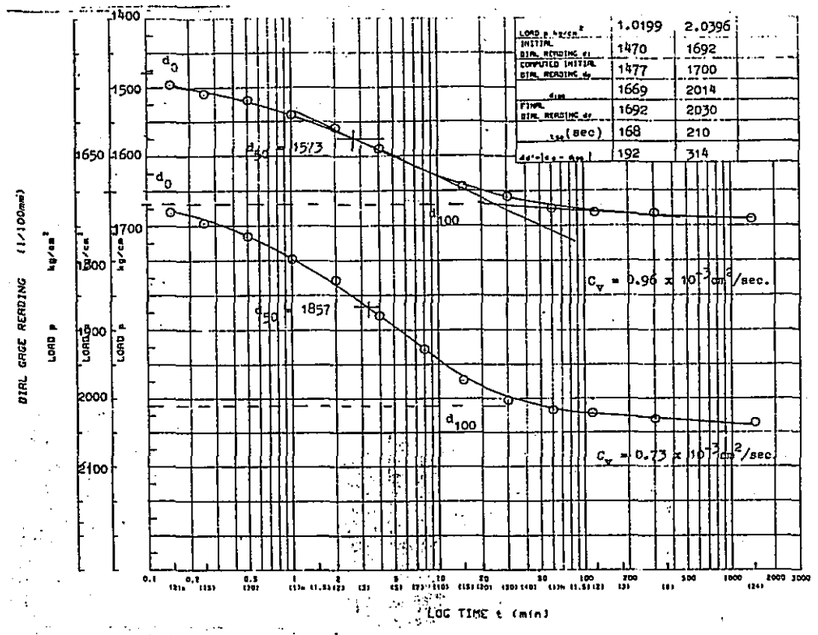


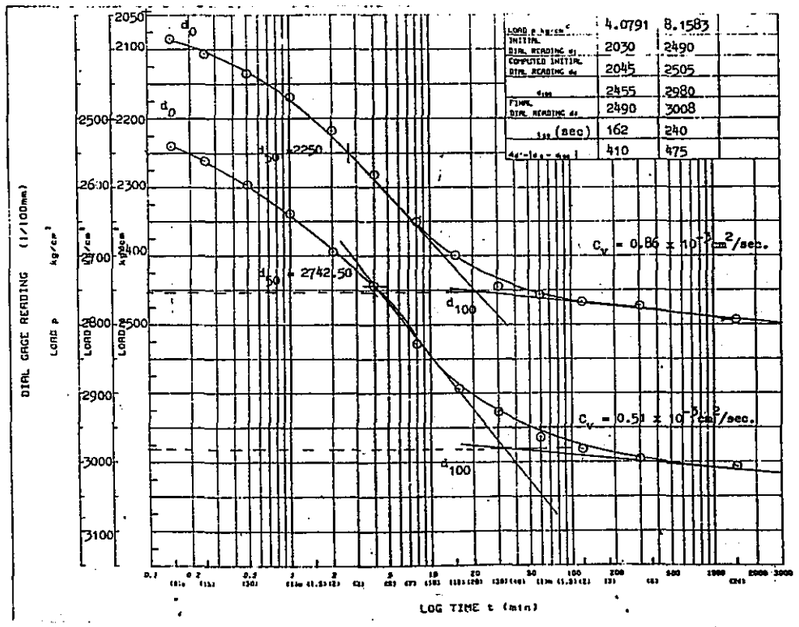
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G-16

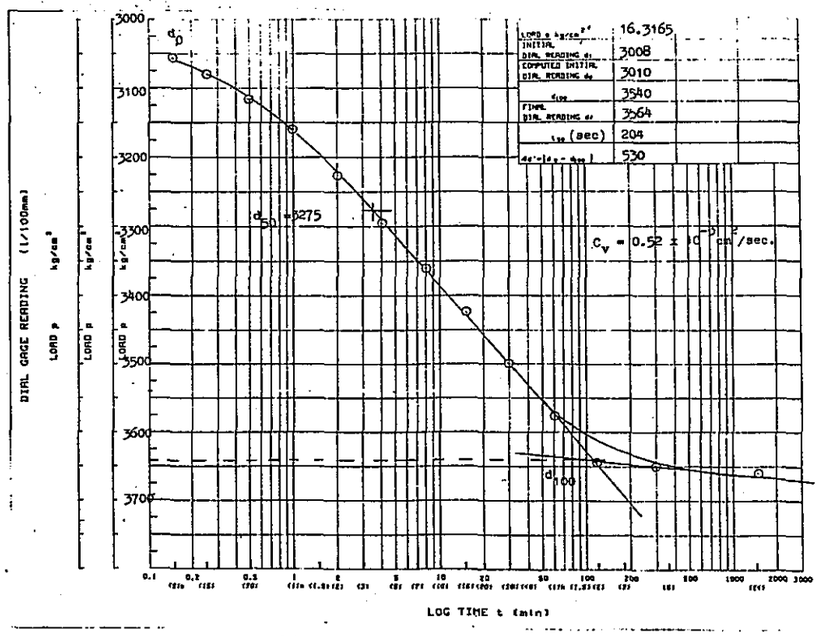
SAMPLE NO:	DEPTH:
BG-3 (UDS-2)	4.00-4.45 m
SAMPLE DESCRIPTION:	
Dark brown sandy-clayey SILT with wood fibers.	

DIAL READING VS. LOG TIME CURVE









JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G-17

BORING LOG

BG-4

GROUND SURFACE: GROUND ELEVATION: WATER TABLE :

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
1–2		2.0	2.0	Silty gravel and sand	DARK BROWN	LOOSE	Probable fill materials
2–4		4.0	2.0	Sandy Clay	Yellowish Brown	Soft	
4–9		9.0	5.0	Sandy clayey GRAVEL	DARK BROWN	Med.stiff to Very stiff	
9–15		15.45	6.45	Sandy GRAVEL w/appreciable amount of silt	Reddish brown	Med. dense	

STANDARD PENETRATION TEST OR CORE RECOVERY

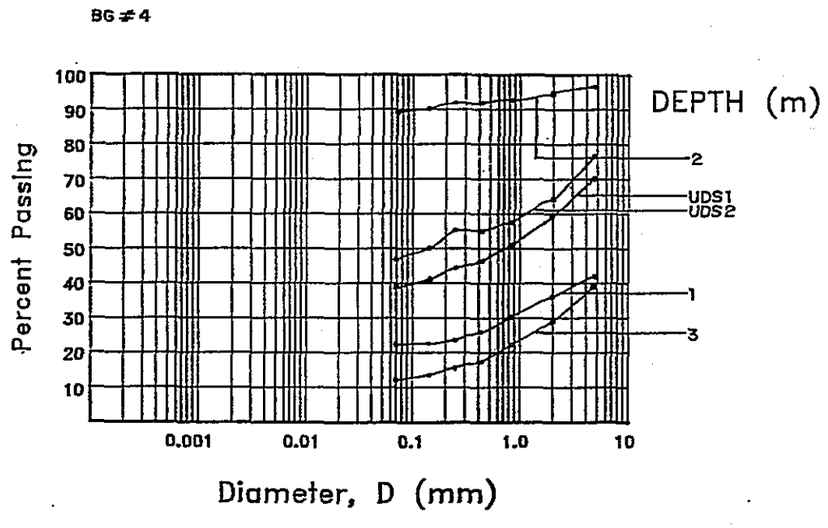
DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM: 15 cm	15 cm	15 cm
1.15 1.45	GM	10	7	6	4
2.15 2.45	GC		PRESSED		
3.15 3.45	CH	3	1	1	2
4.15 4.45	CL		PRESSED		
5.15 5.45	GC	8	6	4	4
6.15 6.45		16	5	8	8
7.15 7.45	GC	17	6	8	9
8.15 8.45		15	5	7	8
9.15 9.45	GM	29	23	20	9
10.15 10.45		13	9	5	8
11.15 11.45	SC	13	7	6	7
12.15 12.45	GM	12	6	5	7
13.15 13.45	GM	12	5	6	6
14.15 14.45		12	11	4	8
15.15 15.45	CH	17	7	8	9

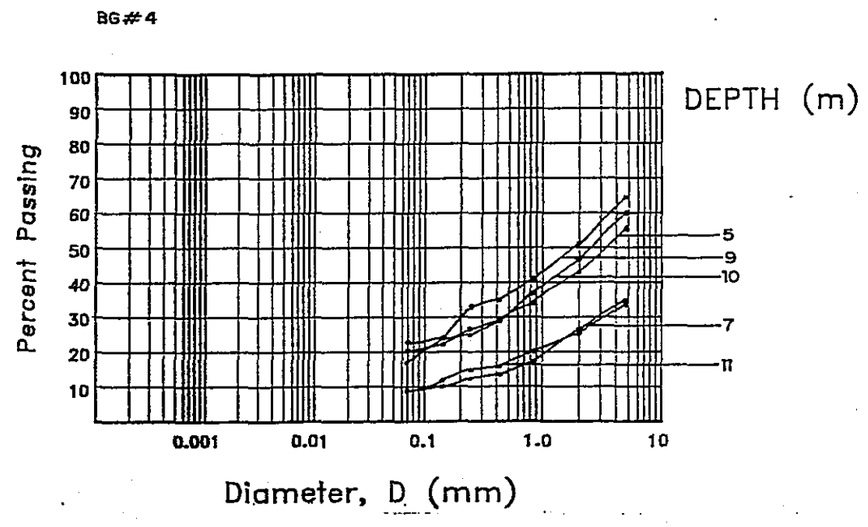
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-4, Km. 1343+000 BORING LOG	SHEET NO. G-18

SUMMARY OF LABORATORY TEST RESULTS

BORING NO. BG# 4

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.00	1.45	Silty Gravel	10	10.05	NP	NP	NP	72	56	48	42	36	30	26	24	23	23	2.66	GM
UDS 1	2.00	2.45	Clayey Gravel and Sand		43.44	45	25	20		100	81	70	59	51	47	45	41	39	2.66	GC
SS 2	3.00	3.45	Clay	3	24.78	60	28	32		100	98	97	95	93	92	92	90	89	2.66	CH
UDS 2	4.00	4.45			39.21	41	22	19		100	93	77	64	58	55	55	50	47	2.67	CL
SS 3	5.00	5.45	Sandy Clayey Gravel	8	20.53	45	22	23	76	55	45	39	29	22	17	16	14	12	2.70	GC
SS 5	7.00	7.45	Sandy Claye Gravel	17	22.03	Insufficient				100	65	55	43	34	29	27	22	20	2.59	GC
SS 7	9.00	9.45	Sandy Gravel	29	15.47	NP	NP	NP	100	65	46	35	27	17	13	12	10	9	2.64	GM
SS 9	11.00	11.45	Gravel Clayey Sandy	13	22.04	40	21	19	100	87	79	64	51	41	35	33	24	17	2.67	SC
SS 10	12.00	12.45	Sandy Silty Gravel	12	28.69	NP	NP	NP		100	76	60	47	37	29	26	24	23	2.67	GM
SS 11	13.00	13.45	Sandy Gravel	12	15.09	NP	NP	NP	100	84	42	34	26	20	16	15	12	9	2.59	GM





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-4, Km.1343+000 SUMMARY OF LABORATORY TEST RESULTS	SHEET NO. G-19

BORING LOG

BG-5

SCALE (m)	ELEVATION (m)	DEPTH (m)	THICKNESS (m)	SYMBOL	TYPE OF SOIL	COLOR	RELATIVE DENSITY OR CONSISTENCY	GENERAL REMARKS
	GROUND SURFACE:				GROUND ELEVATION:		WATER TABLE :-1.20m.	
1-35	▽	3.0	3.0		Sandy Clay/ and Clayey Silt	DARK BROWN	Soft	
		7.0	4.0		Silty Clay w/Slightly Organic and decayed wood fibers	DARK BROWN	Very soft	
		11.0	4.0		Silty Clay	DARK BROWN	Soft	
		15.45	4.45		Clayey Sand w/little amnt. of gravel	GRAY	Hard	

STANDARD PENETRATION TEST OR CORE RECOVERY

DEPTH (m)	USCS	N-VALUE 30 cm	BLOW PER 15 CM (15 cm / 15 cm / 15 cm)	• (N-VALUE) 10 20 30 40 50 / □ SAMPLE RECOVERED 20 40 60 80 100
1.15	ML	4	7 / 6 / 4	
1.45	CL		PRESSED	PRESSED SHELBY TUBE
2.15	CL	2	1 / 1 / 2	
2.45	CH-OL		PRESSED	PRESSED SHELBY TUBE
4.15	SM-OL	0	wt. of Hammer	
4.45		0	wt. of Hammer	
5.15	ML	2	1 / 1 / 1	
5.45		2	1 / 1 / 1	
6.15	ML	3	1 / 1 / 2	
6.45		2	2 / 1 / 1	
10.15	ML	33	8 / 13 / 20	
10.45		39	15 / 18 / 21	
11.15		14	13 / 8 / 6	
11.45		32	12 / 14 / 18	
14.15		42	15 / 18 / 24	
15.15				
15.45				
16.45				

NAT.M.C. — L.L. — P.L.

20 40 60 80 100 120 140

SPECIFIC GRAVITY

2 3

GRAVEL / SAND / SILT / CLAY

20 40 60 80 %

SCALE (m) 1-35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-5, Km. 1346+000 BORING LOG

SHEET NO.

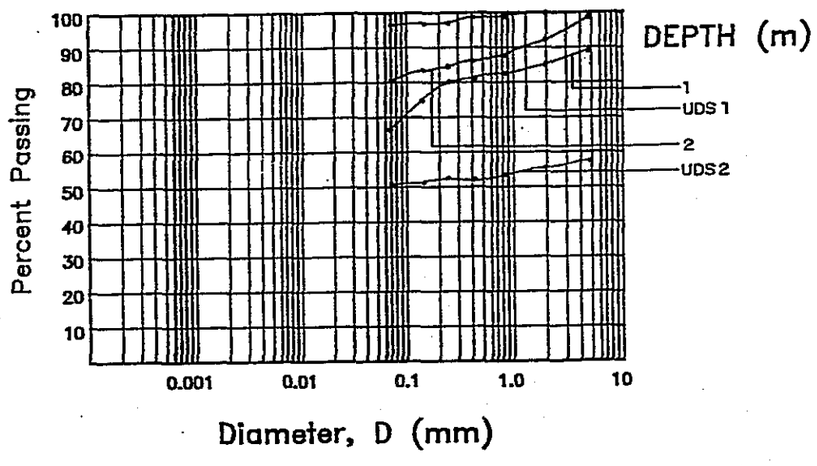
G-20

SUMMARY OF LABORATORY TEST RESULTS

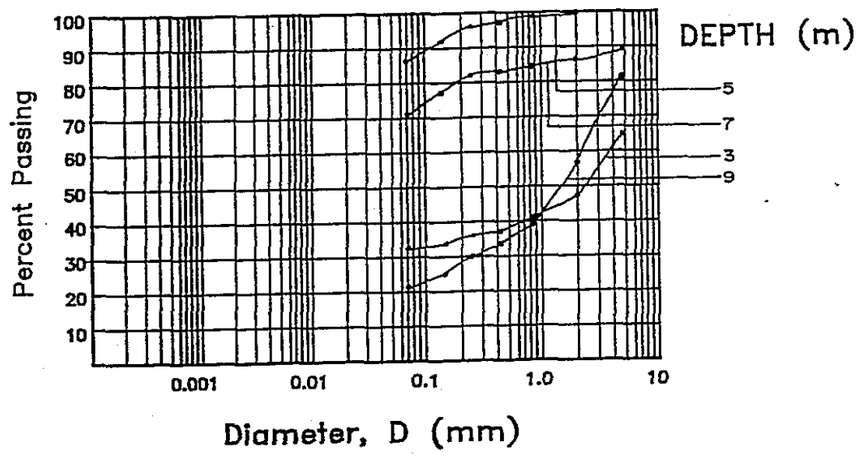
BORING NO. BG#5

SAMPLE NO.	DEPTH (m)		TYPE OF SOIL	N-VALUE	NMC	CONSISTENCY			SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										SPECIFIC GRAVITY	USCS
						LL	PL	PI	1	3/4	3/8	4	10	20	40	60	100	200		
SS 1	1.00	1.45	Sandy Clayey Silt	4	31.35	42	27	15		100	96	89	85	82	81	80	75	67	2.70	ML
UDS 1	2.00	2.45	Silty Clay		41.51	39	21	18					100	99	99	98	98	97	2.70	CL
SS 2	3.00	3.45	Clay	2	80.65	60	32	28			100	99	92	88	86	85	83	80	2.67	CH
UDS 2	4.00	4.45	Silty Clay and Wood Fibers		232.50	59	31	28		100	64	57	55	53	52	52	51	51	2.47	CH OL
SS 3	5.00	5.45	Sand and Silt with wood Fibers		225.45	NP	NP	NP		100	83	64	48	41	38	37	34	33	2.57	SM OL
SS 5	7.00	7.45	Clayey Silt	2	87.05	46	36	10					100	99	98	96	92	86	2.67	ML
SS 7	9.00	9.45	Clayey Silt	3	34.77	47	37	10		100	94	89	86	84	83	82	78	71	2.68	ML
SS 9	11.00	11.45	Clayey Sand	33	30.23	35	30	5		100	97	81	57	39	34	30	25	21	2.70	SC

BG#5



BG#5

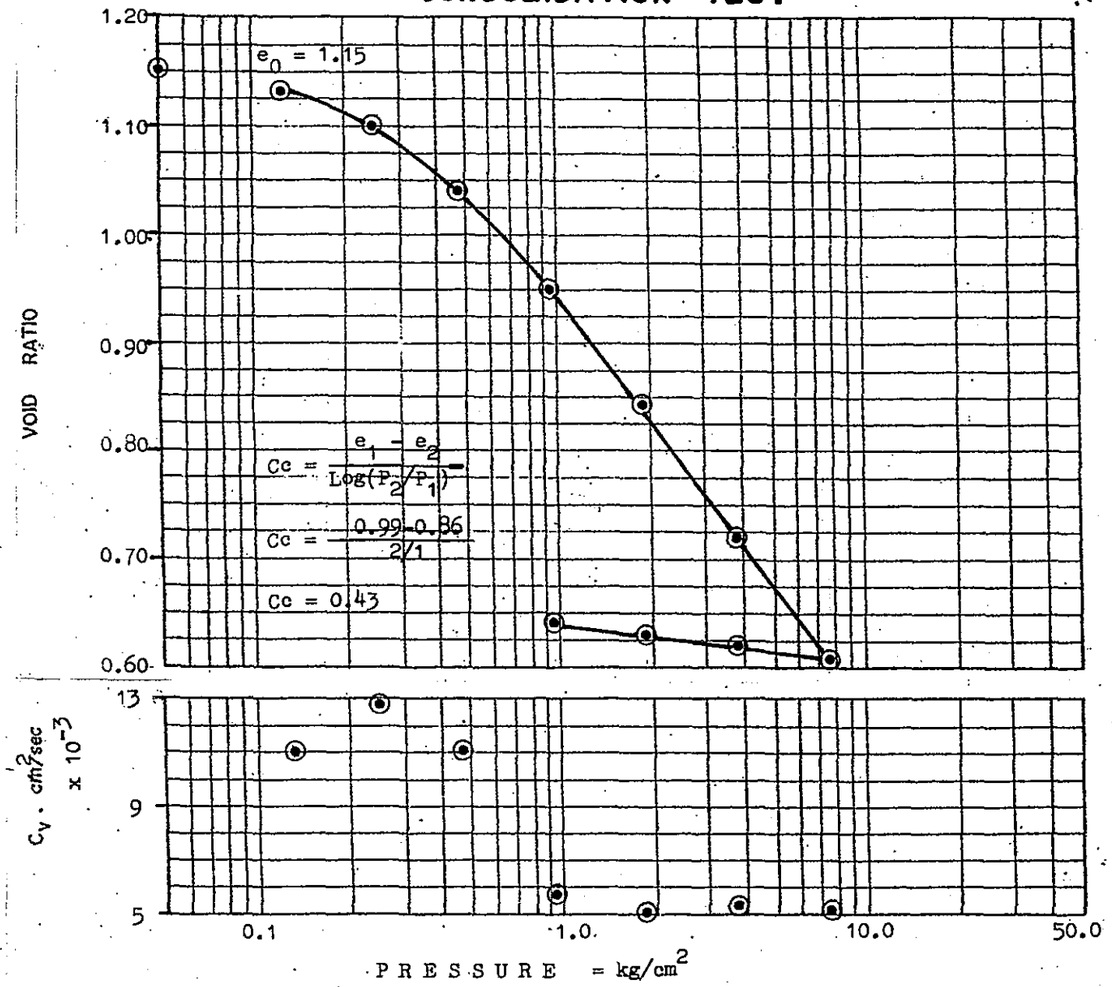


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	BG-5, Km.1346+000 SUMMARY OF LABORATORY TEST RESULTS

SHEET NO.
G-21

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-5 (UDS-1)	2.00-2.45 m	September 27, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Dark brown to yellowish brown silty CLAY.		CL

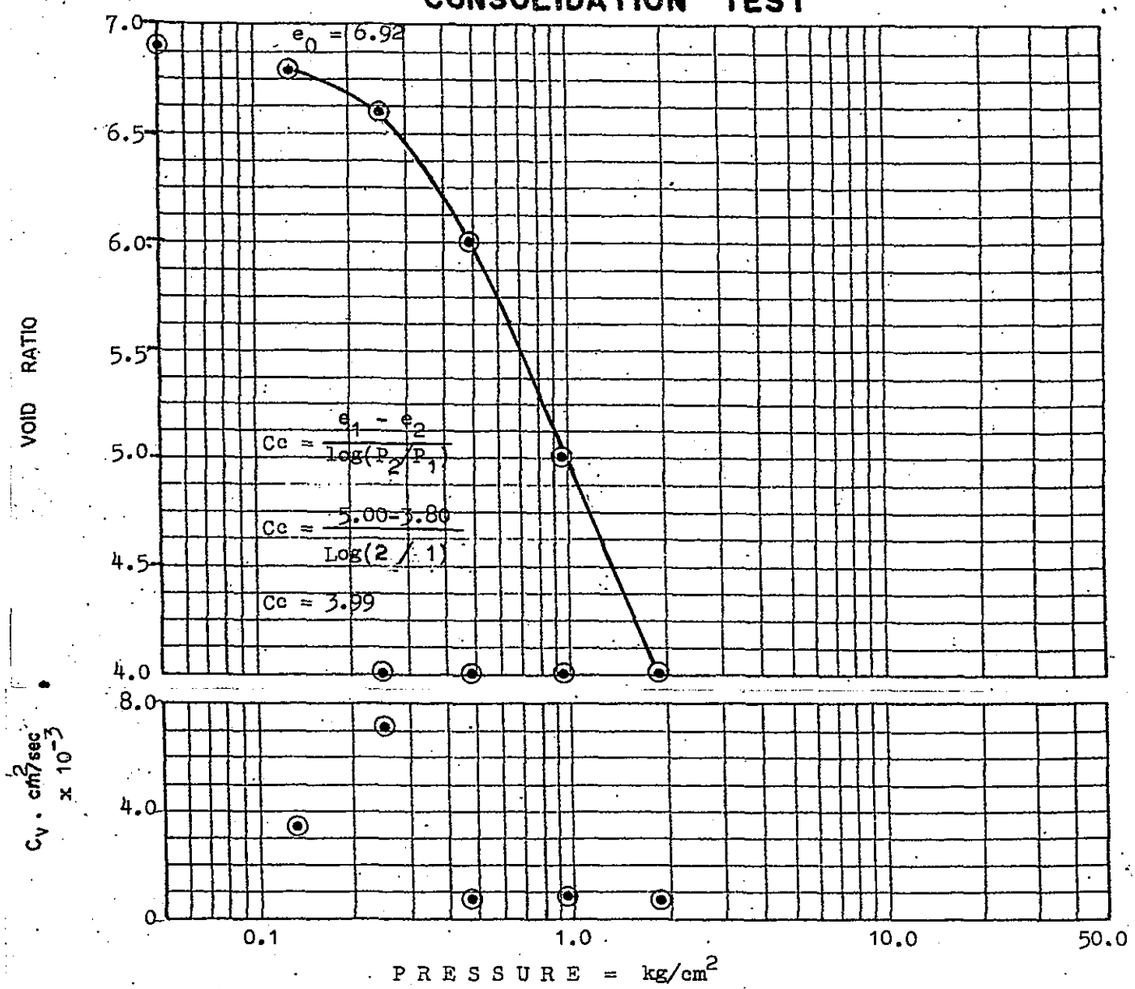
CONSOLIDATION TEST



SOIL DESCRIPTION Dark brown to yellowish brown silty CLAY		INITIAL	FINAL
LIQUID LIMIT 39	HEIGHT (cm)	1.91	1.47
PLASTIC LIMIT 21	WATER CONTENT (%)	41.51	26.71
PLASTICITY INDEX 18	DRY UNIT WEIGHT (g/cc)	1.25	1.58
SPECIFIC GRAVITY 2.70	VOID RATIO	1.15	0.61
PRECON. PRESSURE kg/cm^2 =0.40	SATURATION (%)	97.17	101.38

SAMPLE NO:	DEPTH:	DATE TESTED:
BG-5 (UDS-2)	4.00-4.45 m	September 29, 1994
SAMPLE DESCRIPTION:		UNIFIED SOIL CLASSIFICATION SYSTEM:
Light gray silty CLAY with wood fibers.		CH-OL

CONSOLIDATION TEST

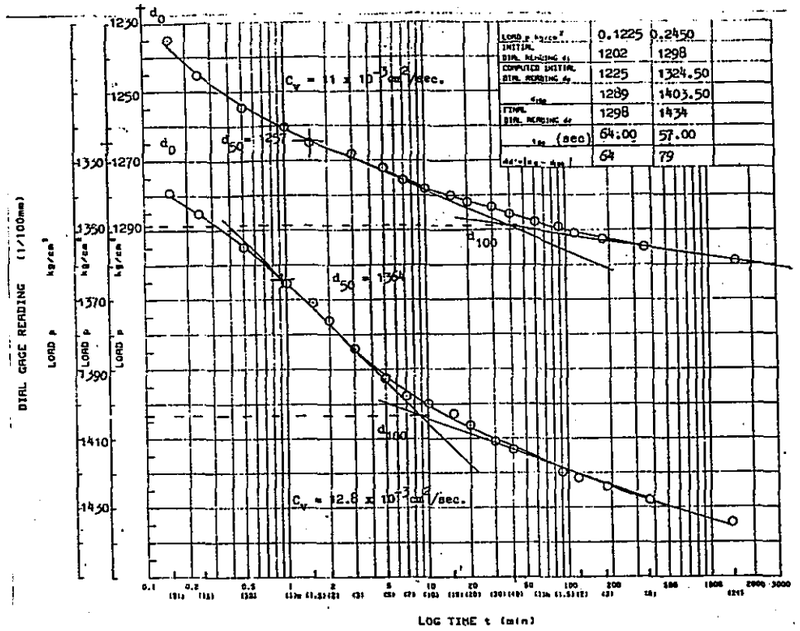


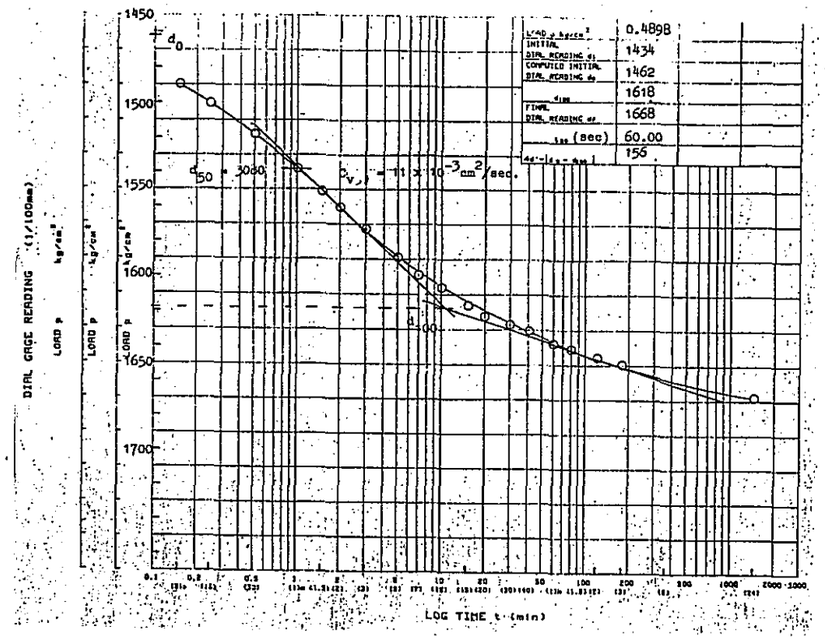
SOIL DESCRIPTION Light gray silty CLAY with wood fibers		INITIAL	FINAL
LIQUID LIMIT 59	HEIGHT (cm)	1.91	1.21
PLASTIC LIMIT 31	WATER CONTENT (%)	232.53	206.82
PLASTICITY INDEX 28	DRY UNIT WEIGHT (g/cc)	0.32	0.37
SPECIFIC GRAVITY 2.47	VOID RATIO	6.92	4.00
PRECON. PRESSURE kg/cm^2 =0.30	SATURATION (%)	83.13	92.40

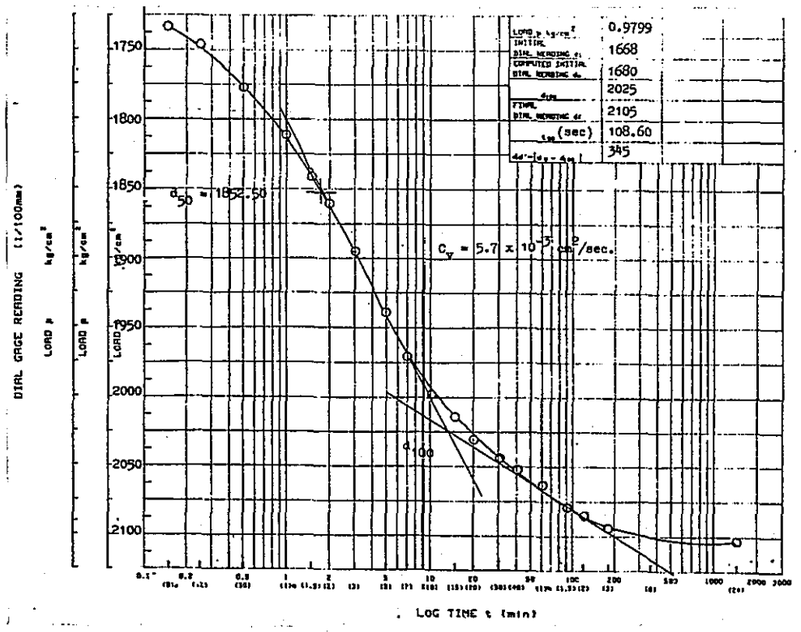
	REPUBLIC OF THE PHILIPPINES	PROJECT TITLE:	SHEET CONTENTS:	SHEET NO.:
JAPAN INTERNATIONAL COOPERATION AGENCY	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	CONSOLIDATION TEST RESULTS	G - 22

SAMPLE NO:	DEPTH:
BG-5 (UDS-1)	2.00-2.45 m
SAMPLE DESCRIPTION:	
Dark brown to yellowish brown silty CLAY.	

DIAL READING VS. LOG TIME CURVE



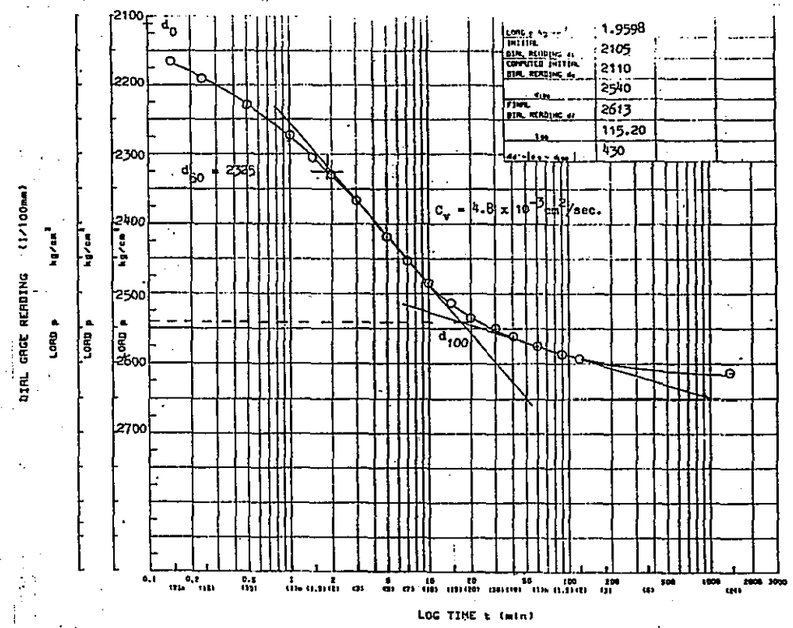


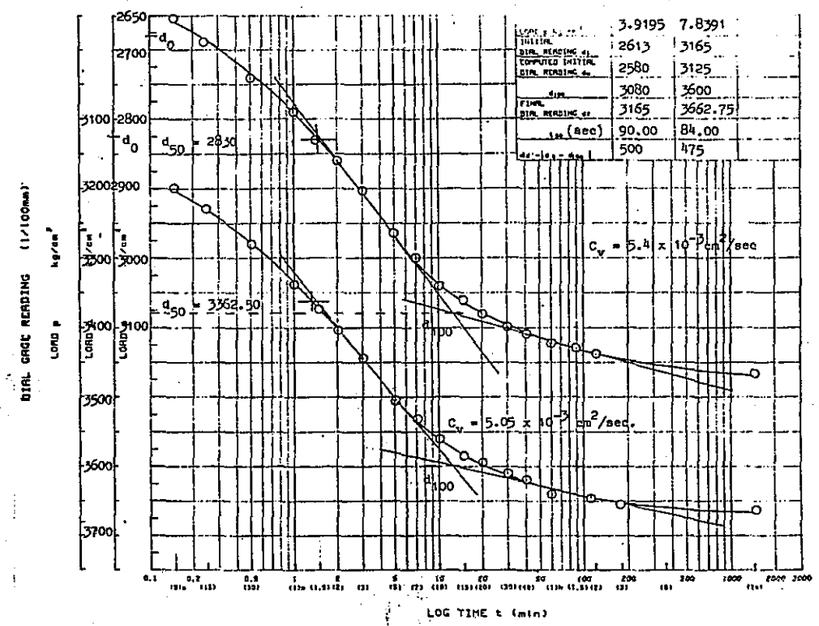


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G-23

DIAL READING VS. LOG TIME CURVE

SAMPLE NO:	DEPTH:
BG-5 (UDS-1)	2.00-2.45 m
SAMPLE DESCRIPTION:	
Dark brown to yellowish brown silty CLAY.	

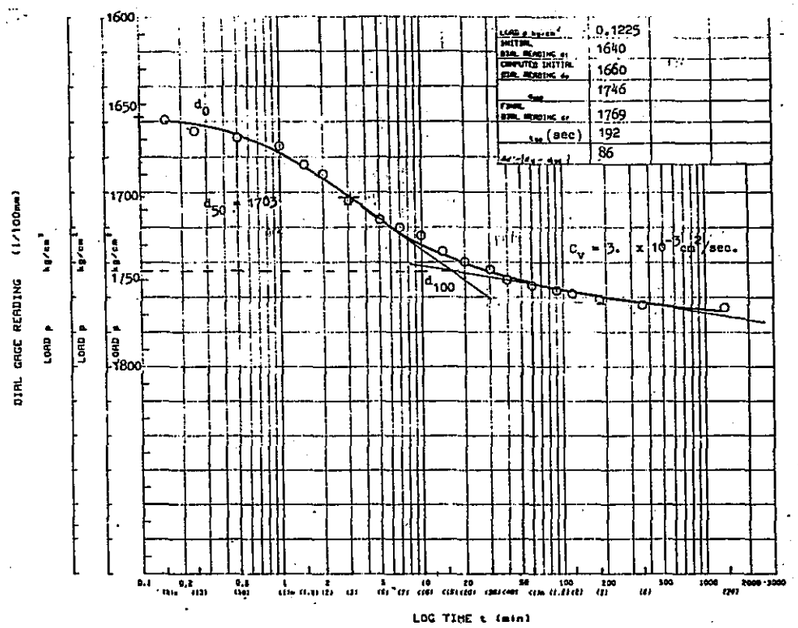


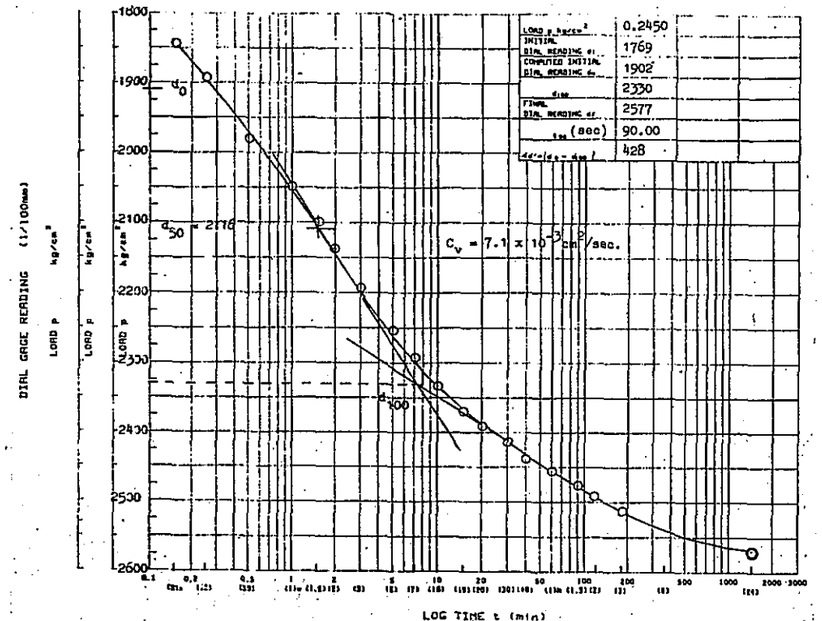


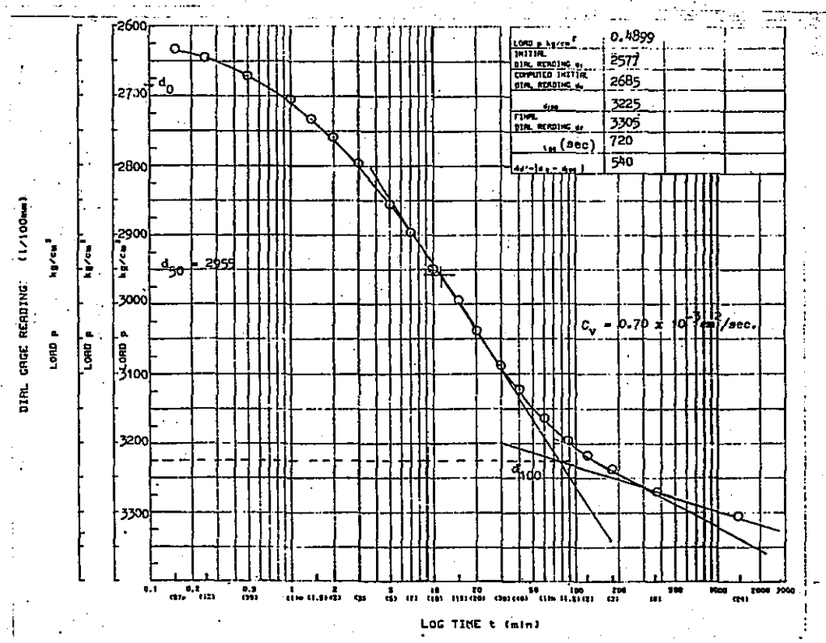
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G – 24

SAMPLE NO:	DEPTH:
BG-5 (UDS-2)	4.00-4.45 m
SAMPLE DESCRIPTION:	
Light gray silty CLAY with wood fibers.	

DIAL READING VS. LOG TIME CURVE



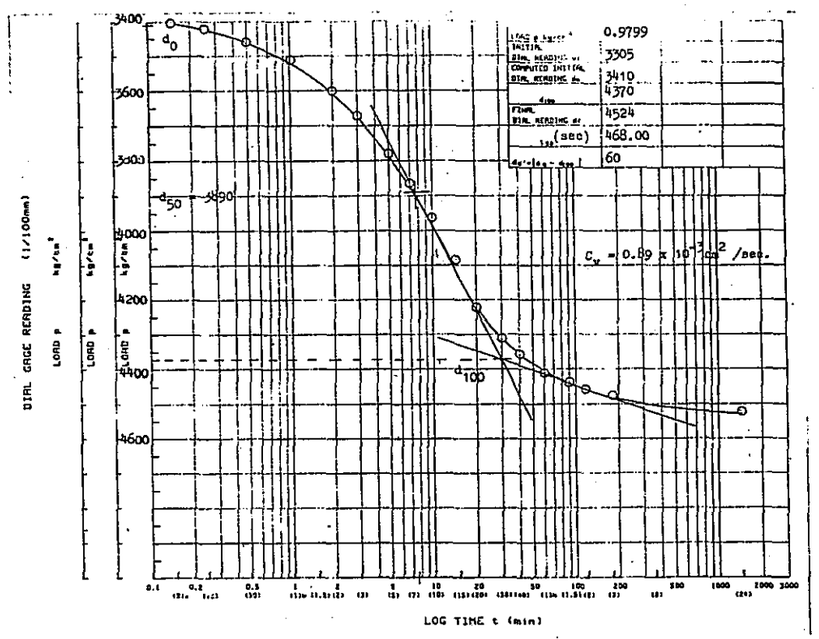


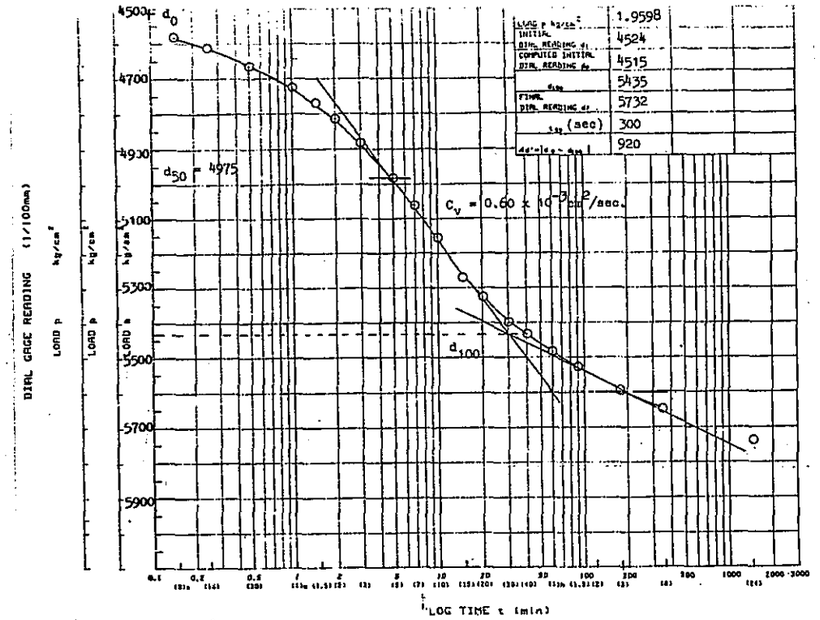


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: **FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT** (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G -25

DIAL READING VS. LOG TIME CURVE

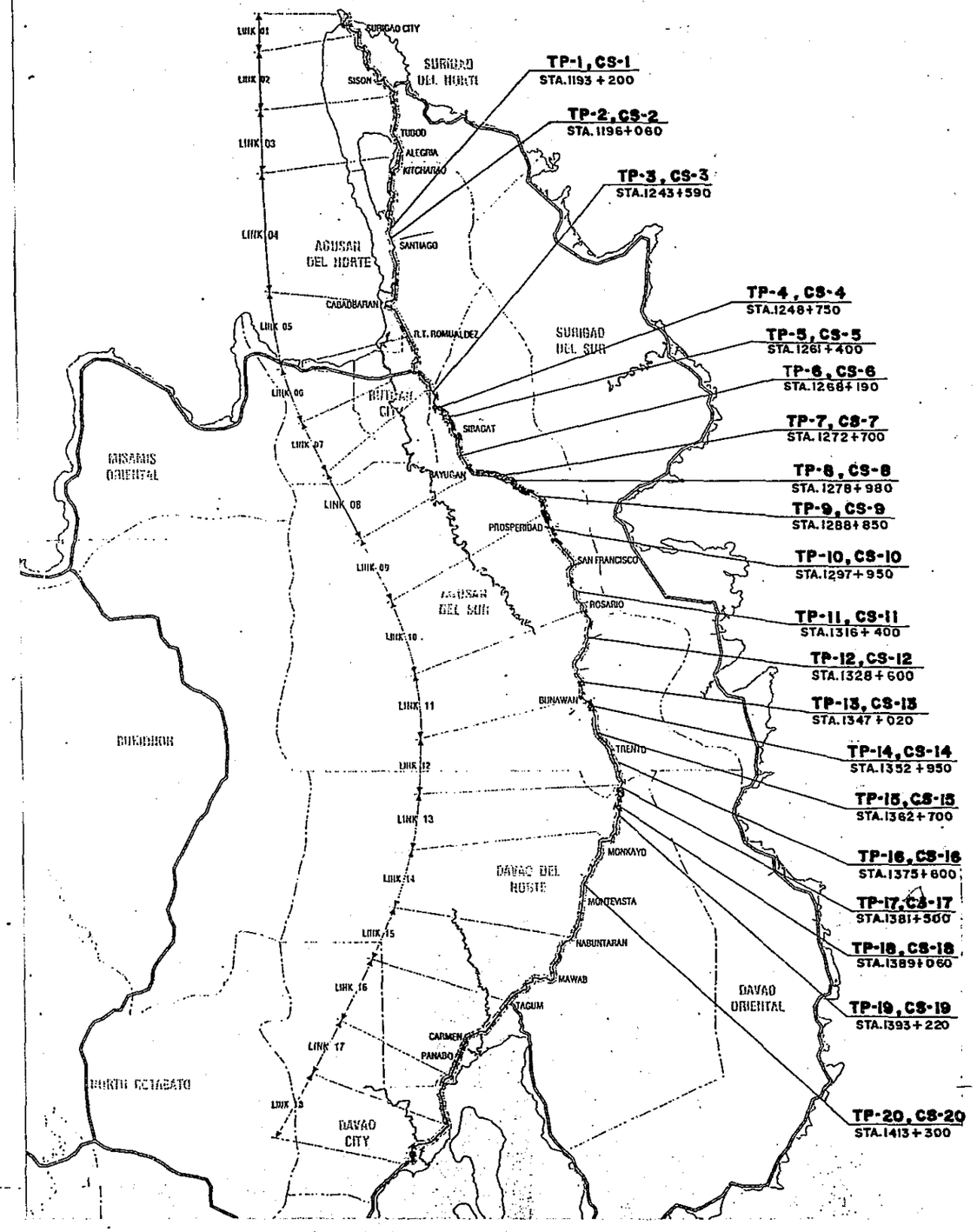
SAMPLE NO:	DEPTH:
BG-5 (UDS-2)	4.00-4.45 m
SAMPLE DESCRIPTION:	
Light gray silty CLAY with wood fibers.	





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: **FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT** (MINDANAO SECTION)	SHEET CONTENTS: CONSOLIDATION TEST RESULTS	SHEET NO.: G – 26

4. PAVEMENT CORING AND SOILS TESTS



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS LOCATION MAP	SHEET NO.: P – 1

BORING NO.	STATION (Km)	SAMPLE NO.	DEPTH (m)	DESCRIPTION	AASHTO CLASS.	GRAIN SIZE ANALYSIS (% Passing Sieve No.)								ATTERBERG LIMITS			NMC (%)	DRY DENSITY (g/cc)	SPECIFIC GRAVITY	COMPACTION		CBR @ % MDD		SWELL % @ 65 Blows
						1 1/2"	1"	3/4"	3/8"	4	10	40	200	LL	PL	PI				OMC (%)	MDD (g/cc)	95	100	
TP-1	1193+200	1	0-0.203	Concrete Pavement																				
		2	0.203-1.50	Gray GRAVEL	A-1-a (0)	73	58	53	36	25	18	3	1	NP	NP	NP	3.17	2.51	3.79	6.00	2.26	30.50	34.20	0.93
TP-2	1196+060	1	0-0.203	Concrete Pavement																				
		2	0.0203-1.50	Brown GRAVEL & SAND.	A-1-a (0)		100	79	69	58	46	12	4	NP	NP	NP	2.28	2.08	2.73	5.25	2.21	29.10	39.10	0.08
TP-3	1243+590	1	0-0.202	Concrete Pavement																				
		2	0.202-0.352	Brown clayey GRAVEL	A-2-6 (0)	58	35	26	19	14	14	11	8	30	18	12	7.54	2.10	2.72	17.50	1.75	9.50	11.50	1.26
		3	0.352-1.50	Brown Siltstone/SHALE	A-7-6 (15)						100	74	74	46	22	24	22.41	1.73	2.69	10.00	1.98	2.32	2.52	8.57
TP-4	1248+750	1	0-0.224	Concrete Pavement																				
		2	0.0224-0.60	Brown sandy GRAVEL	A-1-a (0)	100	86	72	46	41	33	16	6	NP	NP	NP	5.90	2.42	2.75	9.50	2.12	24.20	29.00	0.68
		3	0.60-1.50	Gray clayey SILT	A-7-5 (11)					100	99	98	97	44	29	15	10.50	1.88	2.61	13.50	1.91	6.70	7.40	2.91
TP-5	1261+400	1	0-0.23	Concrete Pavement																				
		2	0.23-0.60	Brown sandy GRAVEL	A-1-a (0)	100	76	63	46	41	36	14	8	NP	NP	NP	5.46	2.05	2.71	8.75	2.04	27.00	47.00	0.06
		3	0.60-1.50	Gray sandy CLAY	A-7-6 (20)				100	99	99	98	76	62	30	32	50.95	1.15	2.70	19.00	1.66	3.28	3.62	2.50
TP-6	1268+190	1	0-0.21	Concrete Pavement																				
		2	0.21-0.60	Brown silty GRAVEL and SAND.	A-1-b (0)		100	91	80	72	62	28	23	NP	NP	NP	8.24	1.82	2.65	5.75	2.23	25.00	29.40	0.28
		3	0.60-1.50	Gray CLAY	A-7-5 (16)							100	99	50	25	25	40.83	1.29	2.67	22.50	1.62	4.20	5.10	3.05
TP-7	1272+700	1	0-0.25	Concrete Pavement																				
		2	0.25-0.60	Brown SAND and GRAVE	A-1-b (0)		100	90	79	69	58	22	17	NP	NP	NP	8.32	1.91	3.83	7.00	2.19	28.00	38.00	0.40
		3	0.60-1.50	Gray sandy CLAY	A-6 (13)						100	91	58	30	18	12	21.80	1.47	2.66	13.50	1.88	12.80	14.50	0.92
TP-8	1278+980	1	0-0.24	Concrete Pavement																				
		2	0.24-0.40	Brown sandy GRAVEL	A-1-a (0)	83	80	72	57	50	42	22	15	NP	NP	NP	5.63	1.74	2.81	5.00	2.25	39.10	48.00	0.11
		3	0.40-1.50	Yellowish brown CLAY	A-7-6 (20)					100	99	98	97	77	34	43	65.17	0.93	2.69	21.50	1.52	1.45	1.52	3.20
TP-9	1288+850	1	0-0.21	Concrete Pavement																				
		2	0.21-0.50	Brown sandy GRAVEL	A -1-b (0)	100	93	79	63	56	45	22	18	NP	NP	NP	6.80	1.95	2.83	8.50	2.08	39.00	46.00	1.03
		3	0.50-1.50	Brown GRAVEL & CLAY	A-7-5 (11)	70	60	60	58	57	54	48	44	54	33	21	21.13	1.49	2.70	20.50	1.55	3.80	4.50	1.45
TP-10	1297+950	1	0-0.18	Concrete Pavement																				
		2	0.18-0.60	Gray GRAVEL & SILT	A-6 (3)		100	84	64	62	60	55	52	NP	NP	NP	3.11	2.51	2.79	8.50	2.03	10.80	11.60	0.50
		3	0.60-1.50	Brown silty CLAY	A-6 (12)			100	98	98	97	91	79	33	32	11	34.75	1.35	2.67	20.50	1.61	1.89	2.18	2.00
TP-11	1316+400	1	0-0.23	Concrete Pavement																				
		2	0.23-0.50	Brown GRAVEL & SAND	A-1-b (0)			100	74	65	57	31	22	NP	NP	NP	9.59	2.31	3.08	8.50	2.18	20.00	38.00	0.20
		3	0.50-1.50	Gray sandy -clayey SILT	A-7-5 (12)				100	97	94	78	72	46	29	17	48.68	1.21	2.69	22.00	1.54	5.60	6.10	4.50
TP-12	1328+600	1	0-0.23	Concrete Pavement																				
		2	0.23-0.60	Brown GRAVEL	A-1-a (0)	72	64	39	22	19	17	11	5	NP	NP	NP	6.81	2.14	2.74	8.75	2.12	27.50	35.50	0.04
		3	0.60-1.50	Brown gravelly-silty CLAY	A-7-5 (12)			100	84	81	78	70	63	48	26	22	34.75	1.13	2.70	18.00	1.75	6.70	7.80	2.75

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: SUMMARY OF TEST RESULTS (TEST PITS)
			SHEET NO.: P – 2

BORING NO.	STATION (Km)	SAMPLE NO.	DEPTH (m)	DESCRIPTION	AASHTO CLASS.	GRAIN SIZE ANALYSIS (% Passing Sieve No.)								ATTERBERG LIMITS			NMC (%)	DRY DENSITY (g/cc)	SPECIFIC GRAVITY	COMPACTION		CBR @ % MDD		SWELL % @ 65 Blows
						1 1/2"	1"	3/4"	3/8"	4	10	40	200	LL	PL	PI				OMC (%)	MDD (g/cc)	95	100	
TP-13	1347+020	1	0-0.19	Concrete Pavement																				
			0.19-1.50	Brown sandy GRAVEL	A-1-a (0)	98	84	75	55	48	32	18	9	NP	NP	NP	9.51	2.23	2.67	9.00	2.13	34.00	48.00	0.39
TP-14	1352+950	1	0-0.22	Concrete Pavement																				
		2	0.22-0.50	Brown sandy GRAVEL	A-1-a (0)	82	69	63	54	43	30	27	10	NP	NP	NP	7.17	2.30	2.70	7.00	2.20	50.00	68.00	0.00
		3	0.50-1.50	Brown sandy CLAY	A-7-5 (9)				100	91	86	64	52	45	20	25	29.84	1.46	2.68	15.75	1.76	3.75	4.30	5.30
TP-15	1362+700	1	0-0.23	Concrete Pavement																				
		2	0.23-0.50	Brown sandy GRAVEL	A-1-a (0)	84	72	66	56	48	33	15	13	NP	NP	NP	5.38	2.09	2.95	7.50	2.17	60.00	73.00	0.03
		3	0.50-1.50	Brown silty CLAY	A-6 (12)				100	96	94	85	79	38	19	19	16.26	1.61	2.64	20.00	1.68	6.70	9.00	1.92
TP-16	1375+600	1	0-0.23	Concrete Pavement																				
		2	0.23-0.90	Brown sandy GRAVEL	A-1-a (0)	100	91	86	66	53	39	13	10	NP	NP	NP	7.20	1.97	2.81	8.50	2.09	39.00	60.00	0.08
		3	0.90-1.50	Gray sandy CLAY	A-6 (8)				100	92	88	71	60	39	21	18	18.05	1.73	2.69	10.75	2.03	5.82	7.10	1.25
TP-17	1381+500	1	0-0.23	Concrete Pavement																				
		2	0.23-1.50	Brown sandy-silty CLAY	A-6 (11)					100	96	91	80	39	21	18	30.86	1.62	2.68	22.00	1.67	3.85	4.00	2.22
TP-18	1389+060	1	0-0.26	Concrete Pavement																				
		2	0.26-0.70	Brown sandy GRAVEL	A-1-a (0)	97	81	68	51	41	31	18	9	NP	NP	NP	7.07	2.17	3.00	9.00	2.06	33.00	52.00	1.14
		3	0.70-1.50	Brown sandy CLAY	A-7-5 (14)				100	99	95	88	69	54	30	24	32.47	1.54	2.68	20.50	1.62	3.35	3.70	6.97
TP-19	1393+220	1	0-0.24	Concrete Pavement																				
		2	0.24-0.80	Brown sandy GRAVEL	A-1-b (0)	100	93	81	65	53	38	20	18	NP	NP	NP	7.30	1.76	2.81	9.25	2.04	40.75	70.00	0.08
		3	0.80-1.50	Brown sandy CLAY	A-7-5 (12)					100	97	91	75	44	25	19	31.04	1.38	2.68	18.00	1.72	3.75	3.95	5.54
TP-20	1413+300	1	0-0.22	Concrete Pavement																				
		2	0.22-0.60	Brown sandy GRAVEL	A-1-b (0)	100	94	87	77	65	55	26	19	NP	NP	NP	8.09	2.30	2.91	5.50	2.24	39.00	61.00	0.04
		3	0.60-1.50	Brown sandy CLAY	A-7-5 (11)				100	98	95	81	67	44	25	19	18.03	1.53	2.70	18.00	1.76	3.30	3.50	6.03

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: SUMMARY OF TEST RESULTS (TEST PITS)	SHEET NO.: P-3

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		1	2	3		4		5		6		7		8	
STATION (Km)		1193+200	1196+060	1243+590		1248+750		1261+400		1268+190		1272+700		1278+980	
DEPTH, (cm)		0.23	0.25	0.23	0.35	0.23	0.60	0.25	0.60	0.25	0.60	0.25	0.60	0.25	0.40
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
SAND+JUG (BEFORE),	g	5815.00	5770.00	5836.00	5695.00	5735.00	5744.00	5868.00	5885.00	5940.00	6025.00	5960.00	5965.00	5966.00	5975.00
SAND+JUG (AFTER),	g	2405.00	1660.00	2640.00	2435.00	1535.00	2315.00	2470.00	2475.00	2015.00	2090.00	2085.00	2085.00	1960.00	2495.00
WEIGHT OF SAND USED,	g	3410.00	4110.00	3196.00	3260.00	4200.00	3429.00	3398.00	3410.00	3925.00	3935.00	3875.00	3880.00	4006.00	3480.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1802.00	2502.00	1588.00	1652.00	2592.00	1821.00	1790.00	1802.00	2317.00	2327.00	2267.00	2272.00	2398.00	1872.00
VOLUME OF HOLE,	cu.cm	1344.78	1867.16	1185.07	1232.84	1934.33	1358.96	1335.82	1344.78	1729.10	1736.57	1691.79	1695.52	1789.55	1397.01
WEIGHT OF WET SOIL,	g	3480.00	3972.00	2670.00	2610.00	4960.00	2825.00	2890.00	2340.00	3400.00	3160.00	3505.00	3036.00	3290.00	2139.00
WET DENSITY,	g/cc	2.59	2.13	2.25	2.12	2.56	2.08	2.16	1.74	1.97	1.82	2.07	1.79	1.84	1.53

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	441.60	222.40	348.00	171.00	196.50	212.40	236.70	235.60	1600.00	479.50	1069.50	560.00	943.50	400.00
WT. OF DRY SOIL+CAN,	g	428.80	218.00	324.70	143.80	186.50	193.80	225.50	161.60	1487.70	370.00	994.30	478.60	898.00	270.90
WEIGHT OF CAN,	g	24.73	24.85	15.75	22.40	17.07	16.71	20.45	16.35	124.20	101.80	90.80	105.20	90.50	72.80
MOISTURE LOSS,	g	12.80	4.40	23.30	27.20	10.00	18.60	11.20	74.00	112.30	109.50	75.20	81.40	45.50	129.10
WEIGHT OF DRY SOIL,	g	404.07	193.15	308.95	121.40	169.43	177.09	205.05	145.25	1363.50	268.20	903.50	373.40	807.50	198.10
MOISTURE CONTENT,	%	3.17	2.28	7.54	22.41	5.90	10.50	5.46	50.95	8.24	40.83	8.32	21.80	5.63	65.17
DRY DENSITY,	g/cc	2.51	2.08	2.10	1.73	2.42	1.88	2.05	1.15	1.82	1.29	1.91	1.47	1.74	0.93

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.59	2.13	2.25	2.12	2.56	2.08	2.16	1.74	1.97	1.82	2.07	1.79	1.84	1.53
DRY DENSITY,	g/cc	2.51	2.08	2.10	1.73	2.42	1.88	2.05	1.15	1.82	1.29	1.91	1.47	1.74	0.93
MAXIMUM DRY DENSITY,	g/cc	2.26	2.21	1.75	1.98	2.12	1.91	2.04	1.66	2.23	1.62	2.19	1.88	2.25	1.52
OPT. MOISTURE CONTENT,	%	6.00	5.25	17.50	10.00	9.50	13.50	8.75	1.90	5.75	22.50	7.00	18.24	5.00	21.50
PERCENT COMPACTION		110.99	94.11	119.72	87.35	114.21	98.49	100.56	69.44	81.47	79.76	87.33	78.20	77.35	60.99

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		9		10		11		12		13	14		15	
STATION (Km)		1288+850		1297+950		1316+400		1328+600		1347+020	1352+950		1362+500	
DEPTH, (cm)		0.25	0.50	0.20	0.60	0.25	0.50	0.25	0.60	0.20	0.25	0.50	0.25	0.50
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
SAND+JUG (BEFORE),	g	5770.00	5980.00	5760.00	5725.00	5840.00	5890.00	5950.00	5900.00	5850.00	6010.00	6000.00	5960.00	5940.00
SAND+JUG (AFTER),	g	2275.00	2255.00	2345.00	2483.00	2555.00	1920.00	2535.00	2185.00	2130.00	2380.00	2520.00	2295.00	2430.00
WEIGHT OF SAND USED,	g	3495.00	3725.00	3415.00	3242.00	3285.00	3970.00	3415.00	3715.00	3720.00	3630.00	3480.00	3665.00	3510.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1887.00	2117.00	1807.00	1634.00	1677.00	2362.00	1807.00	2107.00	2112.00	2022.00	1872.00	2057.00	1902.00
VOLUME OF HOLE,	cu.cm	1408.21	1579.85	1348.51	1219.40	1251.49	1762.69	1348.51	1572.39	1576.12	1508.96	1397.01	1535.07	1419.40
WEIGHT OF WET SOIL,	g	2940.00	2842.00	3495.00	2220.00	3173.00	3175.00	3087.00	2389.00	3845.00	3715.00	2640.00	3386.00	2650.00
WET DENSITY,	g/cc	2.09	1.80	2.59	1.82	2.54	1.80	2.29	1.52	2.44	2.46	1.89	2.21	1.87

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1430.00	573.50	308.60	172.00	173.70	151.10	194.00	151.30	172.50	1505.50	241.50	1509.50	327.50
WT. OF DRY SOIL+CAN,	g	1345.60	492.30	300.00	130.70	160.00	106.80	182.70	116.50	159.00	1412.00	190.00	1437.00	285.00
WEIGHT OF CAN,	g	105.00	108.00	23.66	11.86	17.15	15.79	16.66	16.35	17.08	107.40	17.39	90.50	23.60
MOISTURE LOSS,	g	84.40	81.20	8.60	41.30	13.70	44.30	11.30	34.80	13.50	93.50	51.50	72.50	42.50
WEIGHT OF DRY SOIL,	g	1240.60	384.30	276.34	118.84	142.85	91.01	166.04	100.15	141.92	1304.60	172.61	1346.50	261.40
MOISTURE CONTENT,	%	6.80	21.13	3.11	34.75	9.59	48.68	6.81	34.75	9.51	7.17	29.84	5.38	16.26
DRY DENSITY,	g/cc	1.95	1.49	2.51	1.35	2.31	1.21	2.14	1.13	2.23	2.30	1.46	2.09	1.61

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.09	1.80	2.59	1.82	2.54	1.80	2.29	1.52	2.44	2.46	1.89	2.21	1.87
DRY DENSITY,	g/cc	1.95	1.49	2.51	1.35	2.31	1.21	2.14	1.13	2.23	2.30	1.46	2.09	1.61
MAXIMUM DRY DENSITY,	g/cc	2.08	1.55	2.03	1.61	2.18	1.54	2.12	1.75	2.13	2.20	1.76	2.17	1.68
OPT. MOISTURE CONTENT,	%	8.50	20.50	8.50	20.50	8.50	22.00	8.75	18.00	9.00	7.00	15.75	7.50	20.00
PERCENT COMPACTION		93.98	95.81	123.82	83.92	106.12	78.67	101.10	64.43	104.58	104.42	82.70	96.45	95.59

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		16		17	18		19		20	
STATION (Km)		1375+600		1381+500	1389+060		1393+220		1413+300	
DEPTH, (cm)		0.25	0.90	0.25	0.30	0.70	0.25	0.80	0.25	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
SAND+JUG (BEFORE),	g	5940.00	5935.00	5970.00	6000.00	5915.00	5950.00	5976.00	5925.00	5975.00
SAND+JUG (AFTER),	g	2395.00	2695.00	2275.00	2342.00	2215.00	2241.00	2010.00	2600.00	2375.00
WEIGHT OF SAND USED,	g	3545.00	3240.00	3695.00	3658.00	3700.00	3709.00	3966.00	3325.00	3600.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1937.00	1632.00	2087.00	2050.00	2092.00	2101.00	2358.00	1717.00	1992.00
VOLUME OF HOLE,	cu.cm	1445.52	1217.91	1557.46	1529.85	1561.19	1567.91	1759.70	1281.34	1486.57
WEIGHT OF WET SOIL,	g	3045.00	2493.00	3310.00	3561.00	3175.00	2962.00	3182.00	3200.00	2680.00
WET DENSITY,	g/cc	2.11	2.05	2.13	2.33	2.03	1.89	1.81	2.50	1.80

LABORATORY DATA:

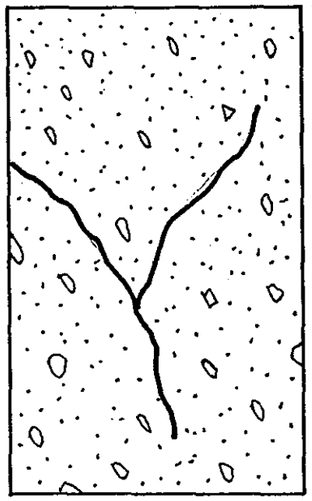
WT. OF WET SOIL+CAN,	g	1123.00	292.00	266.50	1728.50	200.00	1108.00	212.50	1132.50	516.00
WT. OF DRY SOIL+CAN,	g	1051.80	251.50	207.30	1621.00	155.00	1040.50	166.10	1061.00	453.60
WEIGHT OF CAN,	g	62.50	27.15	15.46	101.50	16.40	115.70	16.62	177.30	107.60
MOISTURE LOSS,	g	71.20	40.50	59.20	107.50	45.00	67.50	46.40	71.50	62.40
WEIGHT OF DRY SOIL,	g	989.30	224.35	191.84	1519.50	138.60	924.80	149.48	883.70	346.00
MOISTURE CONTENT,	%	7.20	18.05	30.86	7.07	32.47	7.30	31.04	8.09	18.03
DRY DENSITY,	g/cc	1.97	1.73	1.62	2.17	1.54	1.76	1.38	2.31	1.53

LABORATORY COMPACTION:

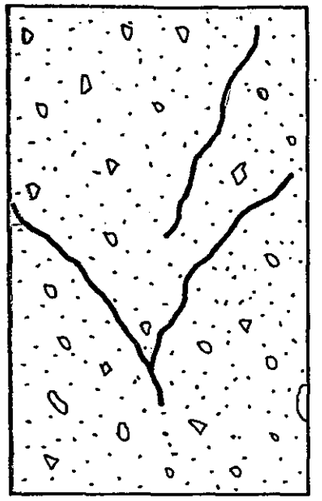
WET DENSITY,	g/cc	2.11	2.05	2.13	2.33	2.03	1.89	1.81	2.50	1.80
DRY DENSITY,	g/cc	1.97	1.73	1.62	2.17	1.54	1.76	1.38	2.31	1.53
MAXIMUM DRY DENSITY,	g/cc	2.09	2.03	1.67	2.06	1.62	2.04	1.72	2.24	1.76
OPT. MOISTURE CONTENT,	%	8.50	10.75	22.00	9.00	20.50	9.25	18.00	9.25	18.00
PERCENT COMPACTION		94.02	85.42	97.25	105.53	94.77	86.31	80.23	103.14	86.78

TEST REPORT ON CORED CONCRETE SAMPLE

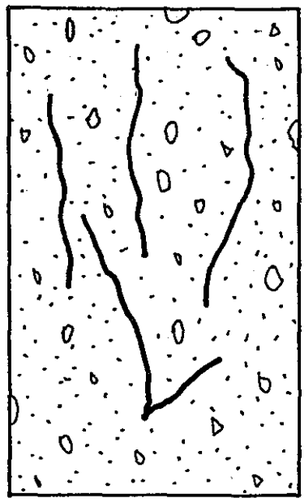
Core Sample I.D.	Location of Core	Diameter of Core (in.)	Length after Capping (in.)	L/D	Strength Correction Factor	Cross-Sectional Area, (sq. in.)	Compressive Load (lbs.)	Compressive Strength (psi)	Corrected Compressive Strength, (psi)
CS-1	Sta. 1193+200	3.938	5.375	1.36	0.944	12.180	77000	6322	5968
CS-2	Sta. 1196+060	3.938	6.750	1.71	0.977	12.180	58000	4762	4652
CS-3	Sta. 1243+590	3.938	6.563	1.67	0.974	12.180	42000	3448	3359
CS-4	Sta. 1248+750	3.938	7.875	2.00	1.000	12.180	38000	3120	3120
CS-5	Sta. 1261+400	3.938	7.000	1.78	0.983	12.180	39000	3202	3148
CS-6	Sta. 1268+190	3.938	7.625	1.94	1.000	12.180	42000	3448	3448
CS-7	Sta. 1272+700	3.938	8.250	2.09	1.000	12.180	16000	1314	1314
CS-8	Sta. 1278+980	3.938	8.438	2.14	1.000	12.180	43000	3530	3530
CS-9	Sta. 1288+850	3.938	8.375	2.13	1.000	12.180	18000	1478	1478
CS-10	Sta. 1297+950	3.938	5.938	1.51	0.961	12.180	44000	3613	3472
CS-11	Sta. 1316+400	3.938	7.813	1.98	1.000	12.180	38000	3120	3120
CS-12	Sta. 1328+600	3.938	7.875	2.00	1.000	12.180	21000	1724	1724
CS-13	Sta. 1347+020	3.938	6.563	1.67	1.000	12.180	40000	3284	3284
CS-14	Sta. 1352+950	3.938	8.250	2.09	0.974	12.180	47000	3859	3759
CS-15	Sta. 1362+700	3.938	8.140	2.07	1.000	12.180	44000	3613	3613
CS-16	Sta. 1375+600	3.938	8.375	2.13	1.000	12.180	31000	2545	2545
CS-17	Sta. 1381+500	3.938	8.625	2.19	1.000	12.180	35000	2874	2874
CS-18	Sta. 1389+060	3.938	8.688	2.21	1.000	12.180	30000	2463	2463
CS-19	Sta. 1393+220	3.938	8.875	2.25	1.000	12.180	36000	2956	2956
CS-20	Sta. 1413+300	3.938	8.000	2.03	1.000	12.180	56000	4598	4598



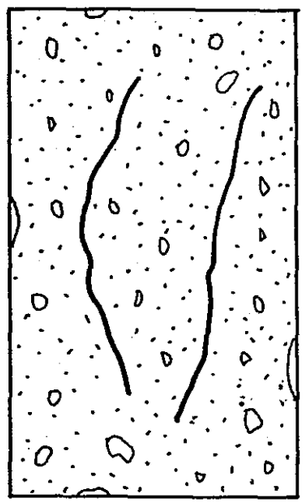
CS-1
STA. 1193 + 200



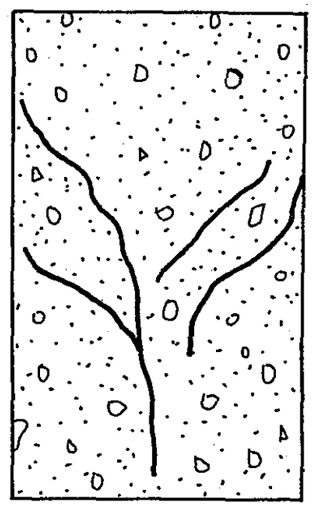
CS-2
STA. 1196 + 060



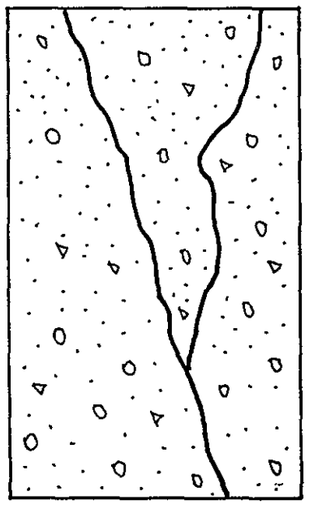
CS-3
STA. 1243 + 590



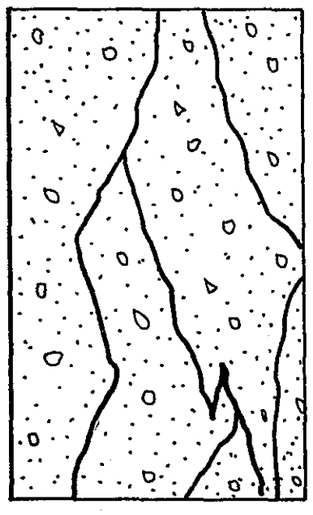
CS-4
STA. 1248 + 750



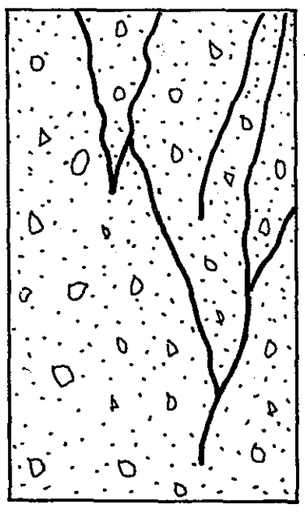
CS-5
STA. 1261 + 400



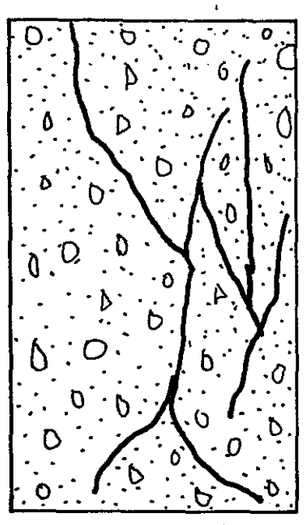
CS-6
STA. 1268 + 190



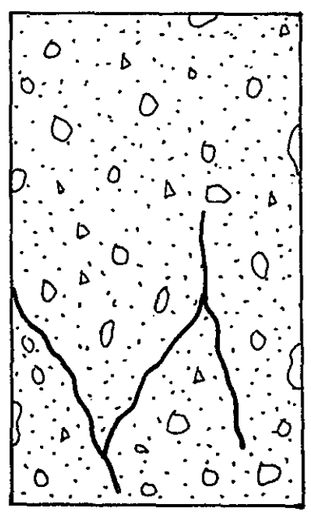
CS-7
STA. 1272 + 700



CS-8
STA. 1278 + 980

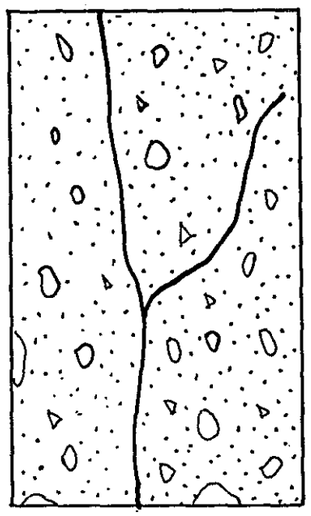


CS-9
STA. 1288 + 850

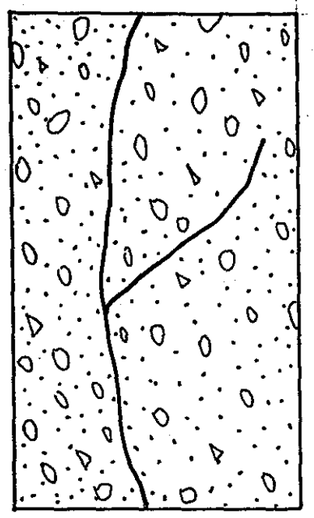


CS-10
STA. 1297 + 950

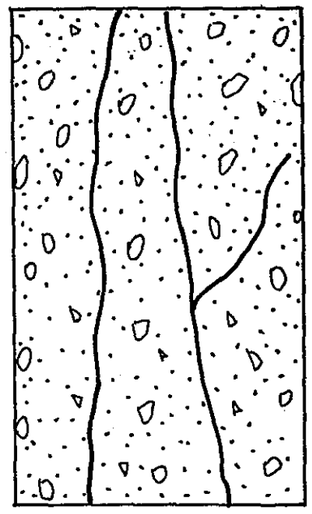
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: **FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT** (MINDANAO SECTION)	SHEET CONTENTS:	SHEET NO.: P – 8



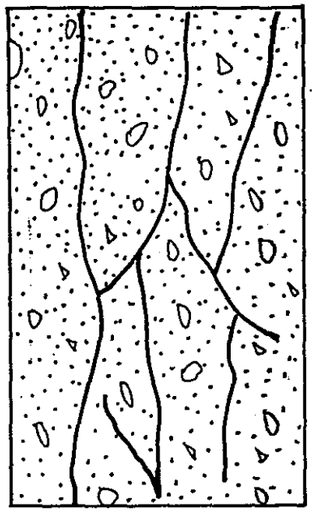
CS-11
STA.1316+400



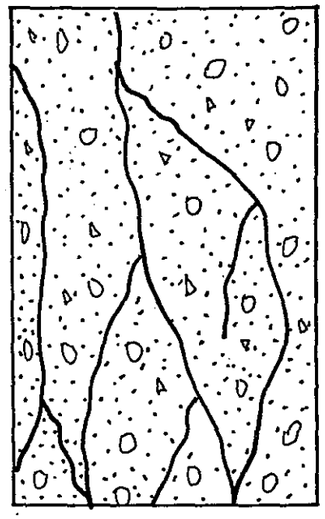
CS-12
STA.1328+600



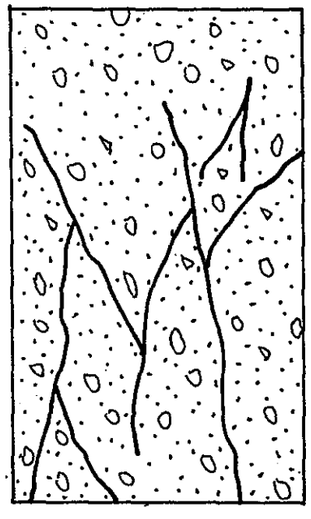
CS-13
STA.1347+020



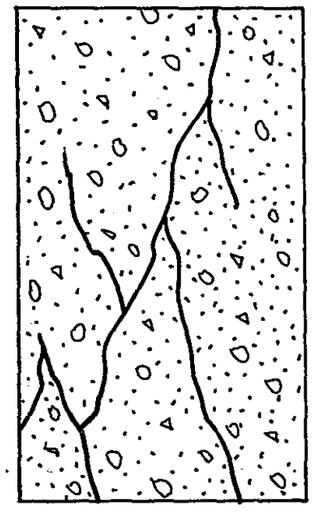
CS-14
STA.1357+950



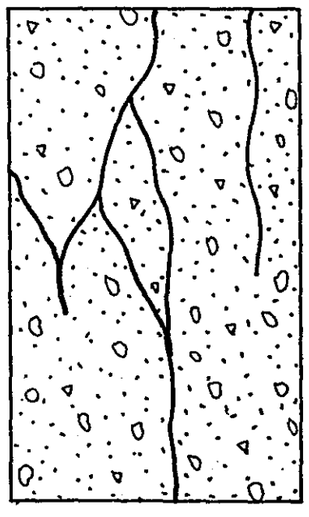
CS-15
STA.1362+700



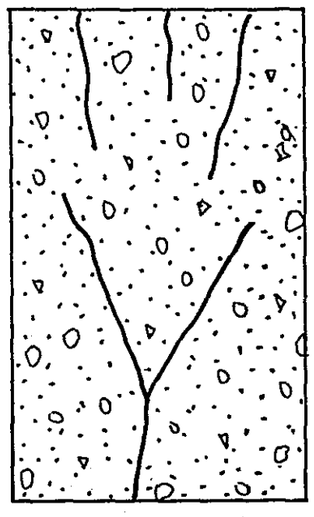
CS-16
STA.1375+600



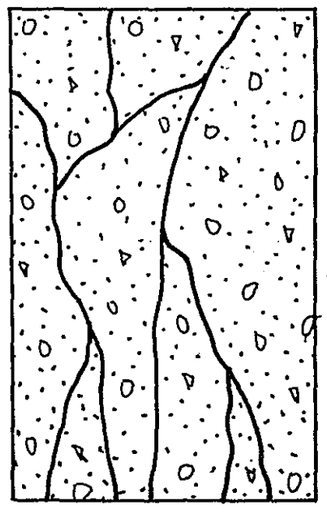
CS-17
STA.1381+500



CS-18
STA.1389+060

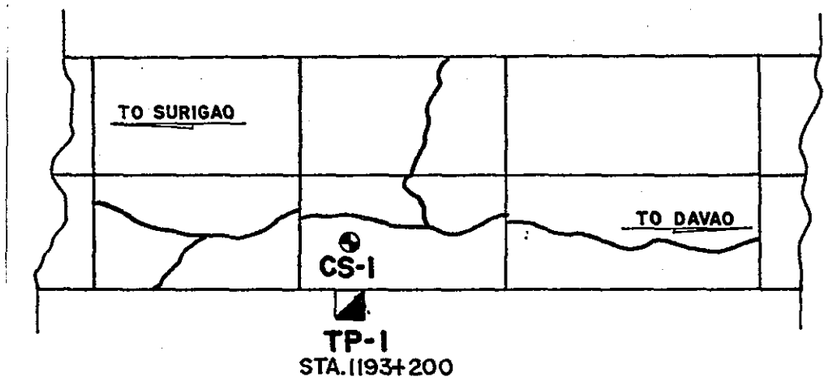


CS-19
STA.1393+220



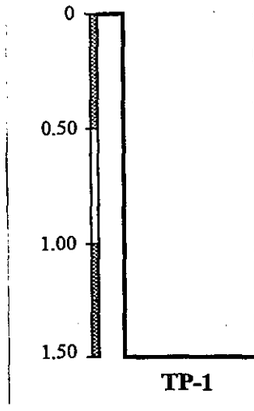
CS-20
STA.1413+300

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS:	SHEET NO.: P - 9



FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
20.3	10.0	1.365	5968

MODE OF FAILURE



SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.203				
	Gray GRAVEL with little amt. of sand, traces of silt.	1.30	NP	NP	NP	A-1-a (0)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.	1
STATION (Km)	1193+200
DEPTH, (cm)	0.23

UNIT WEIGHT OF SAND,	g/cc	1.34
SAND+JUG (BEFORE),	g	5815.00
SAND+JUG (AFTER),	g	2405.00
WEIGHT OF SAND USED,	g	3410.00
WEIGHT OF SAND IN CONE,	g	1608.00
WEIGHT OF SAND IN HOLE,	g	1802.00
VOLUME OF HOLE,	cu.cm	1344.78
WEIGHT OF WET SOIL,	g	3480.00
WET DENSITY,	g/cc	2.59

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	441.60
WT. OF DRY SOIL+CAN,	g	428.80
WEIGHT OF CAN,	g	24.73
MOISTURE LOSS,	g	12.80
WEIGHT OF DRY SOIL,	g	404.07
MOISTURE CONTENT,	%	3.17
DRY DENSITY,	g/cc	2.51

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.59
DRY DENSITY,	g/cc	2.51
MAXIMUM DRY DENSITY,	g/cc	2.26
OPT. MOISTURE CONTENT,	%	6.00
PERCENT COMPACTION		110.99

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 10

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-1 (Sta. 1193+200)	0.23-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brownish gray coarse GRAVEL.		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

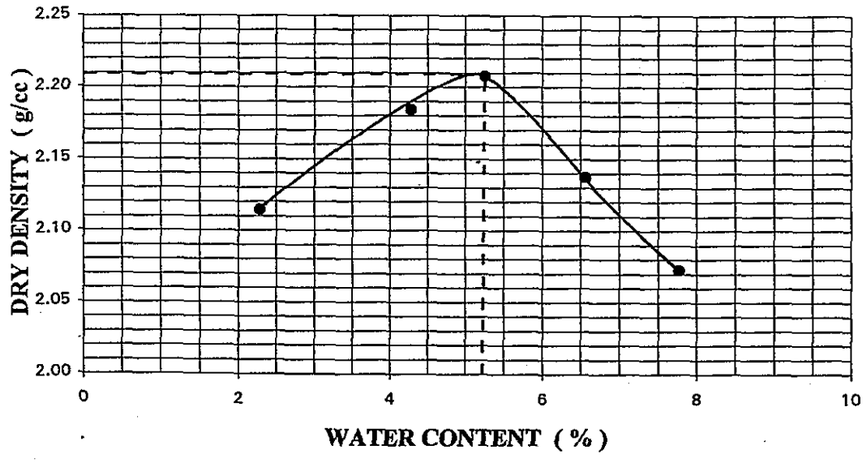
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		LITO	R	363	7	354	G19	398	283	3-X	1019
WT. OF CAN+WET SOIL,	g	124.70	124.50	133.50	136.50	156.50	149.50	151.50	155.50	167.30	170.50
WT. OF CAN+DRY SOIL,	g	122.50	122.20	128.40	131.90	150.10	142.70	143.20	147.50	156.10	160.10
WT. OF WATER,	g	2.20	2.30	5.10	4.60	6.40	6.80	8.30	8.00	11.20	10.40
WT. OF CAN,	g	23.80	24.50	16.70	16.90	26.20	15.70	24.50	17.00	16.50	22.00
WT. OF DRY SOIL,	g	98.70	97.70	111.70	115.00	123.90	127.00	118.70	130.50	139.60	138.10
WATER CONTENT,	%	2.23	2.35	4.57	4.00	5.17	5.35	6.99	6.13	8.02	7.53

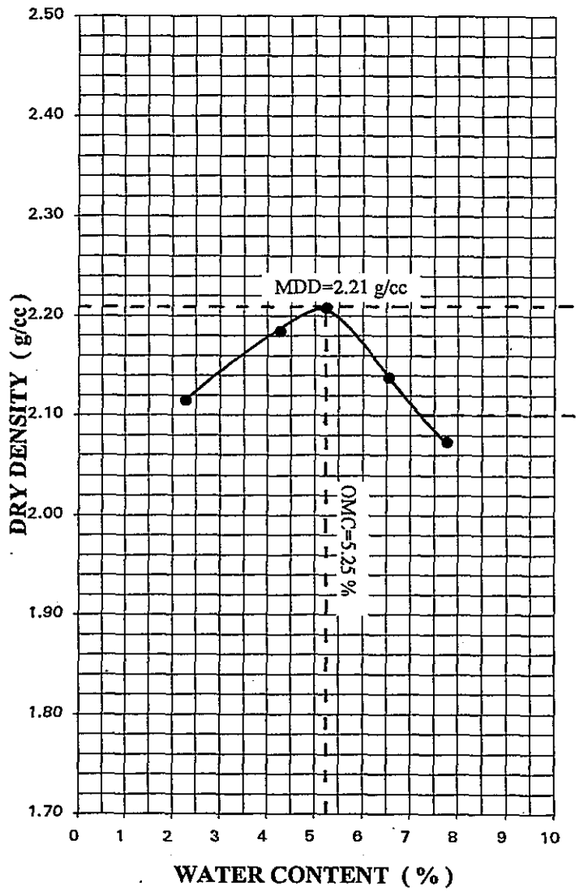
DENSITY DETERMINATION

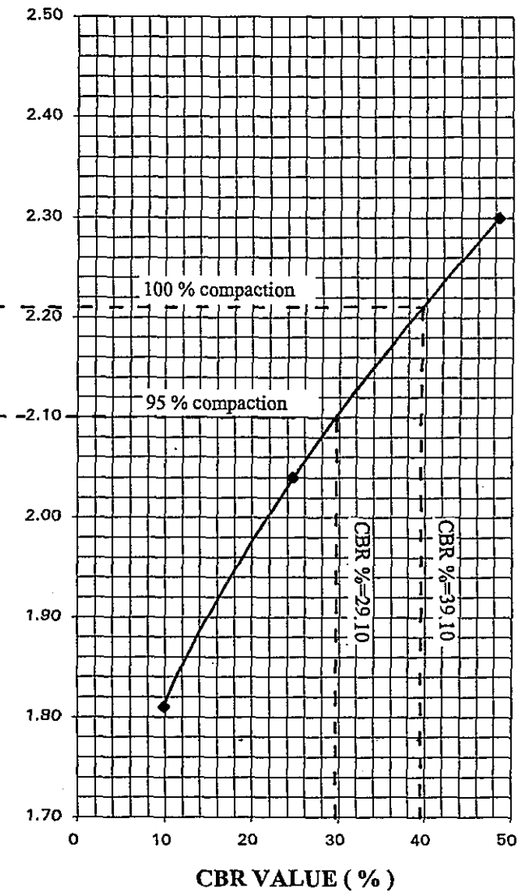
AVE. WATER CONTENT,	%	2.29	4.28	5.26	6.56	7.78
WT. OF SOIL+MOLD,	g	11100	11350	11450	11350	11255
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4705	4955	5055	4955	4860
WET DENSITY,	g/cc	2.16	2.28	2.32	2.28	2.23
DRY DENSITY,	g/cc	2.11	2.18	2.21	2.14	2.07



MAXIMUM DRY DENSITY : 2.21 g/cc OPTIMUM MOISTURE CONTENT = 5.25 %

COMPACTION - CBR RELATION

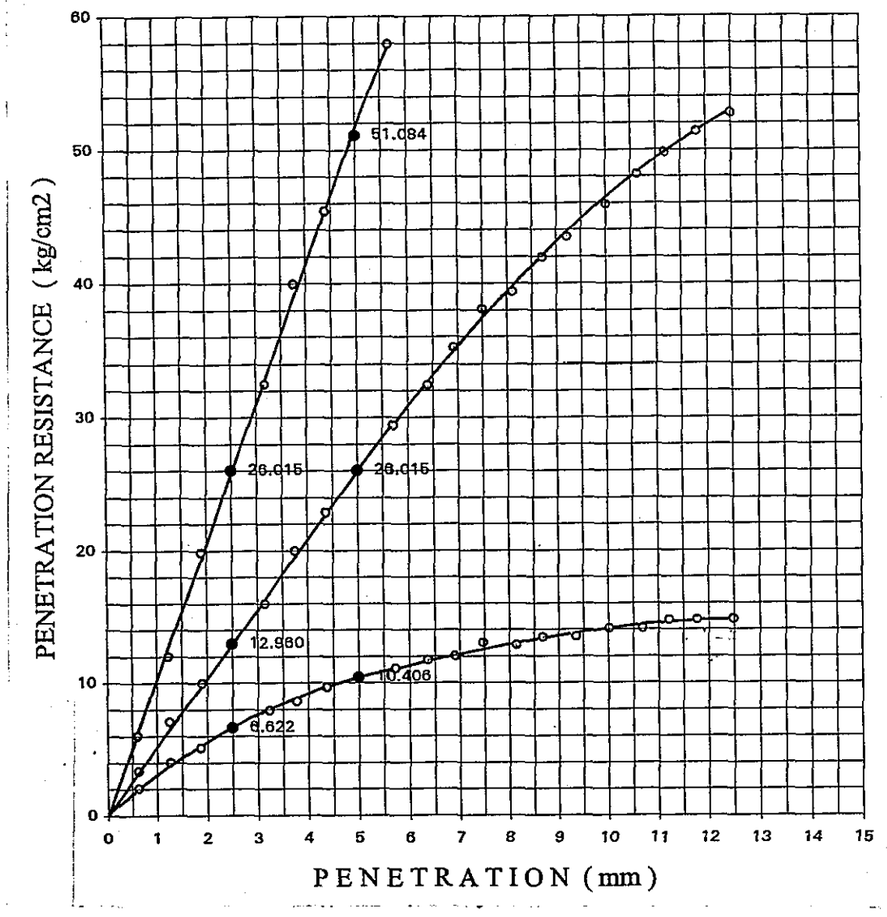




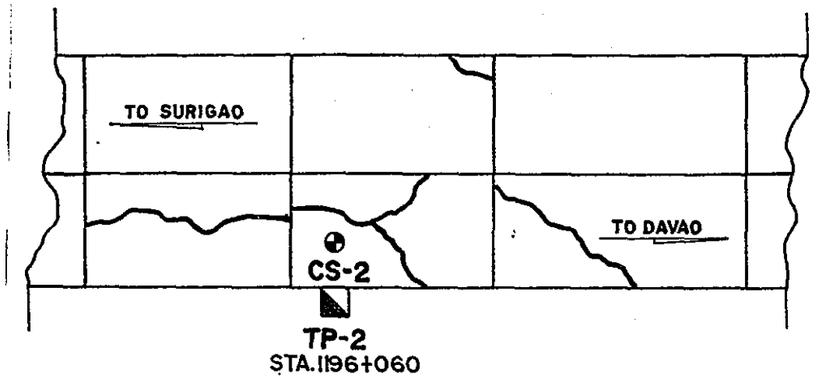
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 11

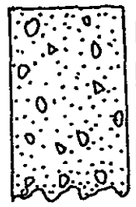
CBR PENETRATION RESISTANCE GRAPH

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-1 (Sta. 1193+200)	0.23-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brownish gray coarse GRAVEL.		A-1-a (0)

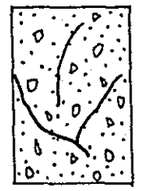


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 12

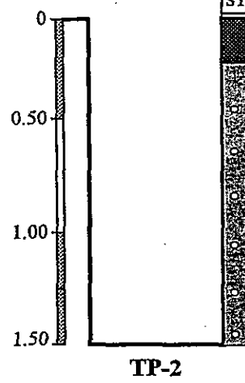




FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
20.3	10.0	1.714	4652



MODE OF FAILURE



SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.203				
	Brown GRAVEL & SAND, traces of silt.	1.30	NP	NP	NP	A-1-a (0)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.	2
STATION (Km)	1196+060
DEPTH, (cm)	0.25

UNIT WEIGHT OF SAND,	g/cc	1.34
SAND+JUG (BEFORE),	g	5770.00
SAND+JUG (AFTER),	g	1660.00
WEIGHT OF SAND USED,	g	4110.00
WEIGHT OF SAND IN CONE,	g	1608.00
WEIGHT OF SAND IN HOLE,	g	2502.00
VOLUME OF HOLE,	cu.cm	1867.16
WEIGHT OF WET SOIL,	g	3972.00
WET DENSITY,	g/cc	2.13

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	222.40
WT. OF DRY SOIL+CAN,	g	218.00
WEIGHT OF CAN,	g	24.85
MOISTURE LOSS,	g	4.40
WEIGHT OF DRY SOIL,	g	193.15
MOISTURE CONTENT,	%	2.28
DRY DENSITY,	g/cc	2.08

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.13
DRY DENSITY,	g/cc	2.08
MAXIMUM DRY DENSITY,	g/cc	2.21
OPT. MOISTURE CONTENT,	%	5.25
PERCENT COMPACTION		94.11

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P-13

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-2 (Sta. 1196+060)	0.23-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown coarse GRAVEL and SAND		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

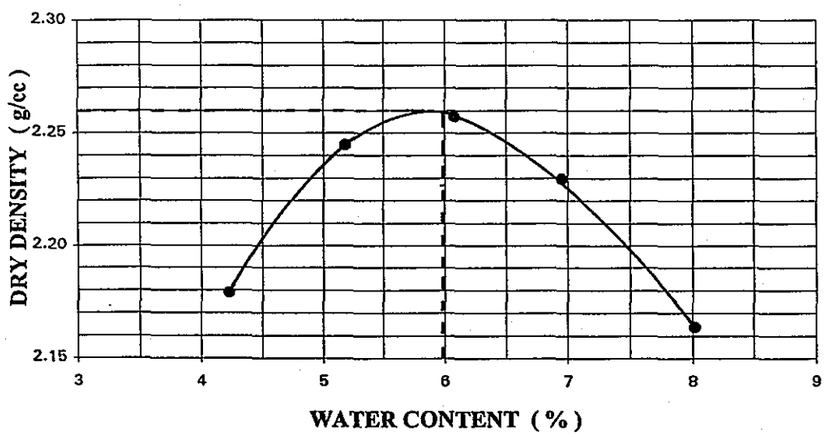
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		1071	1059	147	134	1066	1075	194	205	188	159
WT. OF CAN+WET SOIL,	g	111.40	111.80	130.70	133.10	151.60	151.40	172.60	172.00	192.20	193.50
WT. OF CAN+DRY SOIL,	g	107.00	108.00	126.70	125.40	146.00	141.00	161.40	162.40	178.70	180.20
WT. OF WATER,	g	4.40	3.80	4.00	7.70	5.60	10.40	11.20	9.60	13.50	13.30
WT. OF CAN,	g	10.30	10.60	11.80	13.70	11.20	11.20	12.20	12.40	12.70	12.00
WT. OF DRY SOIL,	g	96.70	97.40	114.90	111.70	134.80	129.80	149.20	150.00	166.00	168.20
WATER CONTENT,	%	4.55	3.90	3.48	6.89	4.15	8.01	7.51	6.40	8.13	7.91

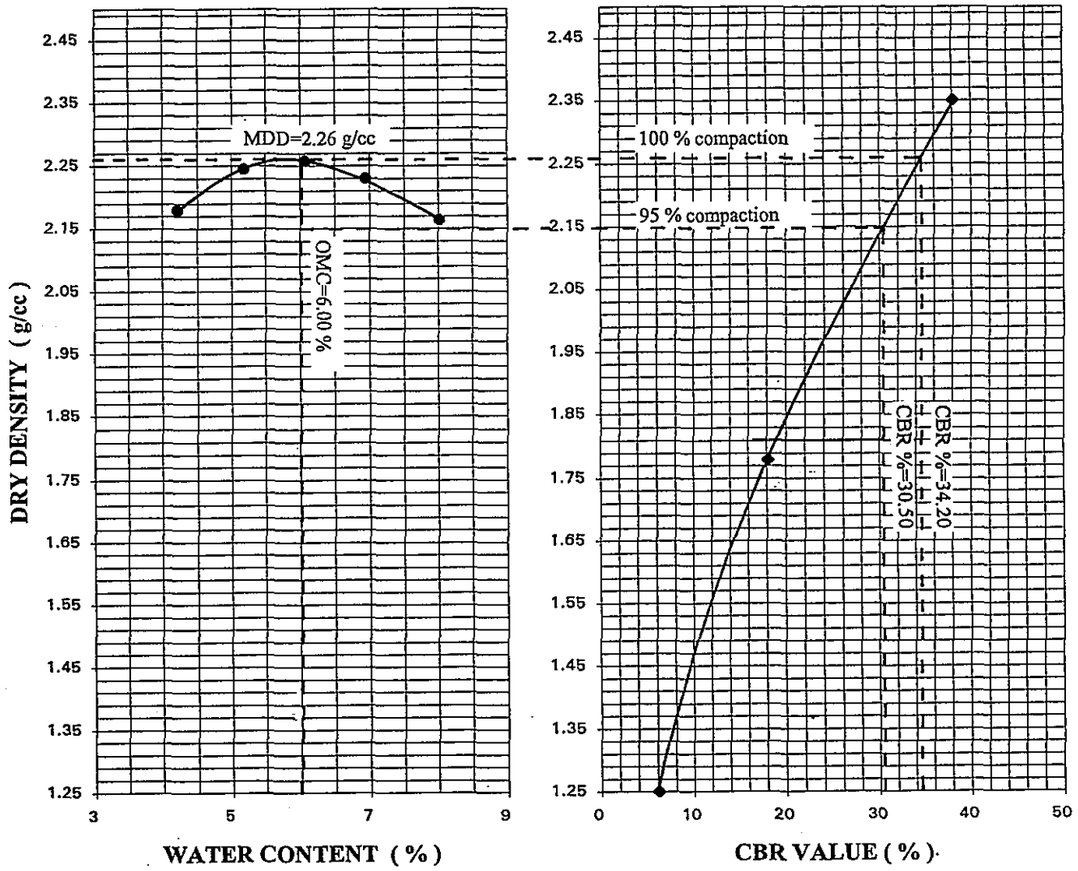
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	4.23	5.19	6.08	6.95	8.02
WT. OF SOIL+MOLD,	g	12360	12550	12620	12600	12500
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4780	4970	5040	5020	4920
WET DENSITY,	g/cc	2.27	2.36	2.39	2.38	2.34
DRY DENSITY,	g/cc	2.18	2.24	2.26	2.23	2.16



MAXIMUM DRY DENSITY 2.26 g/cc OPTIMUM MOISTURE CONTENT = 6.00 %

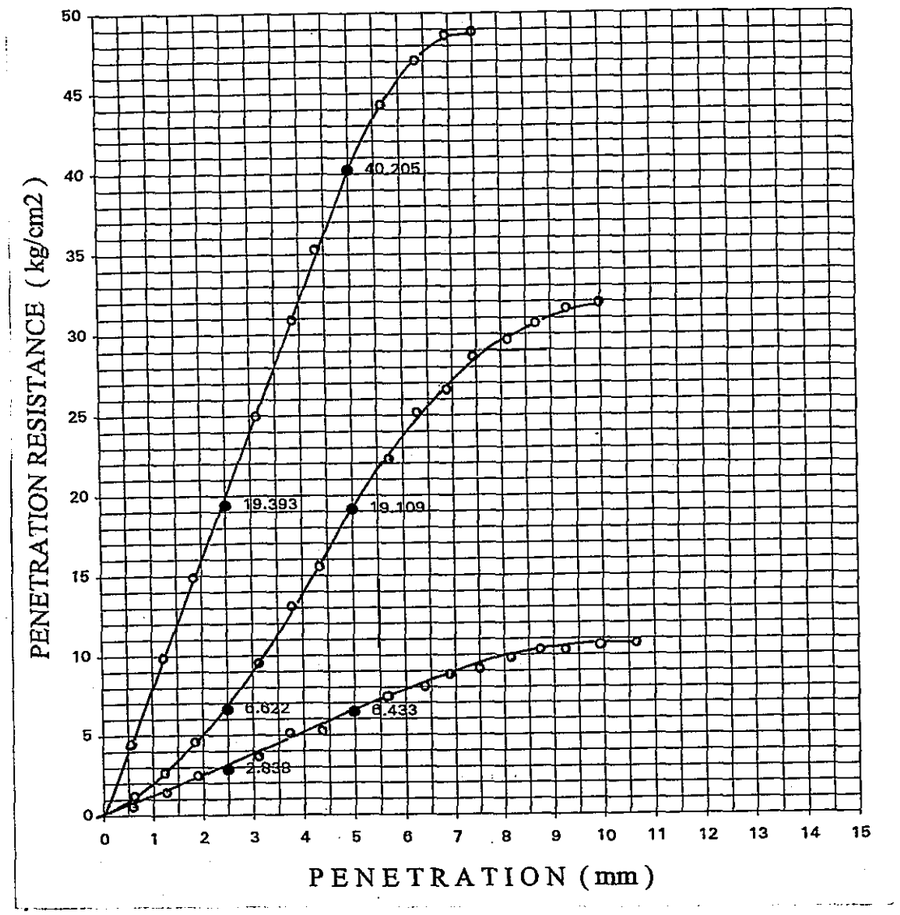
COMPACTION - CBR RELATION



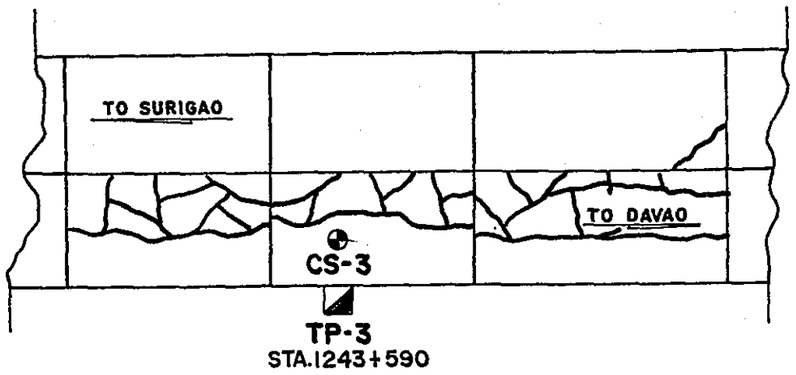
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P - 14

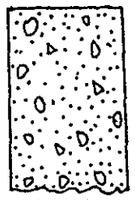
CBR PENETRATION RESISTANCE GRAPH

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-2 (Sta. 1196+060)	0.23-1.50	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown coarse GRAVEL and SAND		A-1-a (0)



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES: DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P– 15

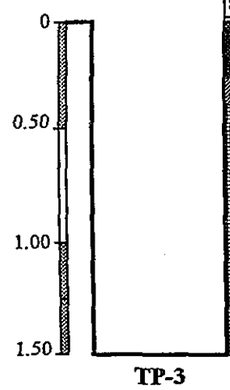




CS-3

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
20.2	10.0	1.667	3358

MODE OF FAILURE



TP-3

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.202				
	Brown clayey GRAVEL	0.15	30	18	12	A-2-6 (0)
	Weathered SILTSTONE/ SHALE.	1.15	46	22	24	A-7-6 (15)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:			
TEST PIT NO.		3	
STATION (Km)		1243+590	
DEPTH, (cm)		0.23	0.35
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5836.00	5695.00
SAND+JUG (AFTER),	g	2640.00	2435.00
WEIGHT OF SAND USED,	g	3196.00	3260.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1588.00	1652.00
VOLUME OF HOLE,	cu.cm	1185.07	1232.84
WEIGHT OF WET SOIL,	g	2670.00	2610.00
WET DENSITY,	g/cc	2.25	2.12

LABORATORY DATA:			
WT. OF WET SOIL+CAN,	g	348.00	171.00
WT. OF DRY SOIL+CAN,	g	324.70	143.80
WEIGHT OF CAN,	g	15.75	22.40
MOISTURE LOSS,	g	23.30	27.20
WEIGHT OF DRY SOIL,	g	308.95	121.40
MOISTURE CONTENT,	%	7.54	22.41
DRY DENSITY,	g/cc	2.10	1.73

LABORATORY COMPACTION:			
WET DENSITY,	g/cc	2.25	2.12
DRY DENSITY,	g/cc	2.10	1.73
MAXIMUM DRY DENSITY,	g/cc	1.75	1.98
OPT. MOISTURE CONTENT,	%	17.50	10.00
PERCENT COMPACTION		119.72	87.35

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P–16

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-3 (Sta. 1243+590)	0.22-0.35 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown clayey GRAVEL		A-2-6 (0)

COMPACTION TEST

MOLD DIMENSIONS:

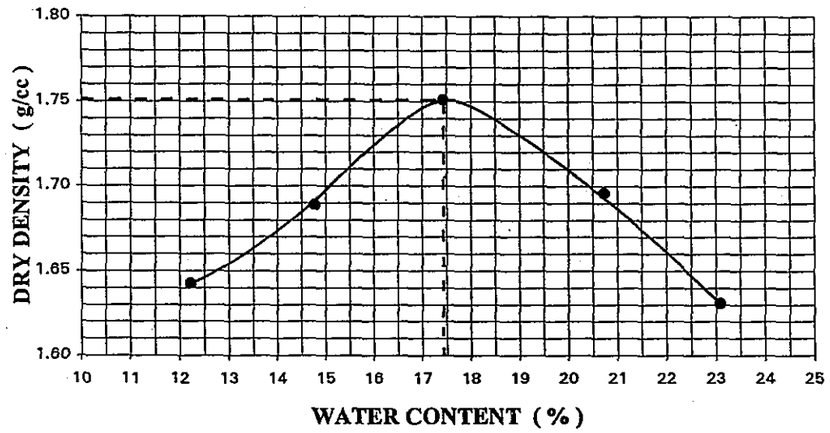
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		283	7SEAS	625	G33	O	282	3X	103	98	127
WT. OF CAN+WET SOIL,	g	69.90	90.00	61.20	79.40	98.40	100.20	111.10	121.00	146.00	154.70
WT. OF CAN+DRY SOIL,	g	64.60	81.40	55.00	71.60	86.70	89.00	95.20	103.60	122.00	132.20
WT. OF WATER,	g	5.30	8.60	6.20	7.80	11.70	11.20	15.90	17.40	24.00	22.50
WT. OF CAN,	g	16.90	17.00	14.60	16.70	20.00	24.40	15.90	22.40	27.50	23.90
WT. OF DRY SOIL,	g	47.70	64.40	40.40	54.90	66.70	64.60	79.30	81.20	94.50	108.30
WATER CONTENT,	%	11.11	13.35	15.35	14.21	17.54	17.34	20.05	21.43	25.40	20.78

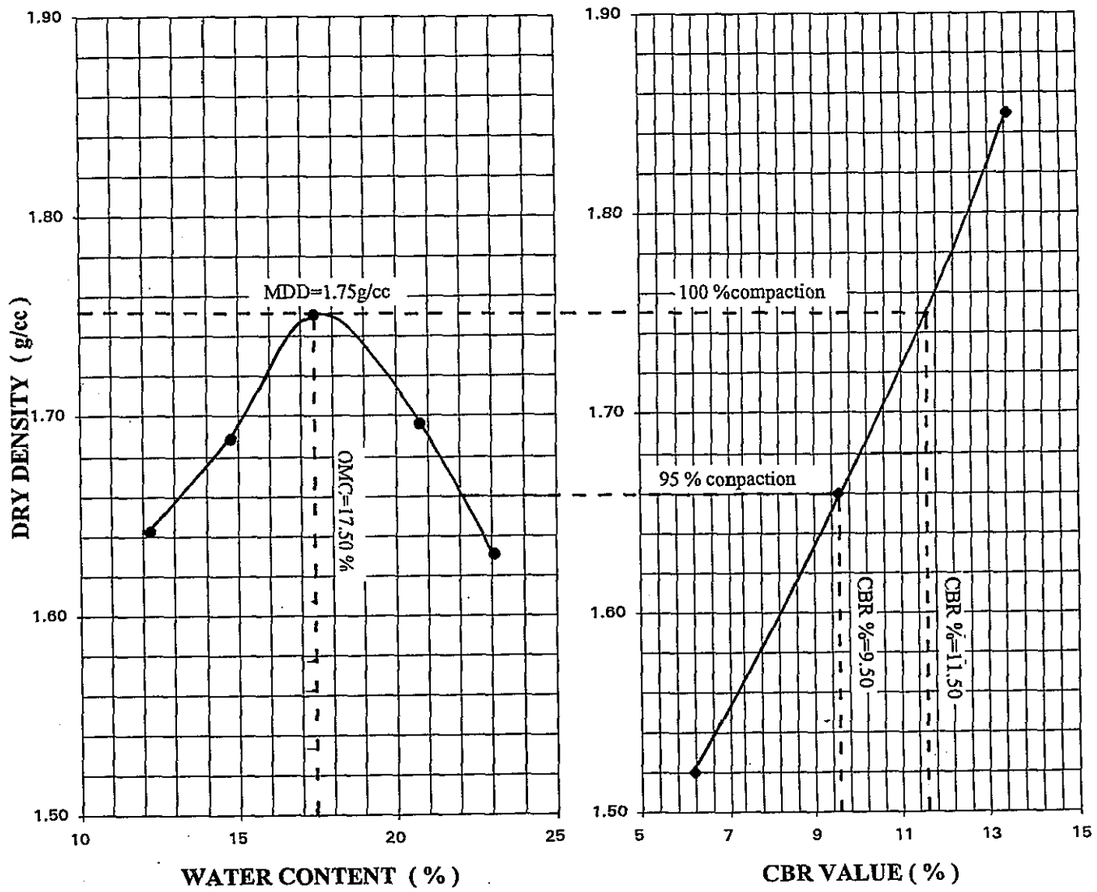
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	12.23	14.78	17.44	20.74	23.09
WT. OF SOIL+MOLD,	g	11460	11660	11908	11890	11805
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3880	4080	4328	4310	4225
WET DENSITY,	g/cc	1.84	1.94	2.06	2.05	2.01
DRY DENSITY,	g/cc	1.64	1.69	1.75	1.70	1.63



MAXIMUM DRY DENSITY = 1.75 g/cc OPTIMUM MOISTURE CONTENT = 17.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-17

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-3 (Sta. 1243+590)	0.35-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown weathered SILTSTONE/SHALE		A-7-6 (15)

COMPACTION TEST

MOLD DIMENSIONS:

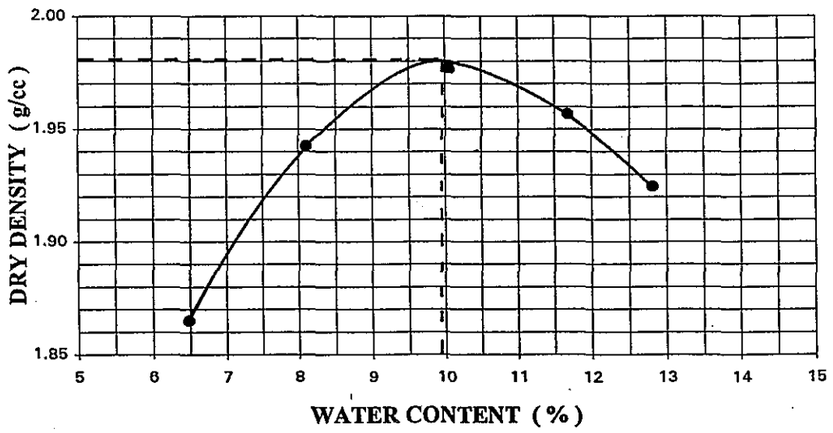
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		207	160	208	153	159	139	186	192	158	149
WT. OF CAN+WET SOIL,	g	112.30	112.30	134.50	134.50	155.00	154.10	174.70	174.10	194.10	192.90
WT. OF CAN+DRY SOIL,	g	106.70	105.80	125.50	125.20	142.40	140.70	158.20	156.80	172.30	173.70
WT. OF WATER,	g	5.60	6.50	9.00	9.30	12.60	13.40	16.50	17.30	21.80	19.20
WT. OF CAN,	g	13.00	13.00	12.50	12.50	12.00	12.80	13.30	12.60	12.90	13.10
WT. OF DRY SOIL,	g	93.70	92.80	113.00	112.70	130.40	127.90	144.90	144.20	159.40	160.60
WATER CONTENT,	%	5.98	7.00	7.96	8.25	9.66	10.48	11.39	12.00	13.68	11.96

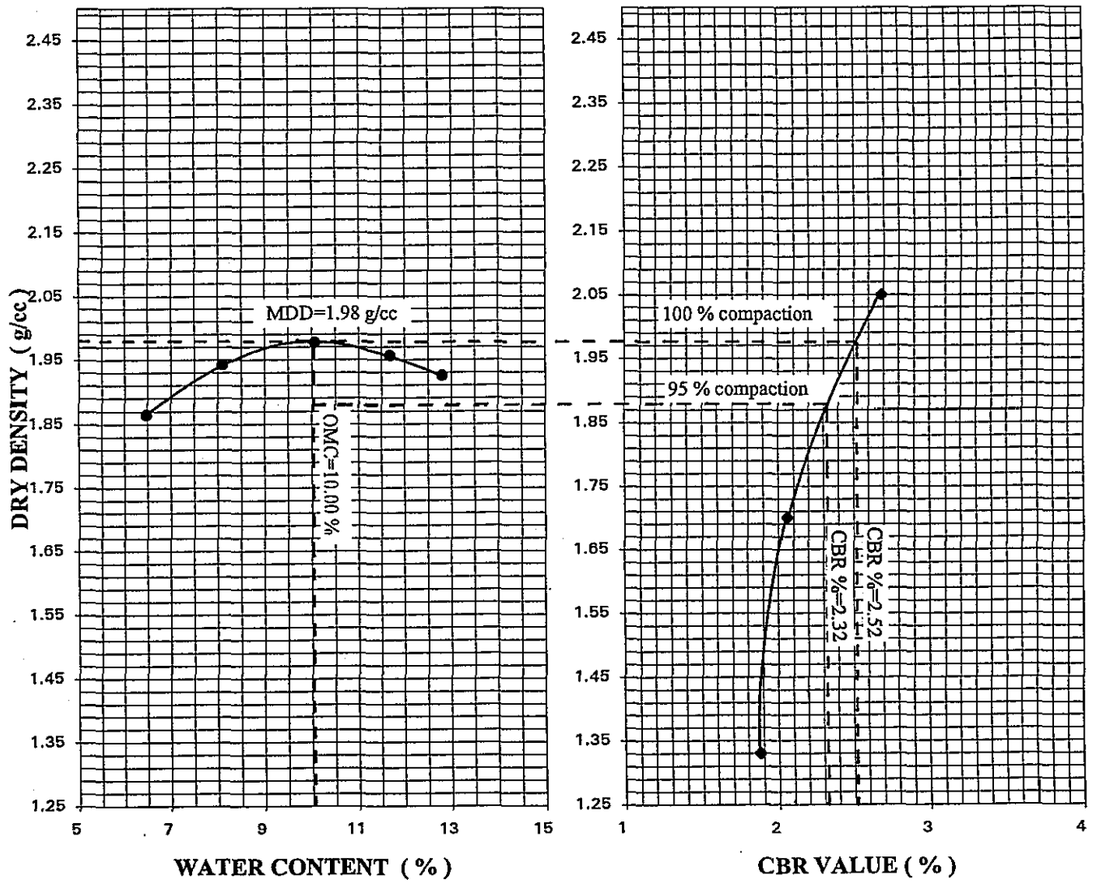
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	6.49	8.11	10.07	11.69	12.82
WT. OF SOIL+MOLD,	g	11760	12000'	12160	12180	12150
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4180	4420	4580	4600	4570
WET DENSITY,	g/cc	1.99	2.10	2.18	2.19	2.17
DRY DENSITY,	g/cc	1.86	1.94	1.98	1.96	1.92



MAXIMUM DRY DENSITY 1.98 g/cc OPTIMUM MOISTURE CONTENT = 10.00 %

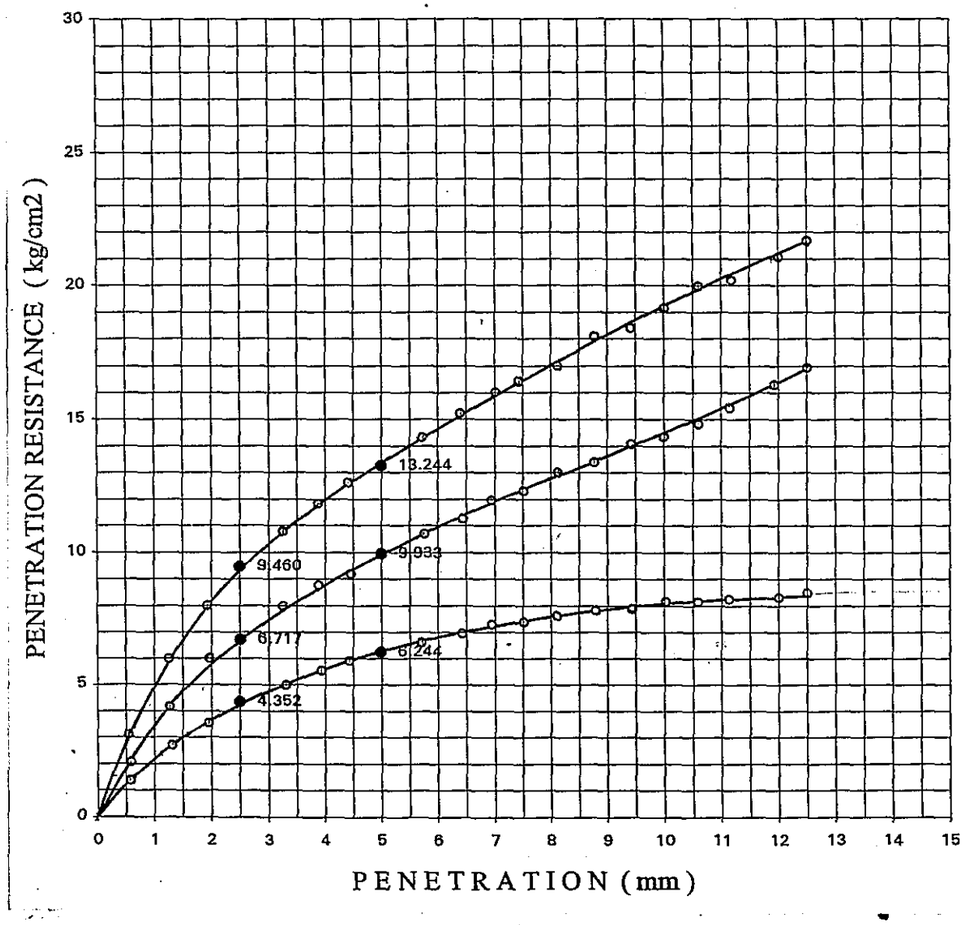
COMPACTION - CBR RELATION



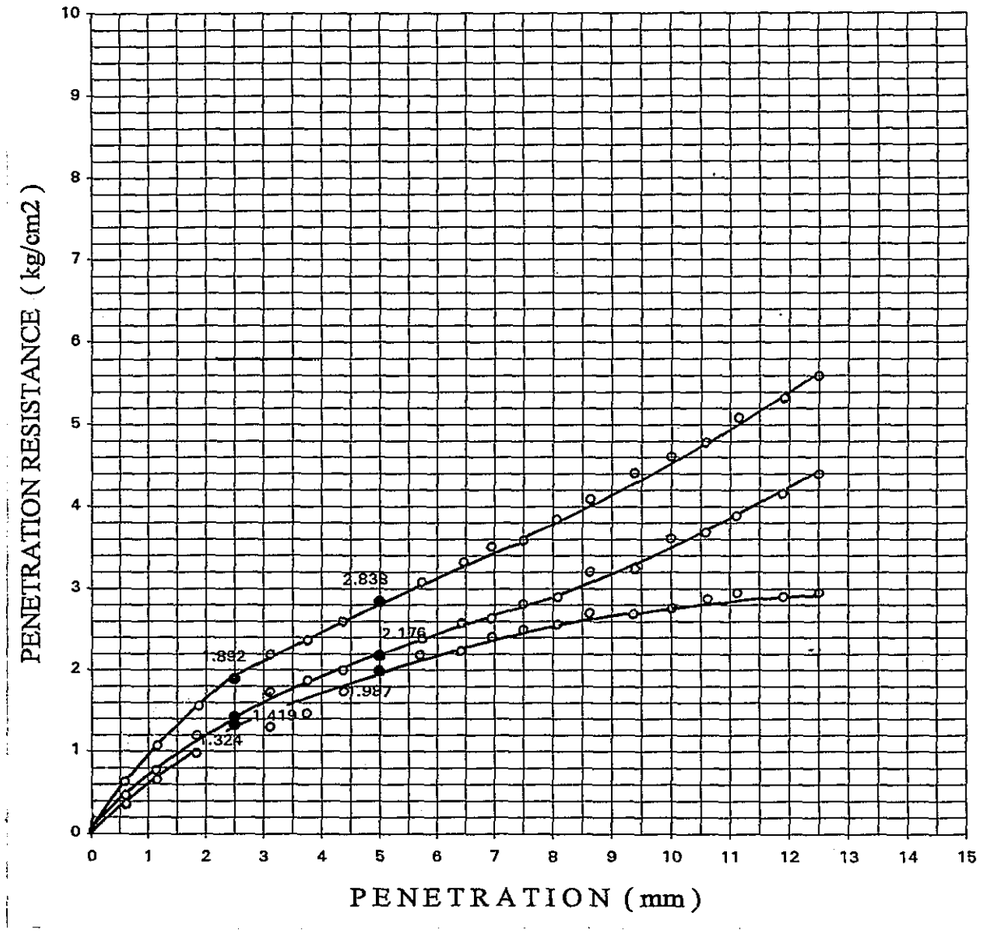
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 18

CBR PENETRATION RESISTANCE GRAPH

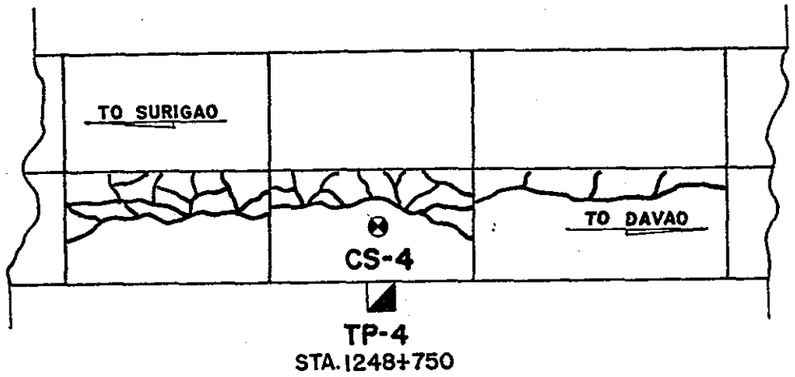
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-3 (Sta. 1243+590)	0.22-0.35 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown clayey GRAVEL		A-2-6 (0)

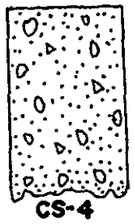


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-3 (Sta. 1243+590)	0.35-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown weathered SILTSTONE/SHALE		A-7-6 (15)

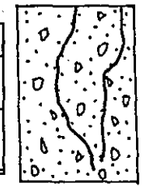


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-19

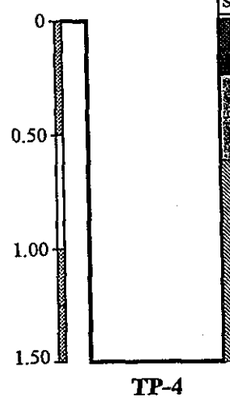




FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
22.4	10.0	1.999	3120



MODE OF FAILURE



SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.224				
	Brown sandy GRAVEL.	0.38	NP	NP	NP	A-1-a (0)
	Gray clayey SILT, traces of fine sand.	0.90	44	29	15	A-7-5 (11)

FIELD DENSITY TEST

(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		4	
STATION (Km)		1248+750	
DEPTH, (cm)		0.23	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5735.00	5744.00
SAND+JUG (AFTER),	g	1535.00	2315.00
WEIGHT OF SAND USED,	g	4200.00	3429.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2592.00	1821.00
VOLUME OF HOLE,	cu.cm	1934.33	1358.96
WEIGHT OF WET SOIL,	g	4960.00	2825.00
WET DENSITY,	g/cc	2.56	2.08

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	196.50	212.40
WT. OF DRY SOIL+CAN,	g	186.50	193.80
WEIGHT OF CAN,	g	17.07	16.71
MOISTURE LOSS,	g	10.00	18.60
WEIGHT OF DRY SOIL,	g	169.43	177.09
MOISTURE CONTENT,	%	5.90	10.50
DRY DENSITY,	g/cc	2.42	1.88

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.56	2.08
DRY DENSITY,	g/cc	2.42	1.88
MAXIMUM DRY DENSITY,	g/cc	2.12	1.91
OPT. MOISTURE CONTENT,	%	9.50	13.50
PERCENT COMPACTION		114.21	98.49

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 20

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-4 (Sta. 1248+750)	0.22-0.60 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

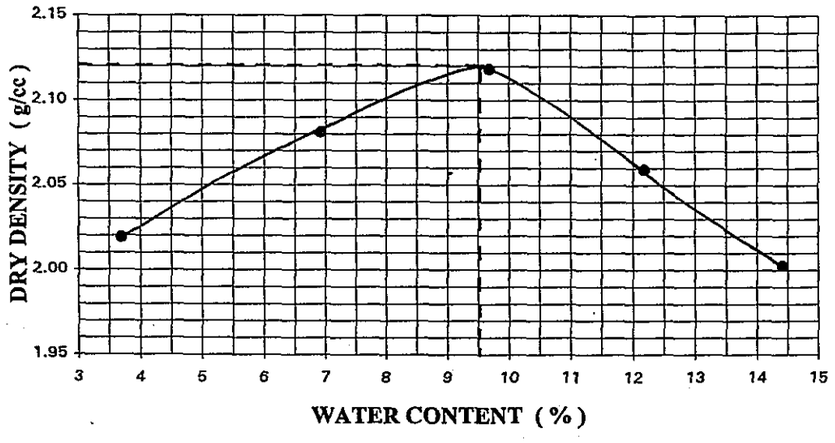
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		PP-6	E31	136X	33X	368	JIA	B8	1030	252	E500
WT. OF CAN+WET SOIL,	g	144.90	150.40	159.00	166.50	178.80	181.40	204.30	208.00	211.20	218.50
WT. OF CAN+DRY SOIL,	g	140.00	146.30	149.80	156.70	165.30	166.90	183.50	188.50	186.50	193.20
WT. OF WATER,	g	4.90	4.10	9.20	9.80	13.50	14.50	20.80	19.50	24.70	25.30
WT. OF CAN,	g	24.30	17.20	16.30	15.80	25.40	17.70	13.80	27.50	17.20	15.80
WT. OF DRY SOIL,	g	115.70	129.10	133.50	140.90	139.90	149.20	169.70	161.00	169.30	177.40
WATER CONTENT,	%	4.24	3.18	6.89	6.96	9.65	9.72	12.26	12.11	14.59	14.26

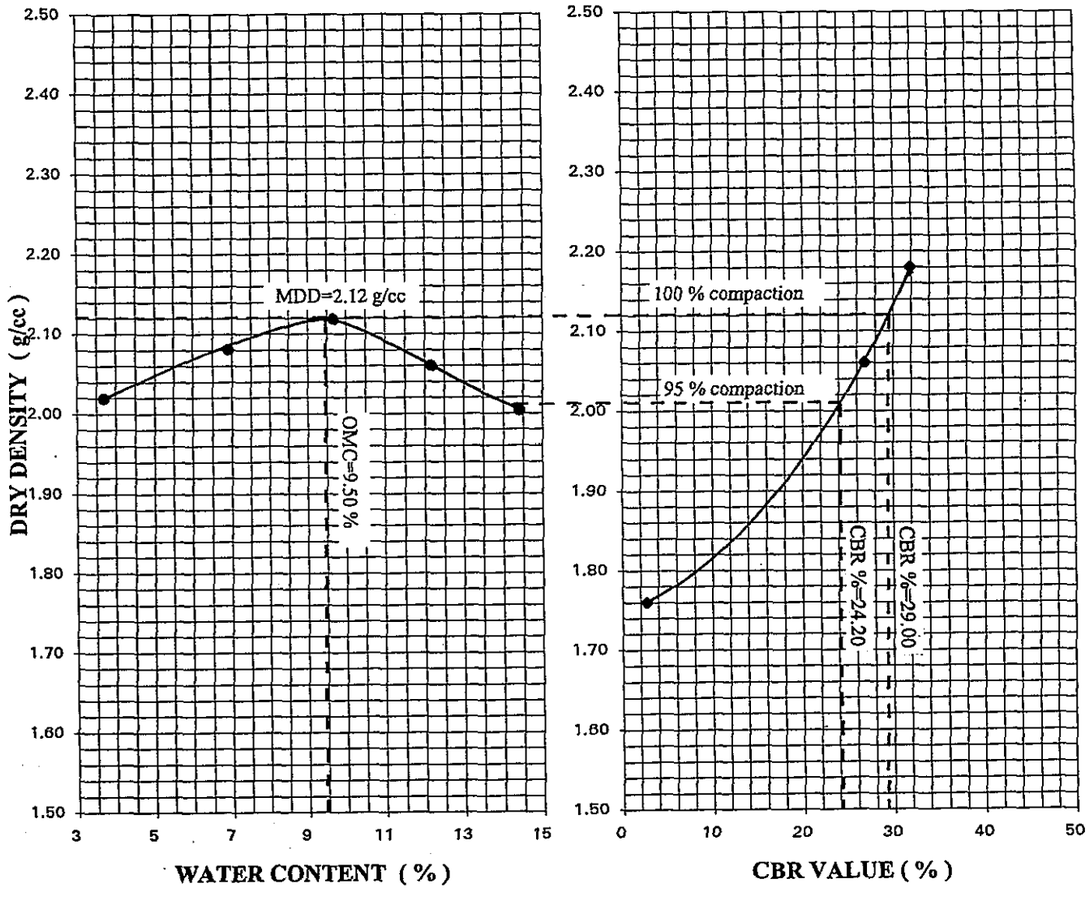
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	3.71	6.92	9.68	12.18	14.43
WT. OF SOIL+MOLD,	g	10950	11235	11450	11421	11380
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4555	4840	5055	5026	4985
WET DENSITY,	g/cc	2.09	2.22	2.32	2.31	2.29
DRY DENSITY,	g/cc	2.02	2.08	2.12	2.06	2.00



MAXIMUM DRY DENSITY = 2.12 g/cc OPTIMUM MOISTURE CONTENT = 9.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES: DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P- 21

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-4 (Sta. 1248+750)	0.60-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray clayey SILT		A-7-5 (11)

COMPACTION TEST

MOLD DIMENSIONS:

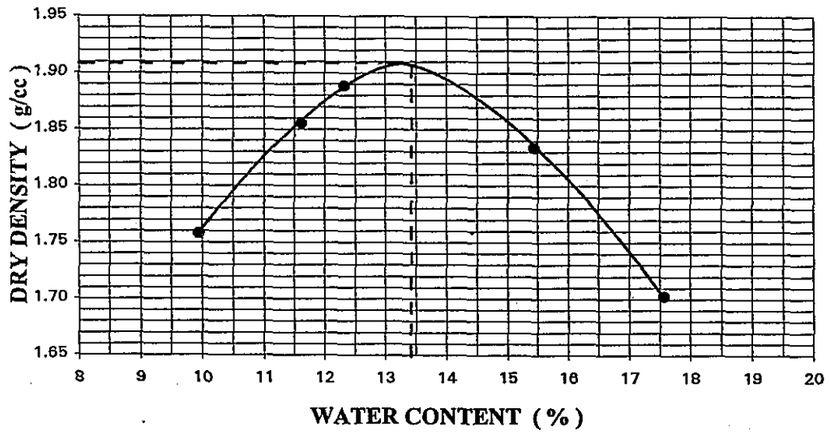
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		110	359	E42	7X	E48	B1	1004	1558	304	126
WT. OF CAN+WET SOIL,	g	130.50	138.50	143.50	144.50	159.80	159.90	160.60	162.40	175.50	177.50
WT. OF CAN+DRY SOIL,	g	120.70	127.50	130.60	130.80	144.40	144.00	143.00	144.00	153.50	152.40
WT. OF WATER,	g	9.80	11.00	12.90	13.70	15.40	15.90	17.60	18.40	22.00	25.10
WT. OF CAN,	g	22.00	17.20	15.50	17.00	15.70	18.70	27.00	27.00	17.00	20.50
WT. OF DRY SOIL,	g	98.70	110.30	115.10	113.80	128.70	125.30	116.00	117.00	136.50	131.90
WATER CONTENT,	%	9.93	9.97	11.21	12.04	11.97	12.69	15.17	15.73	16.12	19.03

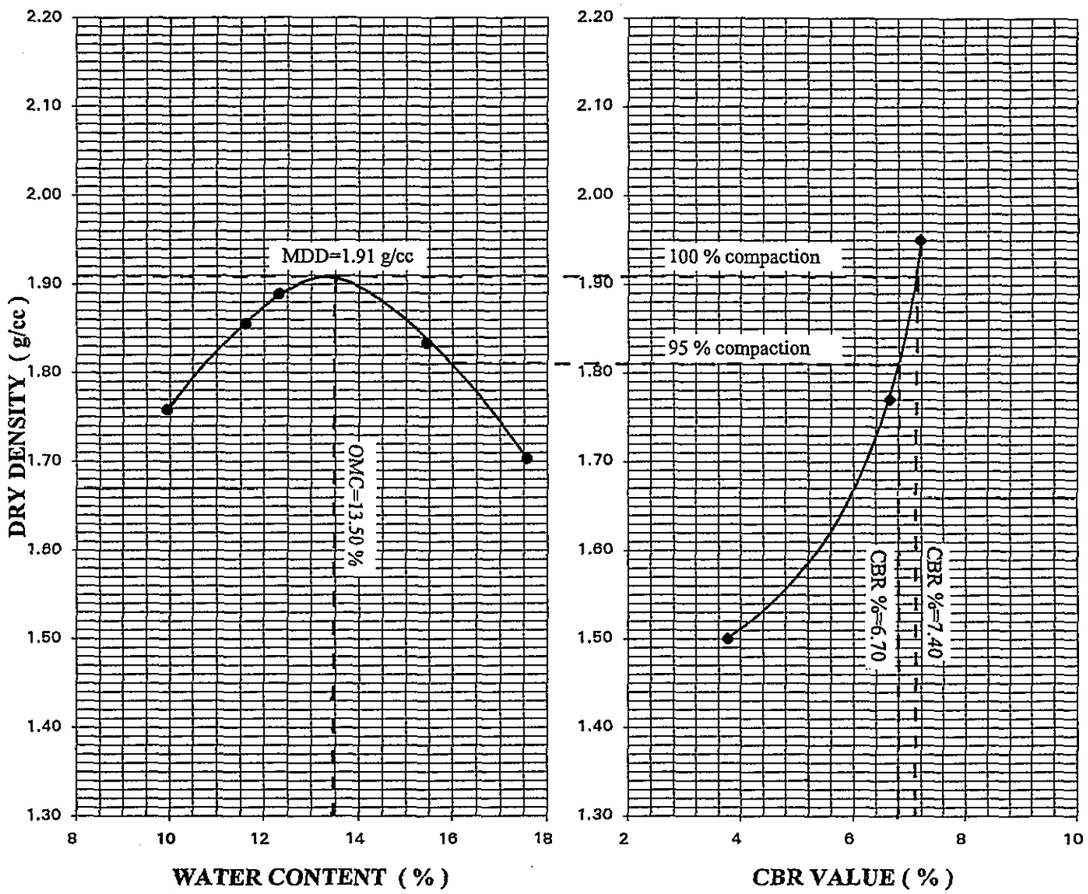
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	9.95	11.62	12.33	15.45	17.57
WT. OF SOIL+MOLD,	g	10600	10900	11010	11000	10750
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4205	4505	4615	4605	4355
WET DENSITY,	g/cc	1.93	2.07	2.12	2.12	2.00
DRY DENSITY,	g/cc	1.76	1.86	1.89	1.83	1.70



MAXIMUM DRY DENSITY 1.91 g/cc OPTIMUM MOISTURE CONTENT = 13.50 %

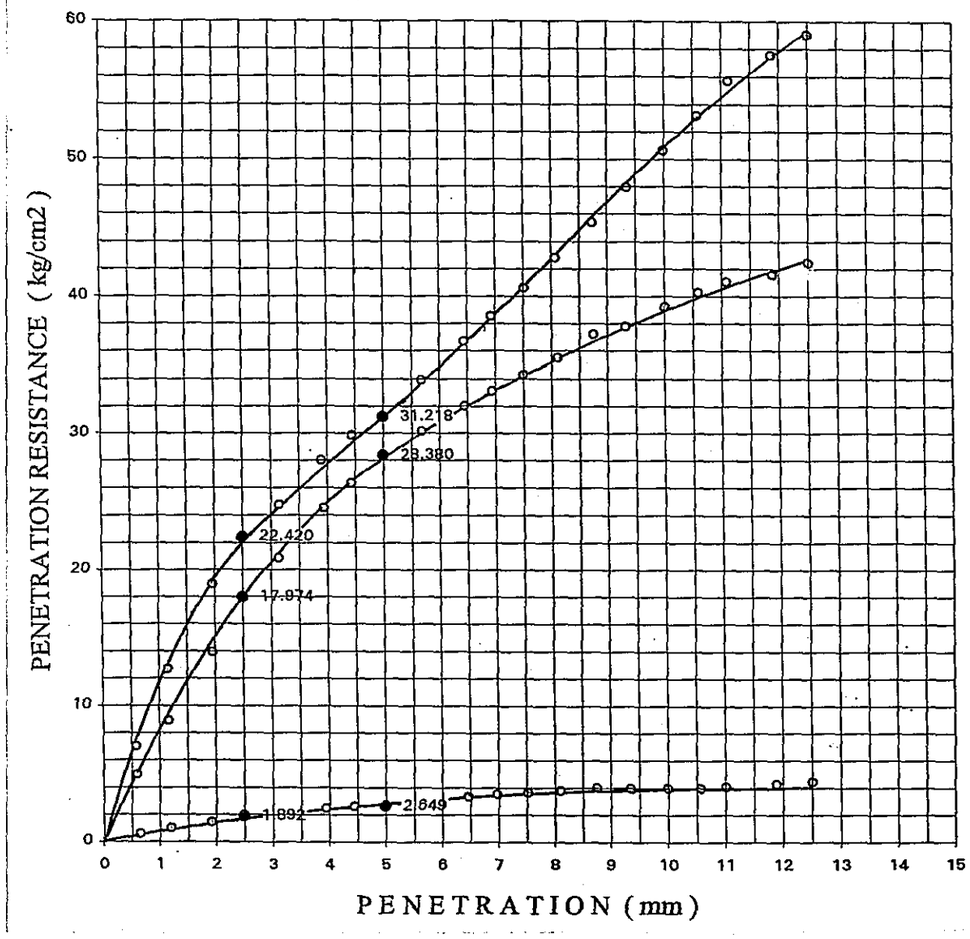
COMPACTION - CBR RELATION



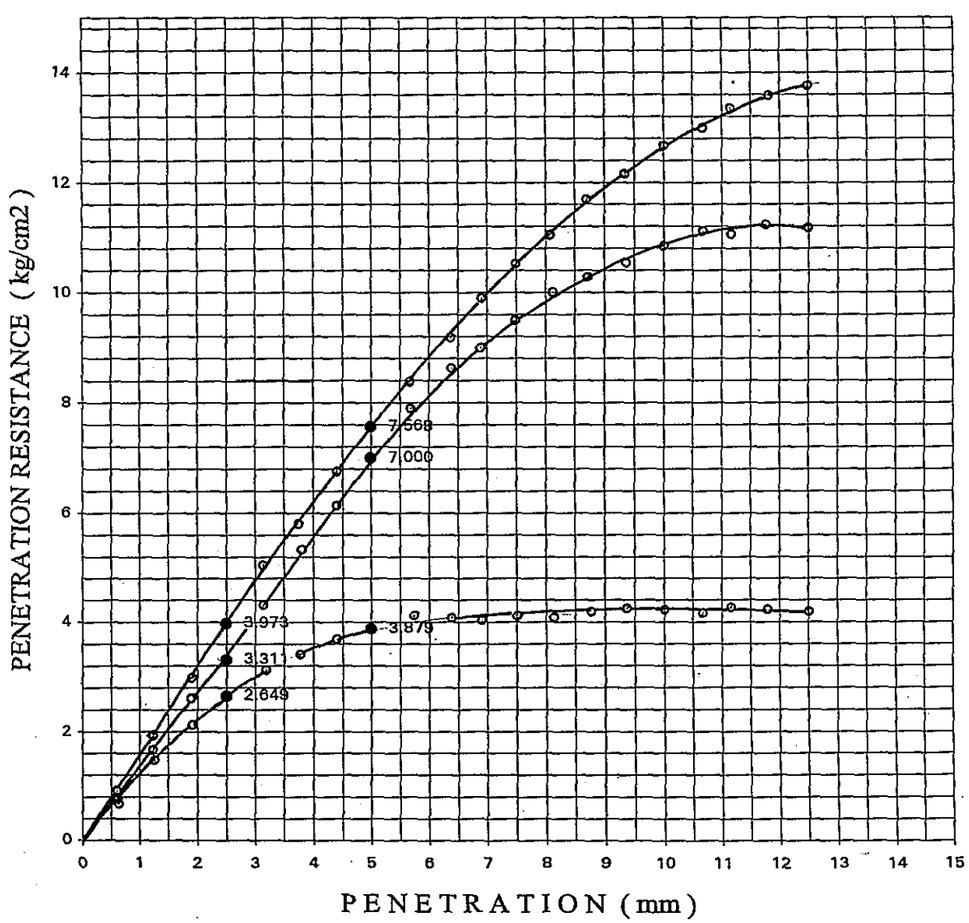
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 22

CBR PENETRATION RESISTANCE GRAPH

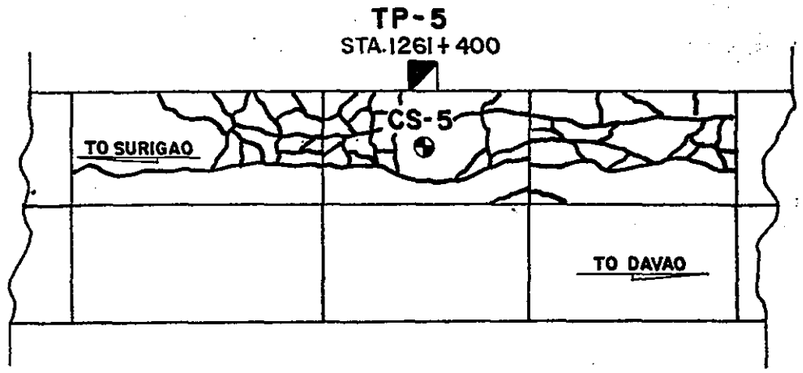
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-4 (Sta. 1248+750)	0.22-0.60 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

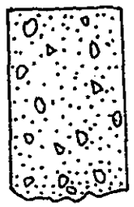


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-4 (Sta. 1248+750)	0.60-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray clayey SILT		A-7-5 (11)



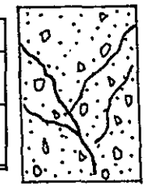
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 23



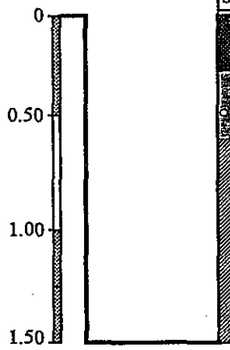


CS-5

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
23.0	10.0	1.778	3148



MODE OF FAILURE



TP-5

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.230				
	Brown sandy GRAVEL, traces of silt.	0.37	NP	NP	NP	A-1-a (0)
	Gray sandy CLAY.	0.90	62	30	32	A-7-6 (20)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		5	
STATION (Km)		1261+400	
DEPTH, (cm)		0.25	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5868.00	5885.00
SAND+JUG (AFTER),	g	2470.00	2475.00
WEIGHT OF SAND USED,	g	3398.00	3410.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1790.00	1802.00
VOLUME OF HOLE,	cu.cm	1335.82	1344.78
WEIGHT OF WET SOIL,	g	2890.00	2340.00
WET DENSITY,	g/cc	2.16	1.74

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	236.70	235.60
WT. OF DRY SOIL+CAN,	g	225.50	161.60
WEIGHT OF CAN,	g	20.45	16.35
MOISTURE LOSS,	g	11.20	74.00
WEIGHT OF DRY SOIL,	g	205.05	145.25
MOISTURE CONTENT,	%	5.46	50.95
DRY DENSITY,	g/cc	2.05	1.15

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.16	1.74
DRY DENSITY,	g/cc	2.05	1.15
MAXIMUM DRY DENSITY,	g/cc	2.04	1.66
OPT. MOISTURE CONTENT,	%	8.75	1.90
PERCENT COMPACTION		100.56	69.44

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 24

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-5 (Sta. 1261+400)	0.23-0.60 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

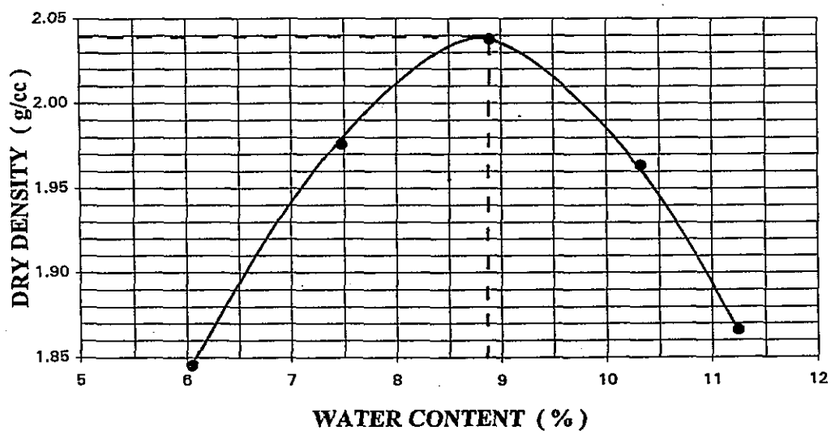
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		ALF	1081	203	176	1082	142	164	182	1077	1076
WT. OF CAN+WET SOIL,	g	111.20	111.90	132.70	132.70	153.70	153.00	172.40	172.70	191.90	193.20
WT. OF CAN+DRY SOIL,	g	106.40	105.10	124.20	124.50	142.60	141.10	157.20	158.10	174.20	174.10
WT. OF WATER,	g	4.80	6.80	8.50	8.20	11.10	11.90	15.20	14.60	17.70	19.10
WT. OF CAN,	g	10.60	9.50	12.70	12.70	12.20	12.90	13.60	13.20	11.20	10.00
WT. OF DRY SOIL,	g	95.80	95.60	111.50	111.80	130.40	128.20	143.60	144.90	163.00	164.10
WATER CONTENT,	%	5.01	7.11	7.62	7.33	8.51	9.28	10.58	10.08	10.86	11.64

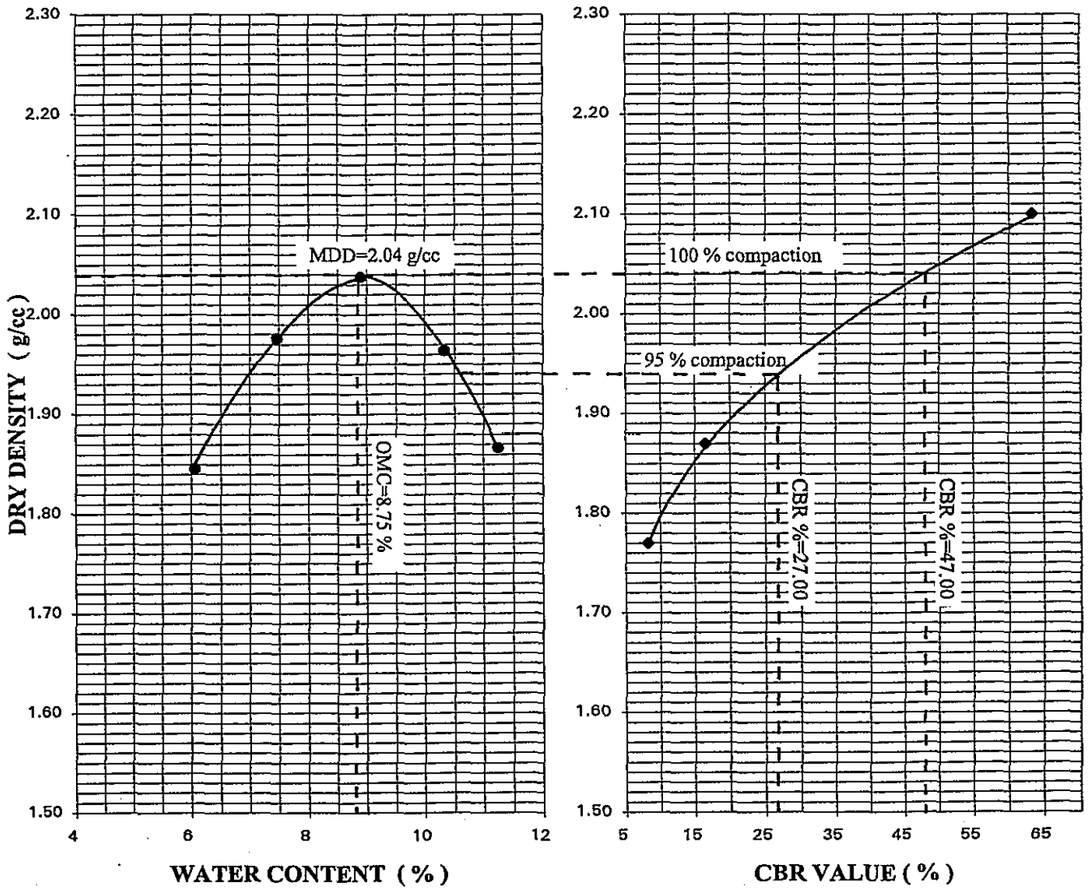
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	6.06	7.48	8.90	10.33	11.25
WT. OF SOIL+MOLD,	g	11700	12050	12250	12140	11950
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4120	4470	4670	4560	4370
WET DENSITY,	g/cc	1.96	2.12	2.22	2.17	2.08
DRY DENSITY,	g/cc	1.85	1.98	2.04	1.96	1.87



MAXIMUM DRY DENSITY = 2.04 g/cc OPTIMUM MOISTURE CONTENT = 8.75 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-25

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-5 (Sta. 1261+400)	0.60-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy CLAY		A-7-6 (20)

COMPACTION TEST

MOLD DIMENSIONS:

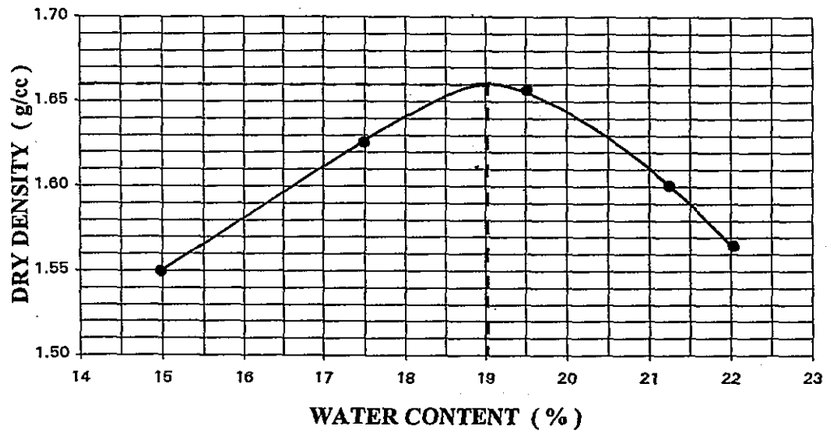
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		199	157	193	144	136	166	1059	1070	163	113
WT. OF CAN+WET SOIL,	g	112.30	113.10	131.80	133.20	154.10	155.00	176.00	173.60	193.40	194.50
WT. OF CAN+DRY SOIL,	g	99.20	99.80	112.30	117.10	131.60	130.90	147.40	144.80	160.70	161.30
WT. OF WATER,	g	13.10	13.30	19.50	16.10	22.50	24.10	28.60	28.80	32.70	33.20
WT. OF CAN,	g	11.50	11.30	12.80	12.50	12.00	11.80	10.30	11.70	11.80	11.20
WT. OF DRY SOIL,	g	87.70	88.50	99.50	104.60	119.60	119.10	137.10	133.10	148.90	150.10
WATER CONTENT,	%	14.94	15.03	19.60	15.39	18.81	20.24	20.86	21.64	21.96	22.12

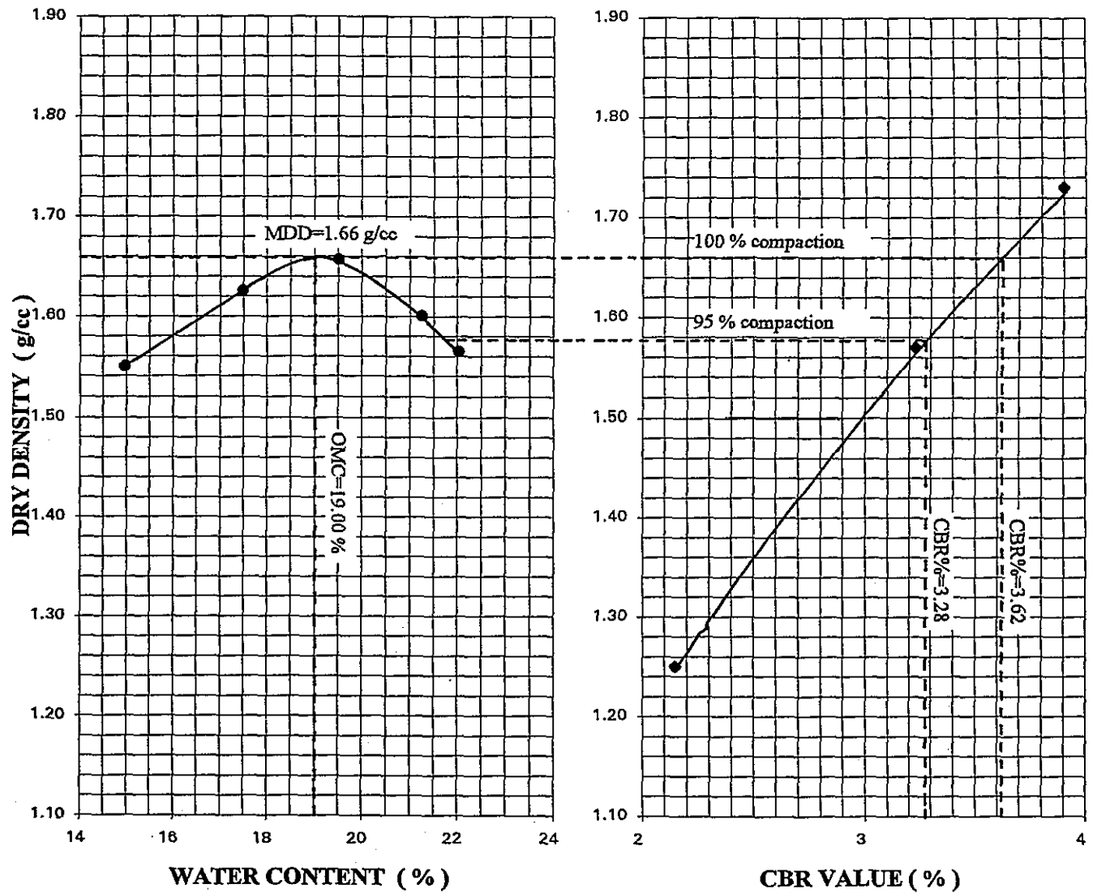
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	14.98	17.49	19.52	21.25	22.04
WT. OF SOIL+MOLD,	g	11330	11600	11748	11665	11600
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3750	4020	4168	4085	4020
WET DENSITY,	g/cc	1.78	1.91	1.98	1.94	1.91
DRY DENSITY,	g/cc	1.55	1.63	1.66	1.60	1.56



MAXIMUM DRY DENSITY = 1.66 g/cc OPTIMUM MOISTURE CONTENT = 19.00 %

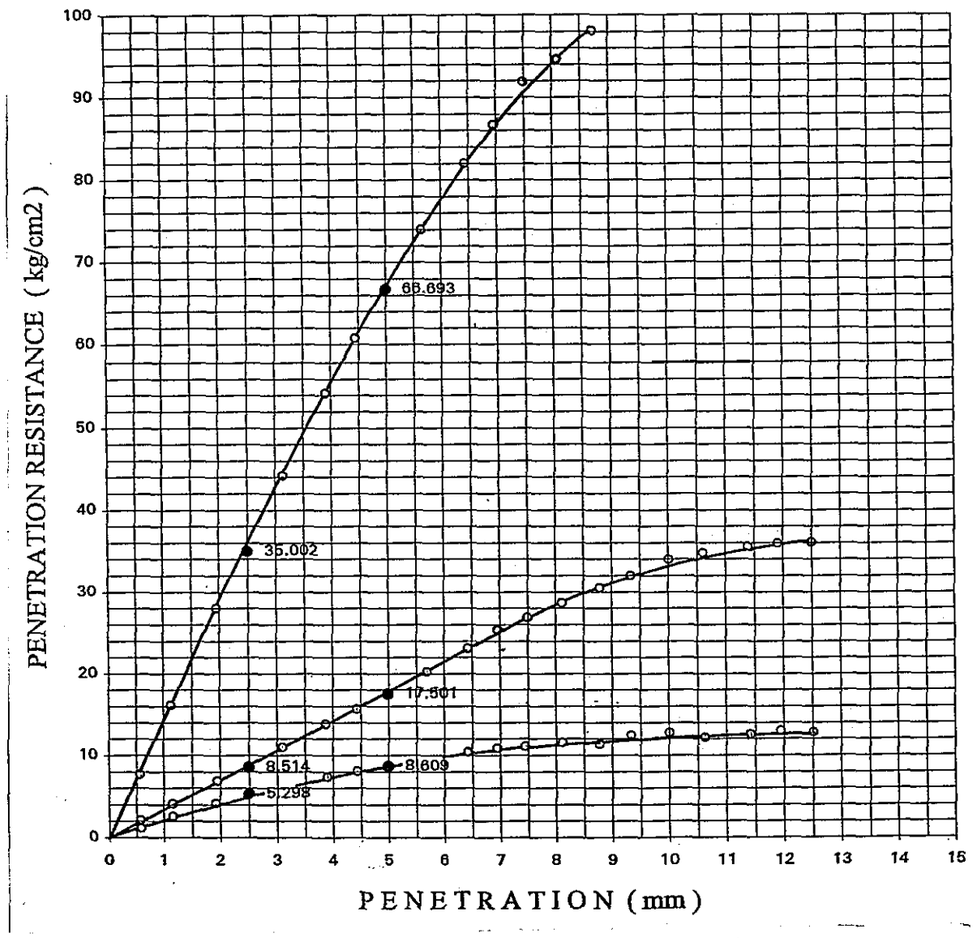
COMPACTION - CBR RELATION



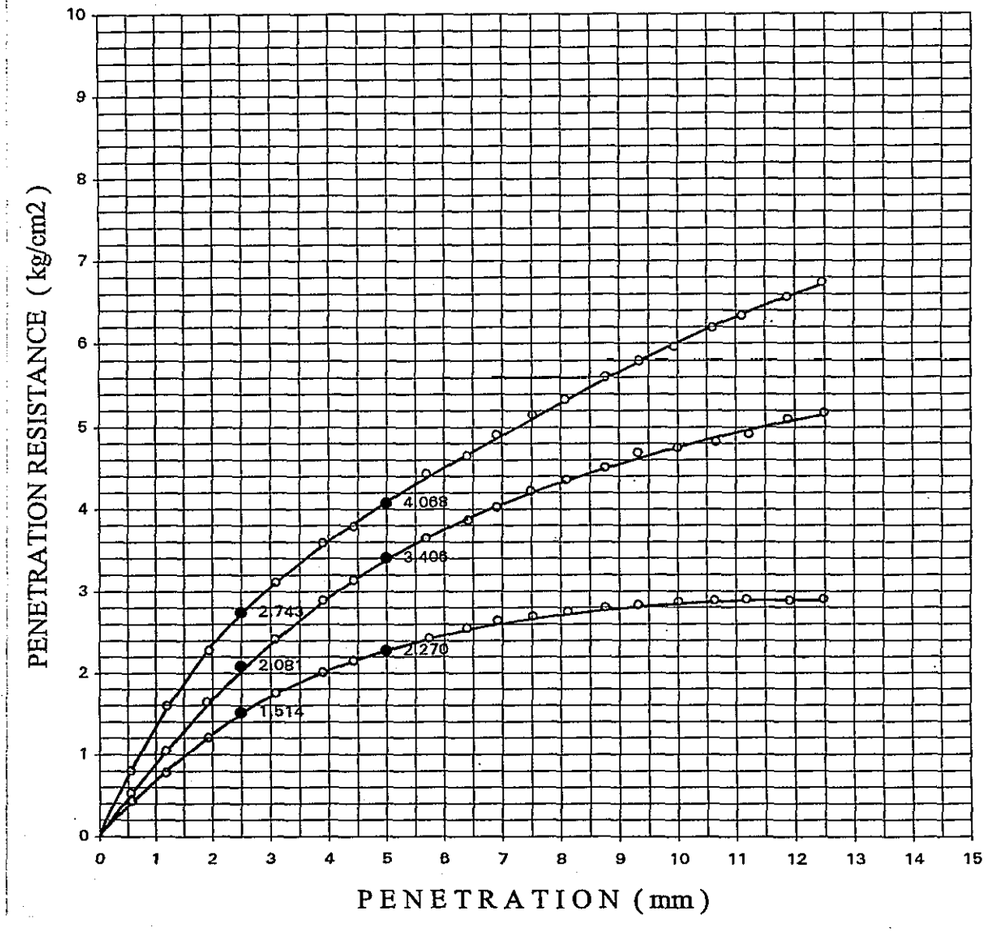
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 26

CBR PENETRATION RESISTANCE GRAPH

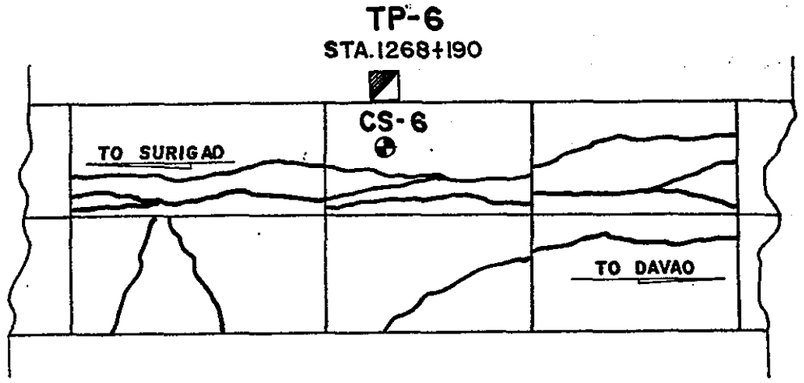
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-5 (Sta. 1261+400)	0.23-0.60 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

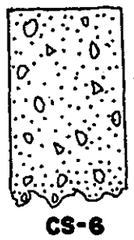


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-5 (Sta. 1261+400)	0.60-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy CLAY		A-7-6 (20)

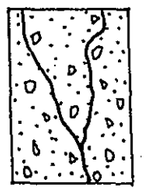


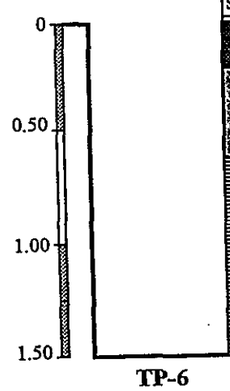
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P– 27





FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
21.0	10.0	1.94	3448


MODE OF FAILURE



SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.210				
	Brown silty GRAVEL and SAND.	0.39	NP	NP	NP	A-1-b (0)
	Gray CLAY, traces of fine sand.	0.90	50	25	25	A-7-6 (16)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		6	
STATION (Km)		1268+190	
DEPTH, (cm)		0.25	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5940.00	6025.00
SAND+JUG (AFTER),	g	2015.00	2090.00
WEIGHT OF SAND USED,	g	3925.00	3935.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2317.00	2327.00
VOLUME OF HOLE,	cu.cm	1729.10	1736.57
WEIGHT OF WET SOIL,	g	3400.00	3160.00
WET DENSITY,	g/cc	1.97	1.82

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1600.00	479.50
WT. OF DRY SOIL+CAN,	g	1487.70	370.00
WEIGHT OF CAN,	g	124.20	101.80
MOISTURE LOSS,	g	112.30	109.50
WEIGHT OF DRY SOIL,	g	1363.50	268.20
MOISTURE CONTENT,	%	8.24	40.83
DRY DENSITY,	g/cc	1.82	1.29

LABORATORY COMPACTION:

WET DENSITY,	g/cc	1.97	1.82
DRY DENSITY,	g/cc	1.82	1.29
MAXIMUM DRY DENSITY,	g/cc	2.23	1.62
OPT. MOISTURE CONTENT,	%	5.75	22.50
PERCENT COMPACTION		81.47	79.76

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)

SHEET NO.: P-28

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-6 (Sta. 1268+190)	0.21-0.60 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty GRAVEL & SAND		A-1-b (0)

COMPACTION TEST

MOLD DIMENSIONS:

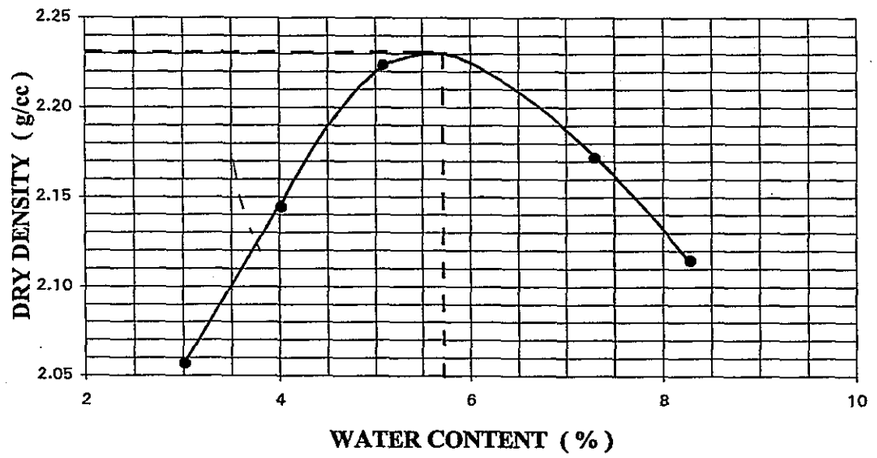
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		1076	190	22	148	1066	174	1064	145	188	154
WT. OF CAN+WET SOIL,	g	113.80	111.00	132.50	133.30	153.70	151.20	172.20	170.00	193.30	194.00
WT. OF CAN+DRY SOIL,	g	111.00	107.90	128.00	128.50	146.80	144.50	160.70	159.80	178.60	181.00
WT. OF WATER,	g	2.80	3.10	4.50	4.80	6.90	6.70	11.50	10.20	14.70	13.00
WT. OF CAN,	g	12.80	10.80	12.60	12.90	11.00	12.80	10.80	12.60	12.70	12.40
WT. OF DRY SOIL,	g	98.20	97.10	115.40	115.60	135.80	131.70	149.90	147.20	165.90	168.60
WATER CONTENT,	%	2.85	3.19	3.90	4.15	5.08	5.09	7.67	6.93	8.86	7.71

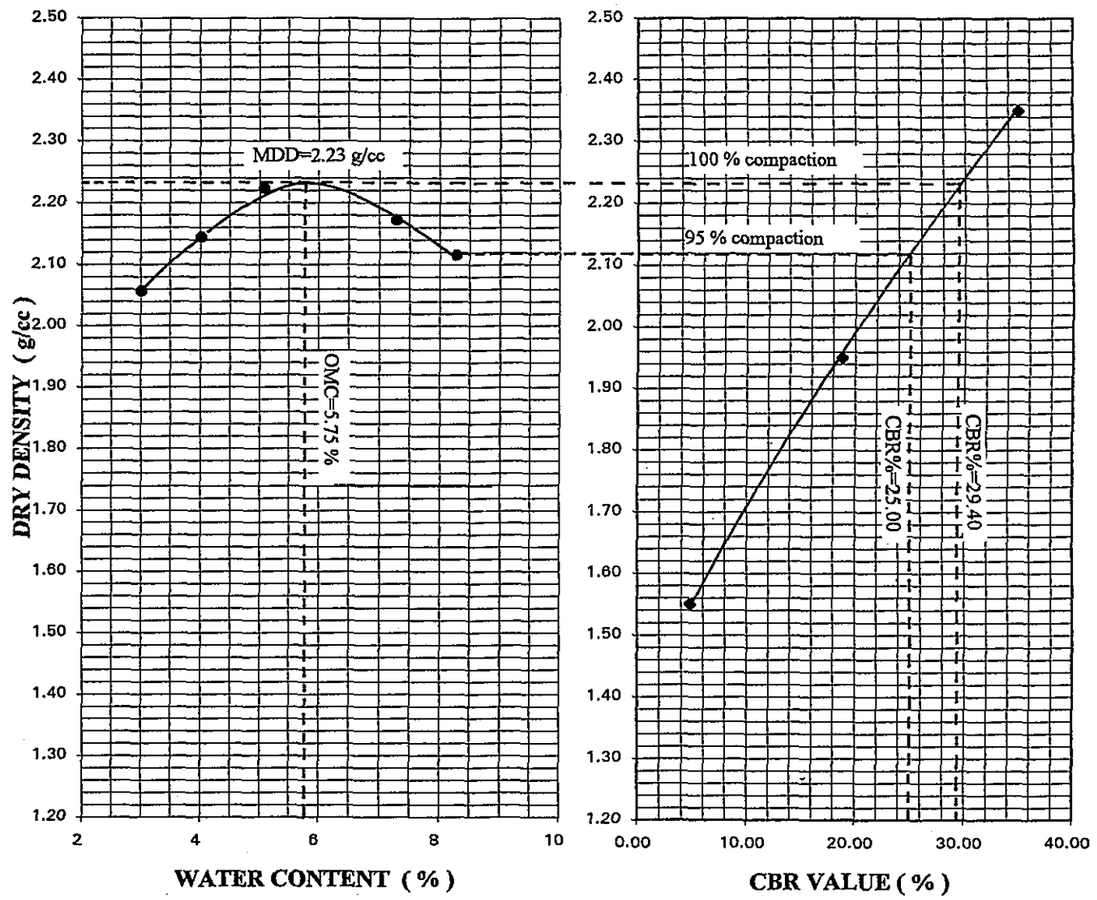
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	3.02	4.03	5.08	7.30	8.29
WT. OF SOIL+MOLD,	g	12040	12275	12498	12485	12400
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4460	4695	4918	4905	4820
WET DENSITY,	g/cc	2.12	2.23	2.34	2.33	2.29
DRY DENSITY,	g/cc	2.06	2.14	2.22	2.17	2.11



MAXIMUM DRY DENSITY = 2.23 g/cc OPTIMUM MOISTURE CONTENT = 5.75 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-29

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-6 (Sta. 1268+190)	0.60-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray CLAY		A-7-5 (16)

COMPACTION TEST

MOLD DIMENSIONS:

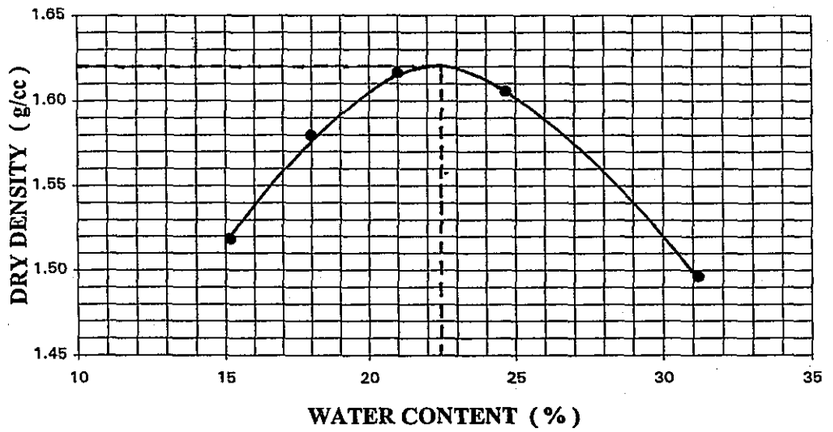
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		B-8	1030	E-27	E-33	115	298	G44	269	1043	1018
WT. OF CAN+WET SOIL,	g	115.20	111.40	124.20	128.40	132.70	136.50	148.50	149.20	153.00	156.50
WT. OF CAN+DRY SOIL,	g	102.10	100.10	108.00	110.80	111.50	118.30	123.00	122.50	120.00	124.20
WT. OF WATER,	g	13.10	11.30	16.20	17.60	21.20	18.20	25.50	26.70	33.00	32.30
WT. OF CAN,	g	13.60	27.50	15.60	15.40	24.00	16.00	17.00	17.00	10.43	24.00
WT. OF DRY SOIL,	g	88.50	72.60	92.40	95.40	87.50	102.30	106.00	105.50	109.57	100.20
WATER CONTENT,	%	14.80	15.56	17.53	18.45	24.23	17.79	24.06	25.31	30.12	32.24

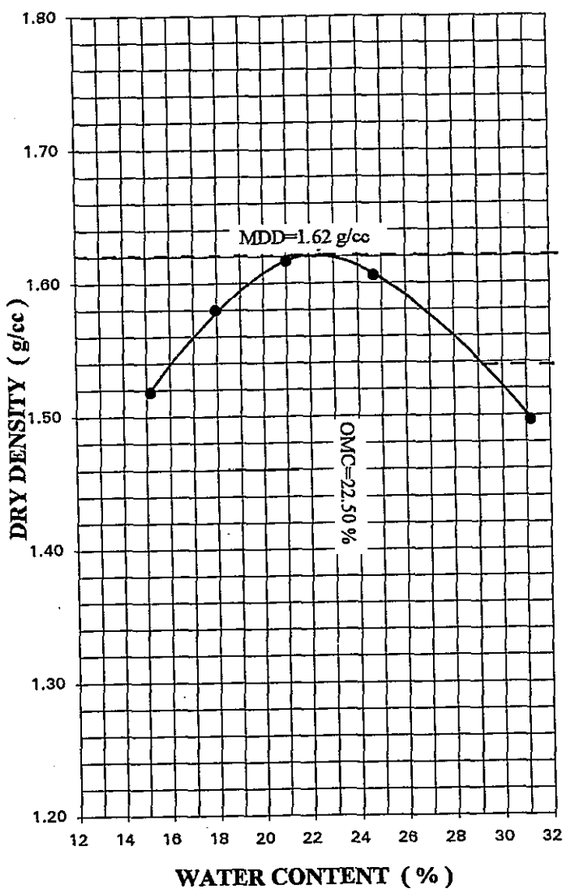
DENSITY DETERMINATION

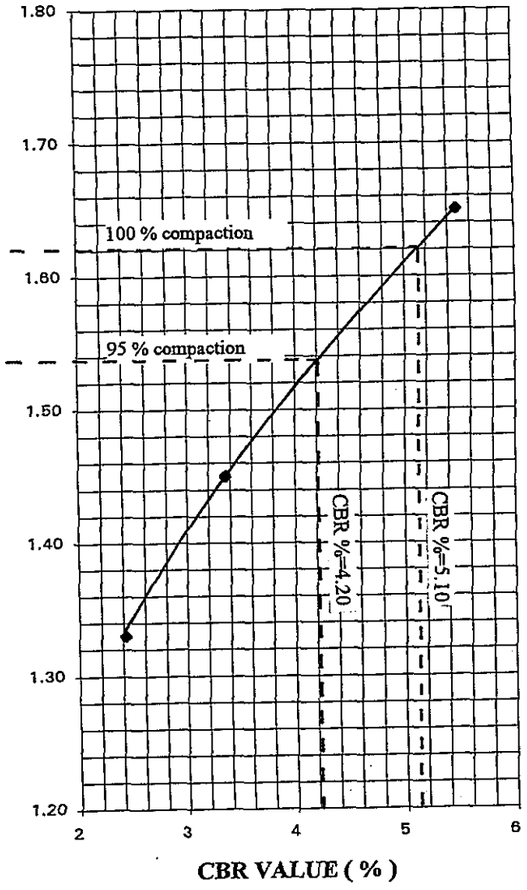
AVE. WATER CONTENT,	%	15.18	17.99	21.01	24.68	31.18
WT. OF SOIL+MOLD,	g	10200	10450	10650	10750	10665
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	3805	4055	4255	4355	4270
WET DENSITY,	g/cc	1.75	1.86	1.96	2.00	1.96
DRY DENSITY,	g/cc	1.52	1.58	1.62	1.61	1.50



MAXIMUM DRY DENSITY = 1.62 g/cc OPTIMUM MOISTURE CONTENT = 22.50 %

COMPACTION - CBR RELATION

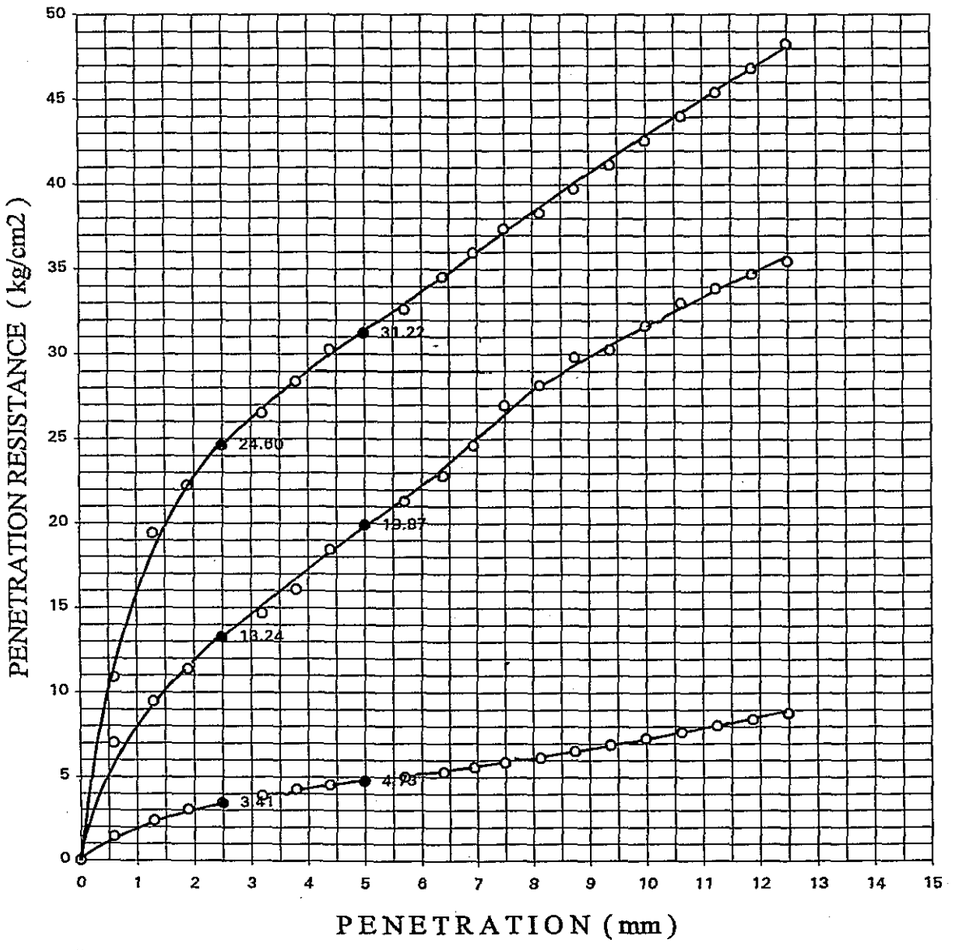




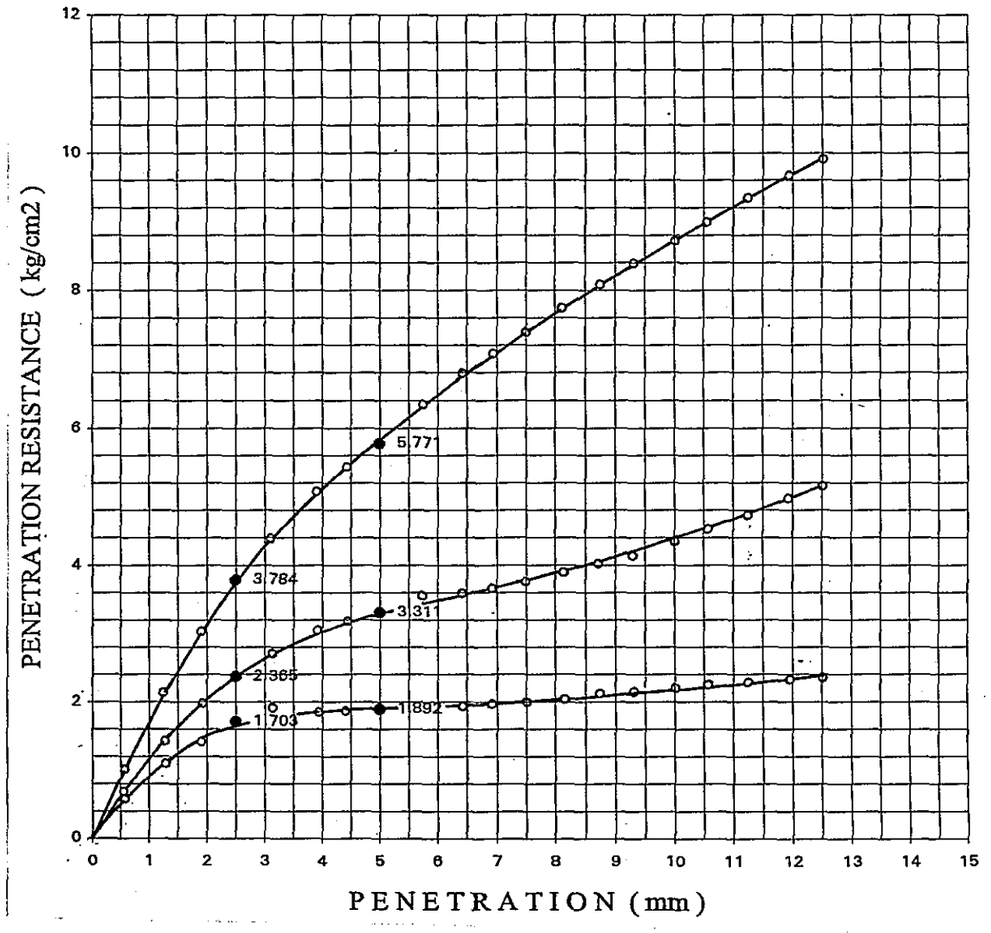
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 30

CBR PENETRATION RESISTANCE GRAPH

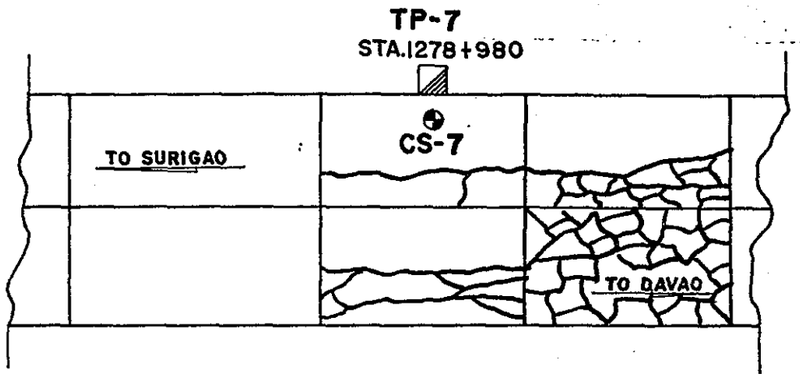
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-6 (Sta. 1268+190)	0.21-0.60 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty GRAVEL & SAND		A-1-b (0)

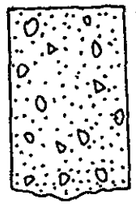


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-6 (Sta. 1268+190)	0.60-1.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray CLAY		A-7-5 (16)



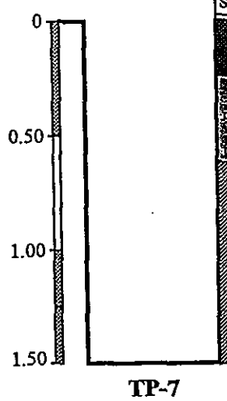
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P- 31




CS-7

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
25.0	10.0	2.09	1314


MODE OF FAILURE



TP-7

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.250				
	Brown SAND & GRAVEL, little amount of silt.	0.35	NP	NP	NP	A-1-b (0)
	Gray sandy CLAY.	0.90	30	18	12	A-6 (13)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		7	
STATION (Km)		1272+700	
DEPTH, (cm)		0.25	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5960.00	5965.00
SAND+JUG (AFTER),	g	2085.00	2085.00
WEIGHT OF SAND USED,	g	3875.00	3880.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2267.00	2272.00
VOLUME OF HOLE,	cu.cm	1691.79	1695.52
WEIGHT OF WET SOIL,	g	3505.00	3036.00
WET DENSITY,	g/cc	2.07	1.79

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1069.50	560.00
WT. OF DRY SOIL+CAN,	g	994.30	478.60
WEIGHT OF CAN,	g	90.80	105.20
MOISTURE LOSS,	g	75.20	81.40
WEIGHT OF DRY SOIL,	g	903.50	373.40
MOISTURE CONTENT,	%	8.32	21.80
DRY DENSITY,	g/cc	1.91	1.47

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.07	1.79
DRY DENSITY,	g/cc	1.91	1.47
MAXIMUM DRY DENSITY,	g/cc	2.19	1.88
OPT. MOISTURE CONTENT,	%	7.00	18.24
PERCENT COMPACTION		87.33	78.20

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 32

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-7 (Sta. 1272+700)	0.25-0.60 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown MED. GRAVEL & SAND		A-1-b (0)

COMPACTION TEST

MOLD DIMENSIONS:

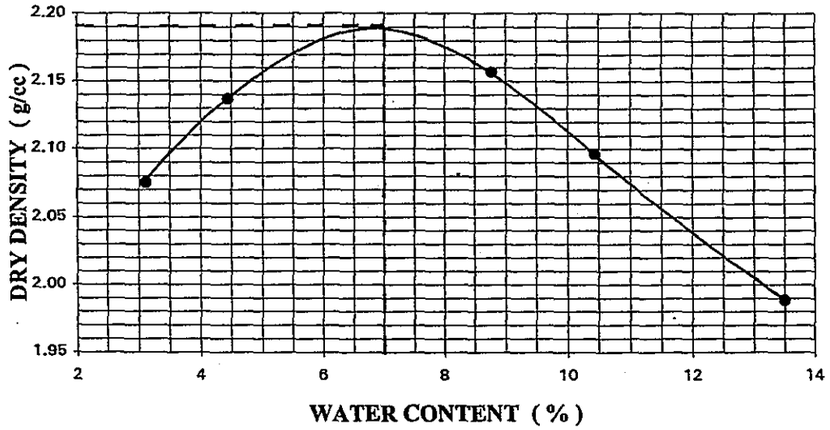
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		344	282	7SEAS	77	103	1085	1036	1037	384	322
WT. OF CAN+WET SOIL,	g	110.50	110.00	125.00	123.60	136.40	153.70	143.40	151.80	169.80	154.80
WT. OF CAN+DRY SOIL,	g	107.30	108.00	120.70	119.00	121.10	144.20	133.90	141.60	149.00	141.20
WT. OF WATER,	g	3.20	2.00	4.30	4.60	15.30	9.50	9.50	10.20	20.80	13.60
WT. OF CAN,	g	23.80	24.20	16.70	22.20	10.40	10.00	27.60	23.50	16.40	21.20
WT. OF DRY SOIL,	g	83.50	83.80	104.00	96.80	110.70	134.20	106.30	118.10	132.60	120.00
WATER CONTENT,	%	3.83	2.39	4.13	4.75	13.82	7.08	8.94	8.64	15.69	11.33

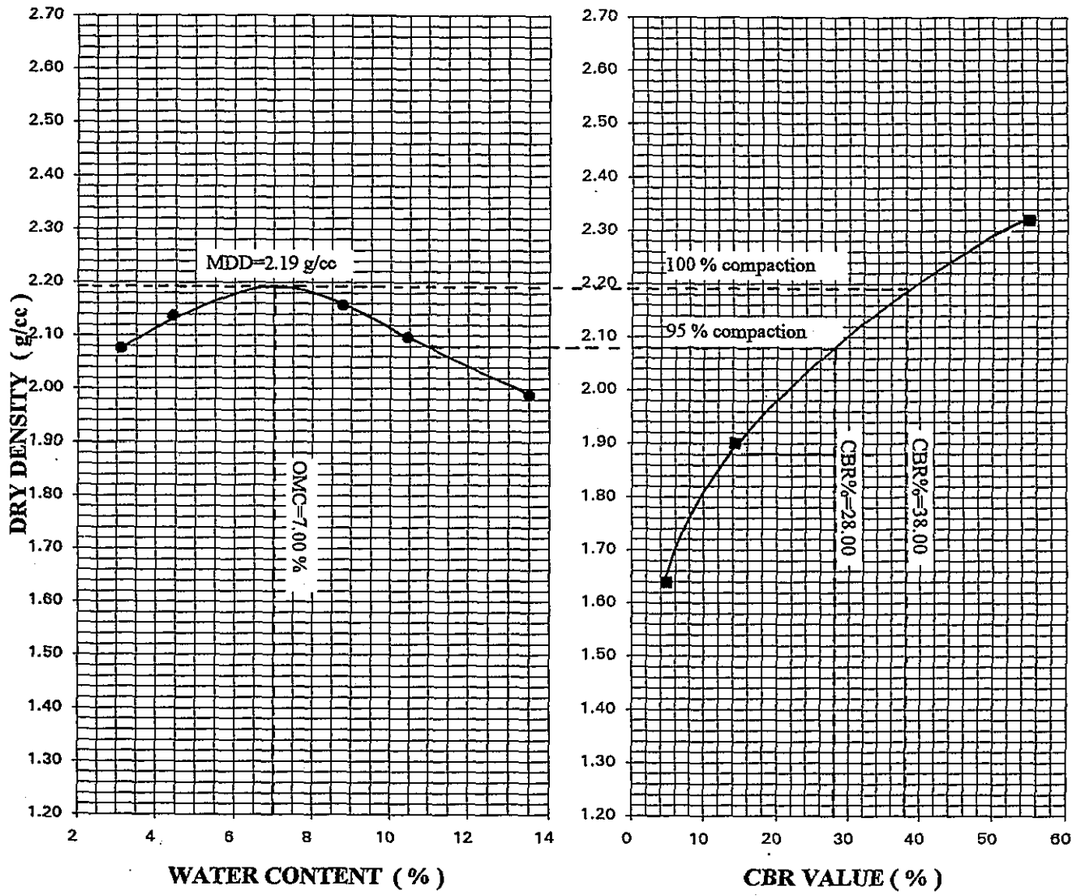
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	3.11	4.44	10.45	8.79	13.51
WT. OF SOIL+MOLD,	g	11050	11250	11432	11500	11305
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4655	4855	5037	5105	4910
WET DENSITY,	g/cc	2.14	2.23	2.32	2.35	2.26
DRY DENSITY,	g/cc	2.08	2.14	2.10	2.16	1.99



MAXIMUM DRY DENSITY = 2.19 g/cc OPTIMUM MOISTURE CONTENT = 7.00 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 33

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-7 (Sta. 1272+700)	0.60-1.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy CLAY		A-6 (13)

COMPACTION TEST

MOLD DIMENSIONS:

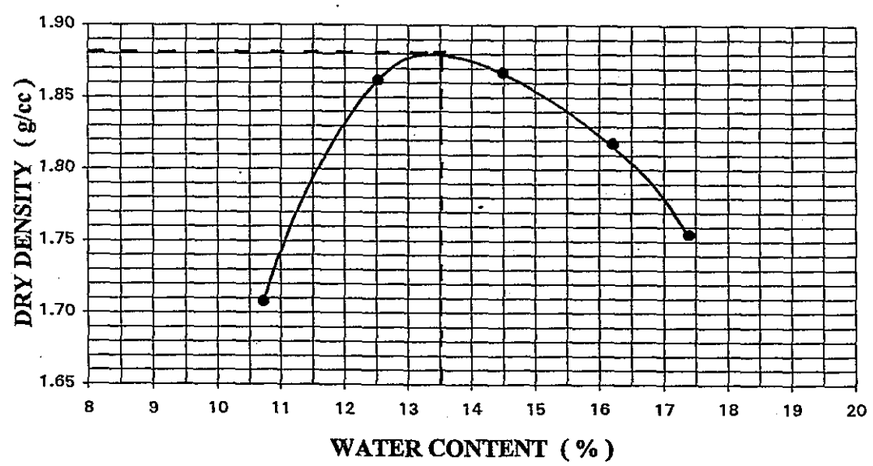
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		298	280	36X	D10	36X	D10	7X	1558	377	E50
WT. OF CAN+WET SOIL,	g	139.30	134.60	150.00	141.90	155.00	141.90	148.40	149.50	162.10	163.50
WT. OF CAN+DRY SOIL,	g	127.50	123.00	134.00	129.20	134.30	129.20	130.00	130.50	142.00	140.00
WT. OF WATER,	g	11.80	11.60	16.00	12.70	20.70	12.70	18.40	19.00	20.10	23.50
WT. OF CAN,	g	16.00	16.40	15.90	18.80	15.90	18.80	15.20	14.80	16.20	15.10
WT. OF DRY SOIL,	g	111.50	106.60	118.10	110.40	118.40	110.40	114.80	115.70	125.80	124.90
WATER CONTENT,	%	10.58	10.88	13.55	11.50	17.48	11.50	16.03	16.42	15.98	18.82

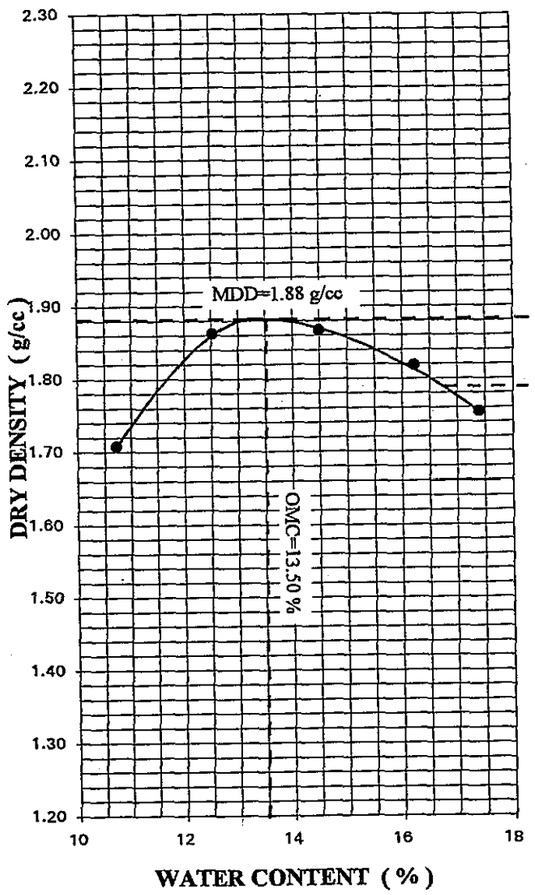
DENSITY DETERMINATION

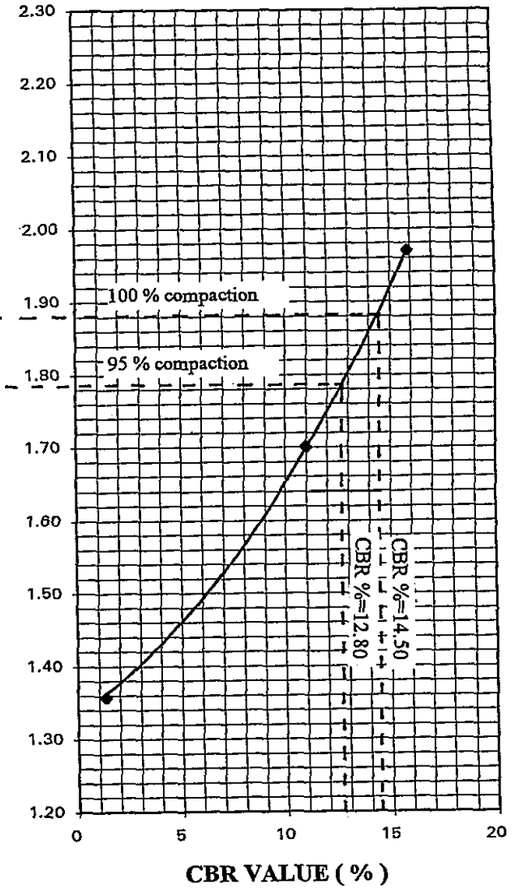
AVE. WATER CONTENT,	%	10.73	12.53	14.49	16.22	17.40
WT. OF SOIL+MOLD,	g	11560	11990	12080	12028	11916
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3980	4410	4500	4448	4336
WET DENSITY,	g/cc	1.89	2.10	2.14	2.11	2.06
DRY DENSITY,	g/cc	1.71	1.86	1.87	1.82	1.75



MAXIMUM DRY DENSITY = 1.88 g/cc OPTIMUM MOISTURE CONTENT = 13.50 %

COMPACTION - CBR RELATION

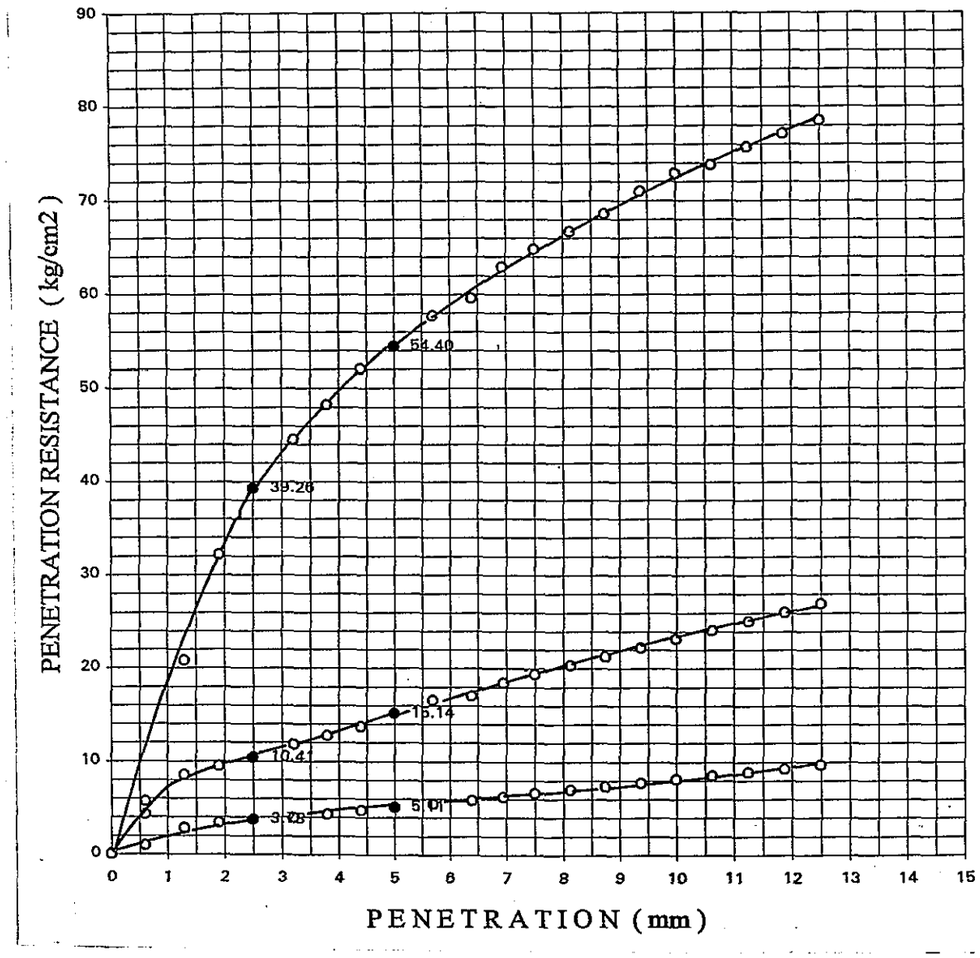




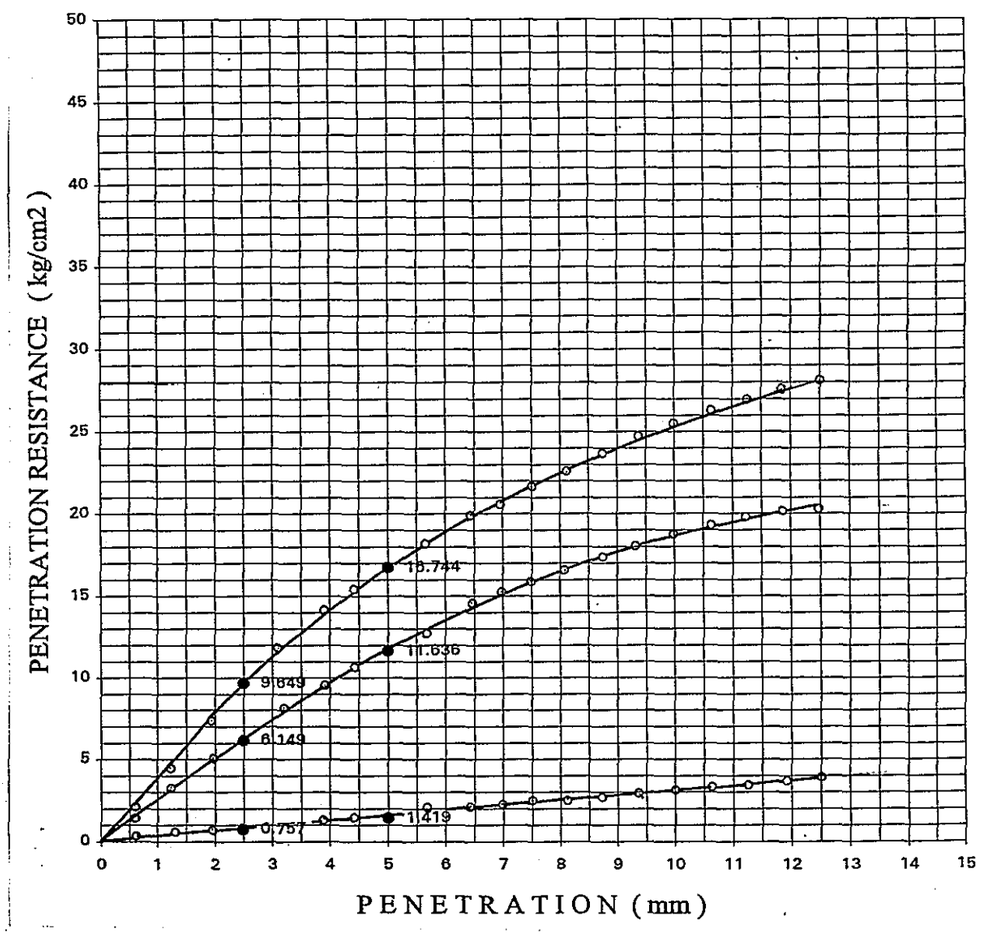
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-34

CBR PENETRATION RESISTANCE GRAPH

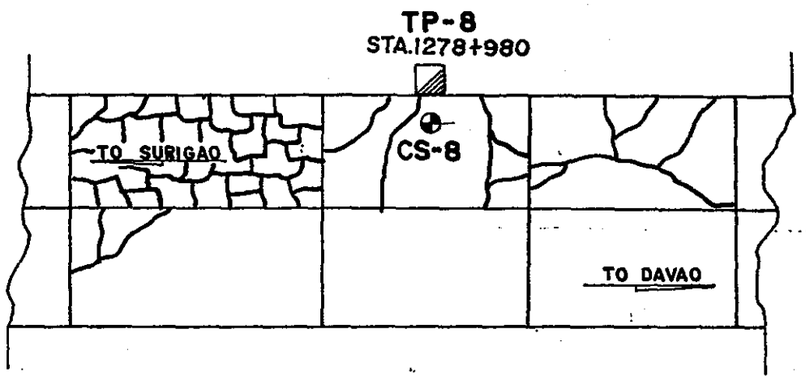
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-7 (Sta. 1272+700)	0.25-0.60 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown MED. GRAVEL & SAND		A-1-b (0)

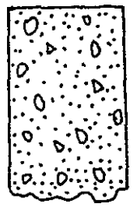


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-7 (Sta. 1272+700)	0.60-1.50	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy CLAY		A-6 (13)

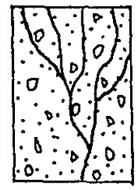


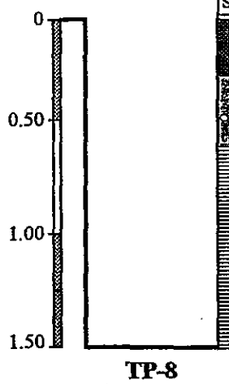
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION- CBR TEST RESULTS	SHEET NO.: P – 35




CS-8

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
24.0	10.0	2.14	3530


MODE OF FAILURE



TP-8

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.240				
	Brown sandy GRAVEL, little amount of silt.	0.16	NP	NP	NP	A-1-a (0)
	Yellowish brown CLAY, traces of fine sand.	1.10	77	34	43	A-7-6 (20)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		8	
STATION (Km)		1278+980	
DEPTH, (cm)		0.25	0.40
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5966.00	5975.00
SAND+JUG (AFTER),	g	1960.00	2495.00
WEIGHT OF SAND USED,	g	4006.00	3480.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2398.00	1872.00
VOLUME OF HOLE,	cu.cm	1789.55	1397.01
WEIGHT OF WET SOIL,	g	3290.00	2139.00
WET DENSITY,	g/cc	1.84	1.53

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	943.50	400.00
WT. OF DRY SOIL+CAN,	g	898.00	270.90
WEIGHT OF CAN,	g	90.50	72.80
MOISTURE LOSS,	g	45.50	129.10
WEIGHT OF DRY SOIL,	g	807.50	198.10
MOISTURE CONTENT,	%	5.63	65.17
DRY DENSITY,	g/cc	1.74	0.93

LABORATORY COMPACTION:

WET DENSITY,	g/cc	1.84	1.53
DRY DENSITY,	g/cc	1.74	0.93
MAXIMUM DRY DENSITY,	g/cc	2.25	1.52
OPT. MOISTURE CONTENT,	%	5.00	21.50
PERCENT COMPACTION		77.35	60.99

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 36

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-8 (Sta. 1278+980)	0.24-0.40 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

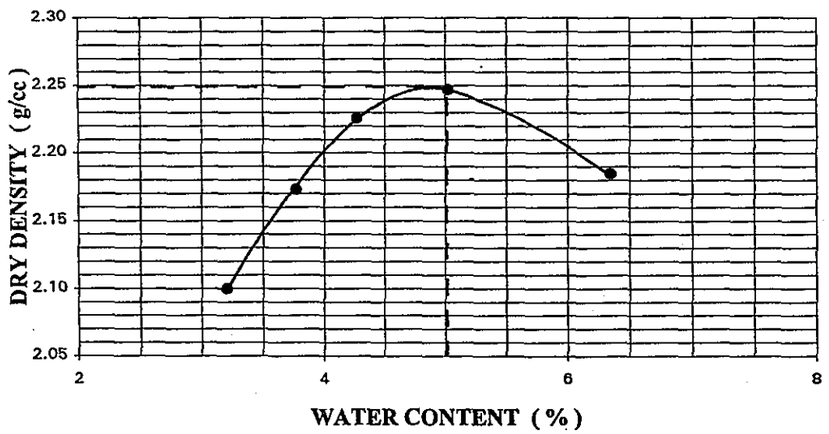
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		92	115	253	E1	D8	99	101	136X	2X	E50
WT. OF CAN+WET SOIL,	g	118.00	119.50	120.00	122.80	132.70	130.90	131.10	135.60	153.10	150.70
WT. OF CAN+DRY SOIL,	g	115.30	116.20	118.90	116.10	128.00	126.40	125.80	130.00	144.40	143.00
WT. OF WATER,	g	2.70	3.30	1.10	6.70	4.70	4.50	5.30	5.60	8.70	7.70
WT. OF CAN,	g	21.30	23.00	15.90	12.60	13.80	24.80	23.20	15.30	14.70	14.50
WT. OF DRY SOIL,	g	94.00	93.20	103.00	103.50	114.20	101.60	102.60	114.70	129.70	128.50
WATER CONTENT,	%	2.87	3.54	1.07	6.47	4.12	4.43	5.17	4.88	6.71	5.99

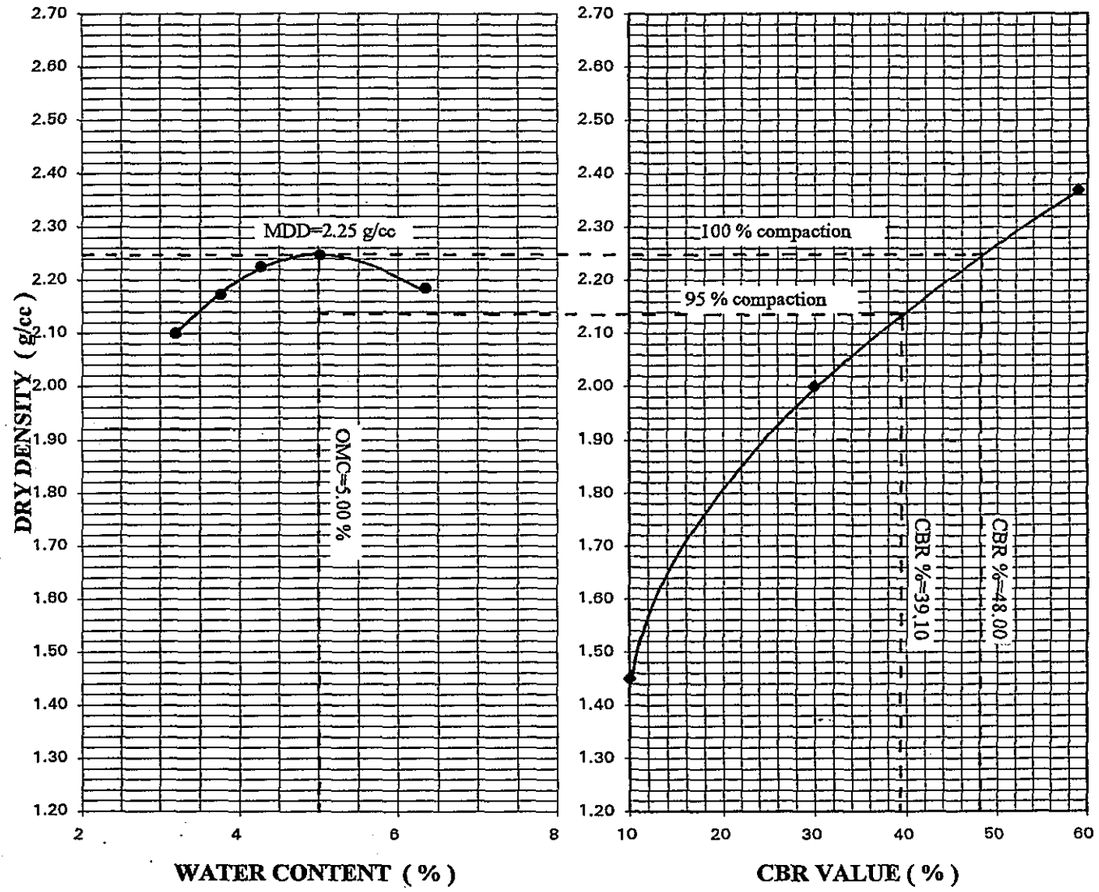
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	3.21	3.77	4.27	5.02	6.35
WT. OF SOIL+MOLD,	g	11109	11300	11444	11529	11450
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4714	4905	5049	5134	5055
WET DENSITY,	g/cc	2.17	2.25	2.32	2.36	2.32
DRY DENSITY,	g/cc	2.10	2.17	2.23	2.25	2.18



MAXIMUM DRY DENSITY = 2.25 g/cc OPTIMUM MOISTURE CONTENT = 5.00 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 37

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-8 (Sta. 1278+980)	0.40-1.50 m	October 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Yellowish brown CLAY		A-7-6 (20)

COMPACTION TEST

MOLD DIMENSIONS:

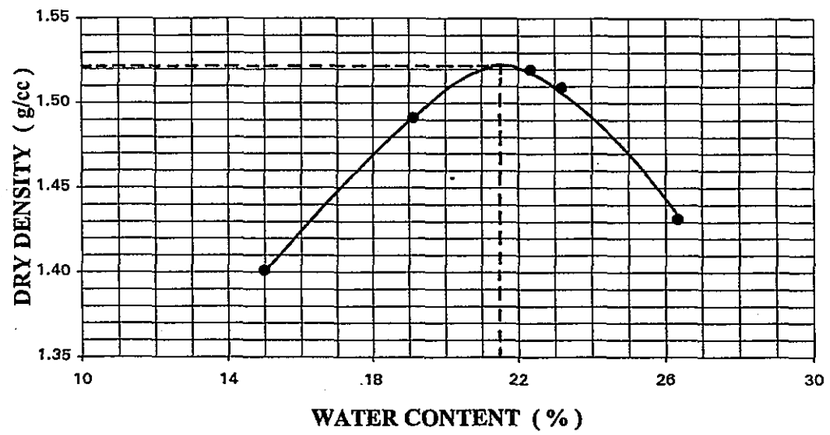
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		1025	D-8	E-2	136X	3-X	G-18	99	126	353	1058
WT. OF CAN+WET SOIL,	g	115.20	119.10	127.80	120.50	130.00	125.50	140.60	147.80	142.70	147.50
WT. OF CAN+DRY SOIL,	g	103.00	104.80	109.20	104.00	109.00	106.50	115.20	128.40	118.30	121.10
WT. OF WATER,	g	12.20	14.30	18.60	16.50	21.00	19.00	25.40	19.40	24.40	26.40
WT. OF CAN,	g	16.90	14.60	13.90	16.00	15.80	20.70	25.90	20.40	24.00	22.70
WT. OF DRY SOIL,	g	86.10	90.20	95.30	88.00	93.20	85.80	89.30	108.00	94.30	98.40
WATER CONTENT,	%	14.17	15.85	19.52	18.75	22.53	22.14	28.44	17.96	25.87	26.83

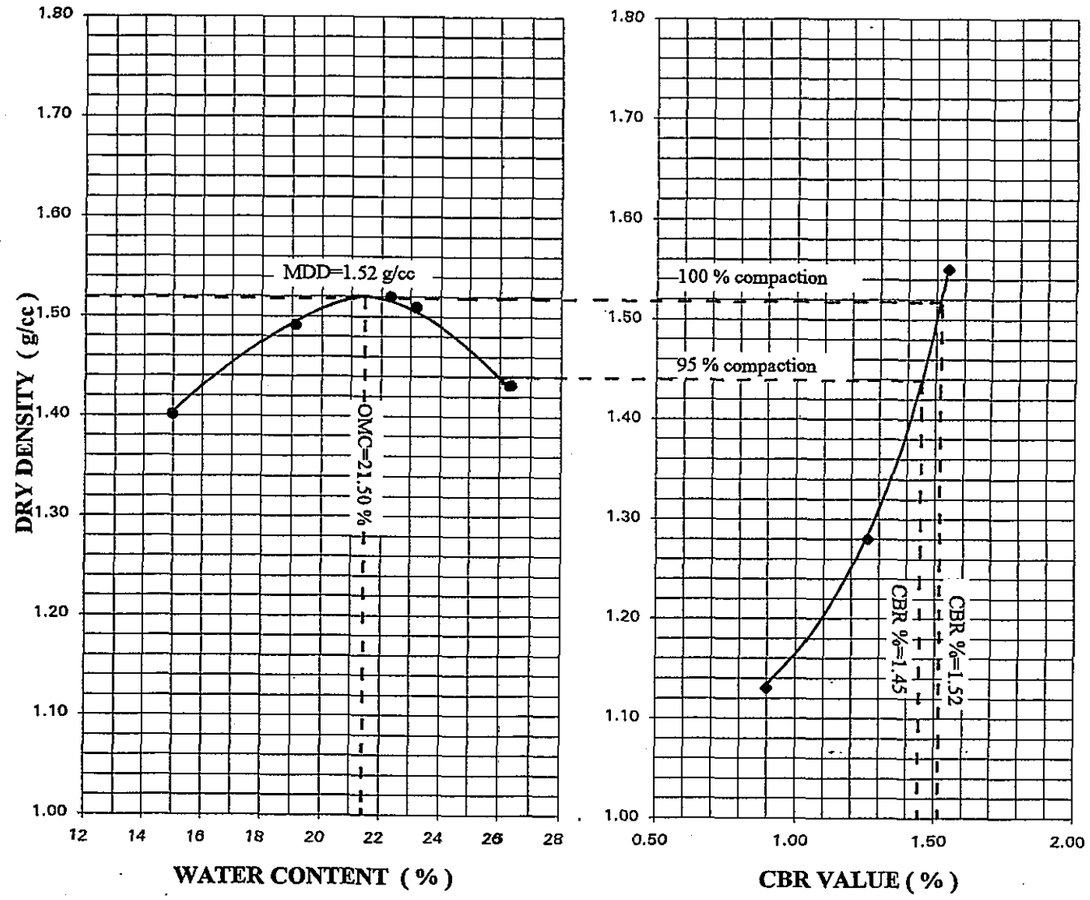
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	15.01	19.13	22.34	23.20	26.35
WT. OF SOIL+MOLD,	g	9900	10260	10440	10440	10330
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	3505	3865	4045	4045	3935
WET DENSITY,	g/cc	1.61	1.78	1.86	1.86	1.81
DRY DENSITY,	g/cc	1.40	1.49	1.52	1.51	1.43



MAXIMUM DRY DENSITY = 1.52 g/cc OPTIMUM MOISTURE CONTENT = 21.50 %

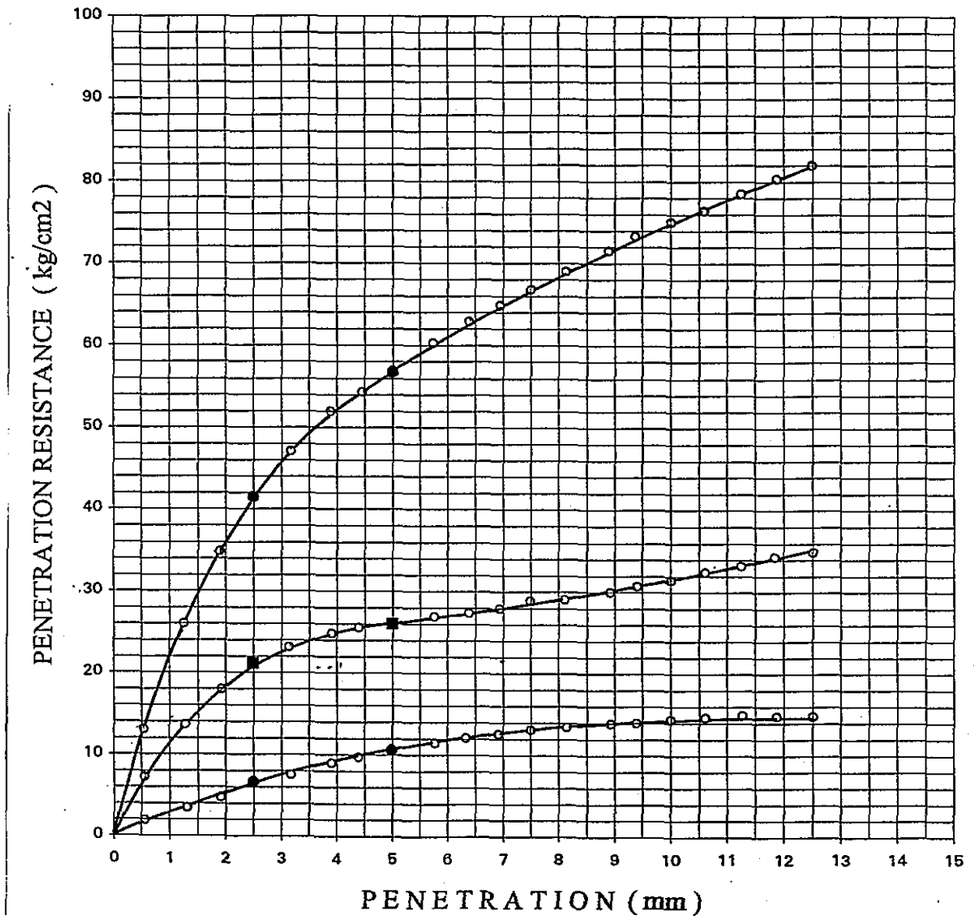
COMPACTION - CBR RELATION



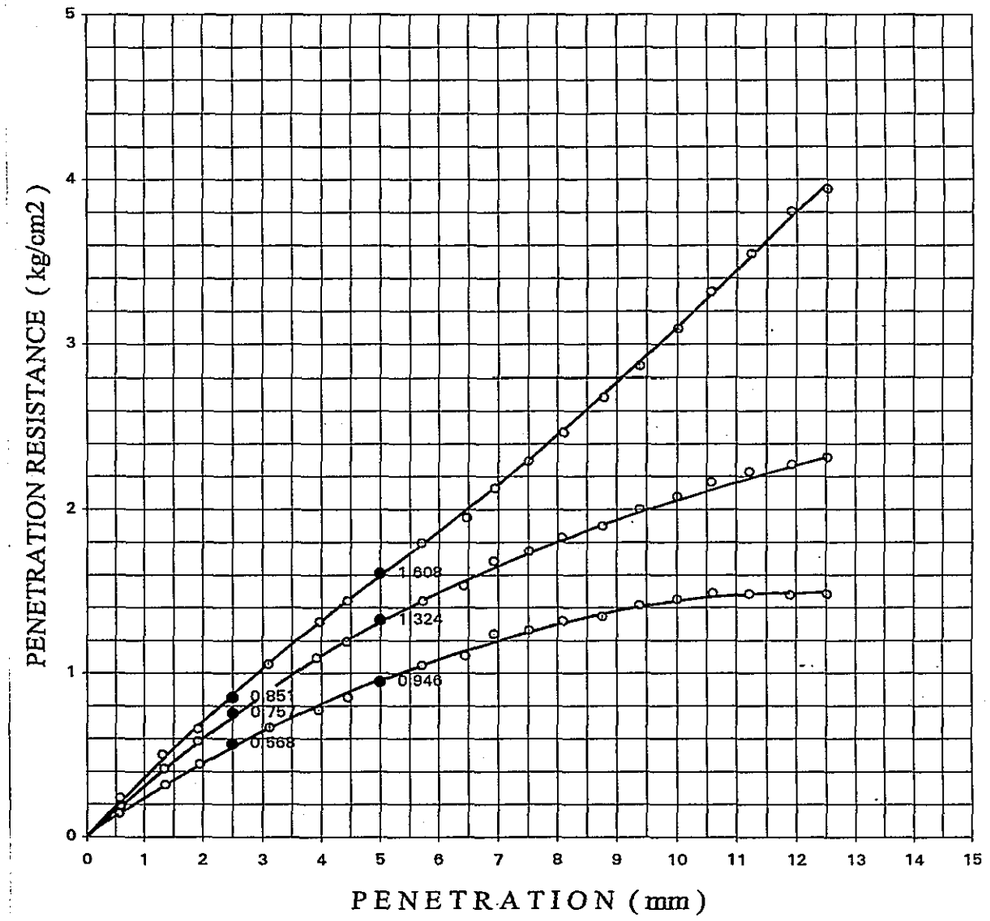
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 38

CBR PENETRATION RESISTANCE GRAPH

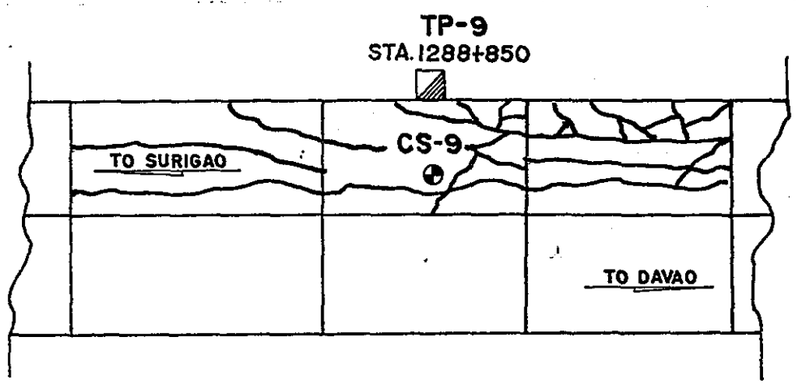
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-8 (Sta. 1278+980)	0.24-0.40 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

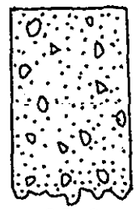


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-8 (Sta. 1278+980)	0.40-1.50 m	October 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Yellowish brown CLAY		A-7-6 (20)



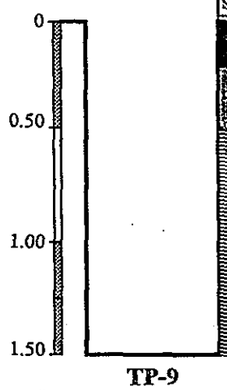
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 39





FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
21.0	10.0	2.13	1478

MODE OF FAILURE



SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.210				
	Brown sandy GRAVEL little amount of silt.	0.29	NP	NP	NP	A-1-b (0)
	Brown GRAVEL & CLAY, traces of sand.	1.00	54	33	21	A-7-5 (11)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		9	
STATION (Km)		1288+850	
DEPTH, (cm)		0.25	0.50
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5770.00	5980.00
SAND+JUG (AFTER),	g	2275.00	2255.00
WEIGHT OF SAND USED,	g	3495.00	3725.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1887.00	2117.00
VOLUME OF HOLE,	cu.cm	1408.21	1579.85
WEIGHT OF WET SOIL,	g	2940.00	2842.00
WET DENSITY,	g/cc	2.09	1.80

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1430.00	573.50
WT. OF DRY SOIL+CAN,	g	1345.60	492.30
WEIGHT OF CAN,	g	105.00	108.00
MOISTURE LOSS,	g	84.40	81.20
WEIGHT OF DRY SOIL,	g	1240.60	384.30
MOISTURE CONTENT,	%	6.80	21.13
DRY DENSITY,	g/cc	1.95	1.49

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.09	1.80
DRY DENSITY,	g/cc	1.95	1.49
MAXIMUM DRY DENSITY,	g/cc	2.08	1.55
OPT. MOISTURE CONTENT,	%	8.50	20.50
PERCENT COMPACTION		93.98	95.81

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P –40

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-9 (Sta. 1288+850)	0.21-0.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-b (0)

COMPACTION TEST

MOLD DIMENSIONS:

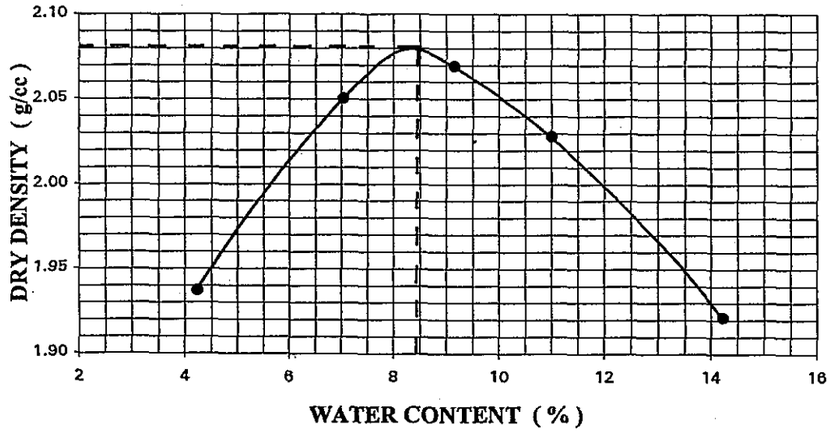
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		G44	5X	E46	E40	26X	C5	E11	319	260	E44
WT. OF CAN+WET SOIL,	g	123.30	124.60	144.40	145.50	166.00	162.60	185.70	184.30	204.10	203.20
WT. OF CAN+DRY SOIL,	g	119.10	120.00	135.70	137.20	153.00	151.00	167.80	168.70	182.50	178.30
WT. OF WATER,	g	4.20	4.60	8.70	8.30	13.00	11.60	17.90	15.60	21.60	24.90
WT. OF CAN,	g	16.20	15.40	16.00	15.50	16.80	19.10	16.00	16.50	16.60	17.10
WT. OF DRY SOIL,	g	102.90	104.60	119.70	121.70	136.20	131.90	151.80	152.20	165.90	161.20
WATER CONTENT,	%	4.08	4.40	7.27	6.82	9.54	8.79	11.79	10.25	13.02	15.45

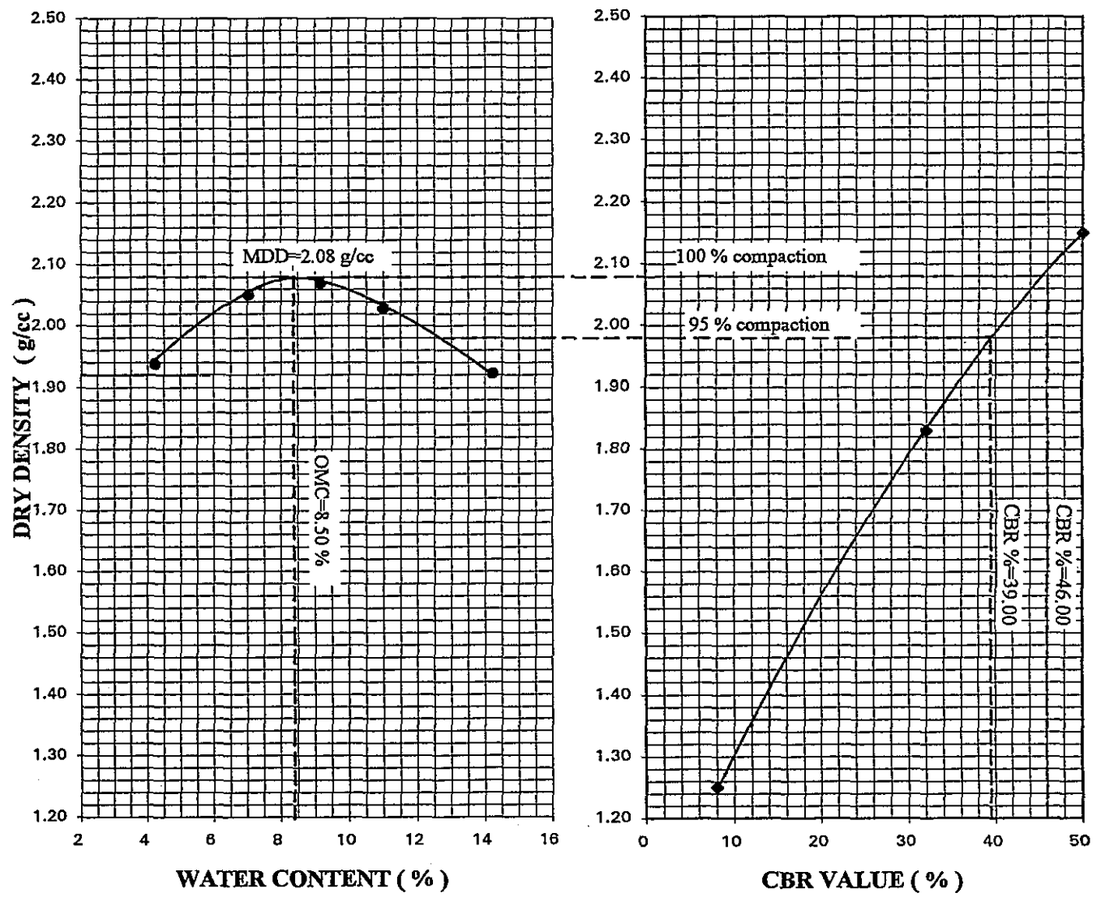
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	4.24	7.04	9.17	11.02	14.23
WT. OF SOIL+MOLD,	g	11830	12200	12335	12320	12200
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4250	4620	4755	4740	4620
WET DENSITY,	g/cc	2.02	2.19	2.26	2.25	2.19
DRY DENSITY,	g/cc	1.94	2.05	2.07	2.03	1.92



MAXIMUM DRY DENSITY = 2.08 g/cc OPTIMUM MOISTURE CONTENT = 8.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 41

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-9 (Sta. 1288+850)	0.50-1.50 m	October 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown GRAVEL & CLAY		A-7-5 (11)

COMPACTION TEST

MOLD DIMENSIONS:

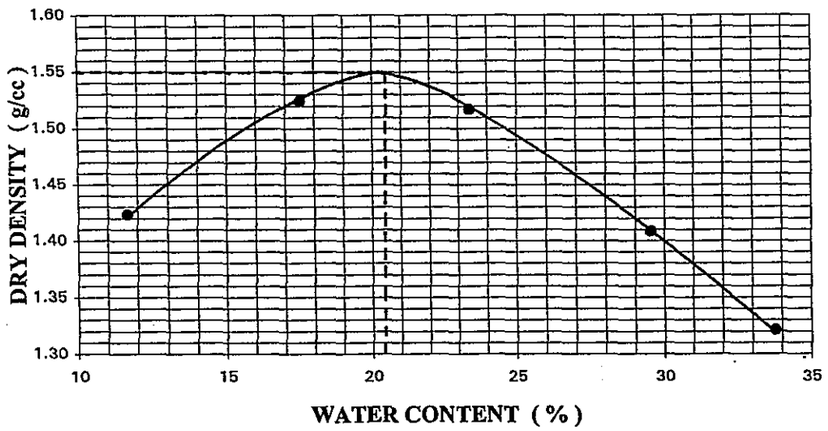
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		191	176	175	207	190	1070	199	156	160	148
WT. OF CAN+WET SOIL,	g	114.10	113.00	133.20	133.70	154.40	153.50	176.80	175.40	195.20	195.20
WT. OF CAN+DRY SOIL,	g	109.00	97.50	119.00	112.10	130.00	123.70	139.40	137.90	149.20	149.00
WT. OF WATER,	g	5.10	15.50	14.20	21.60	24.40	29.80	37.40	37.50	46.00	46.20
WT. OF CAN,	g	11.00	12.00	12.80	12.40	10.00	11.10	11.30	12.50	12.70	12.60
WT. OF DRY SOIL,	g	98.00	85.50	106.20	99.70	120.00	112.60	128.10	125.40	136.50	136.40
WATER CONTENT,	%	5.20	18.13	13.37	21.66	20.33	26.47	29.20	29.90	33.70	33.87

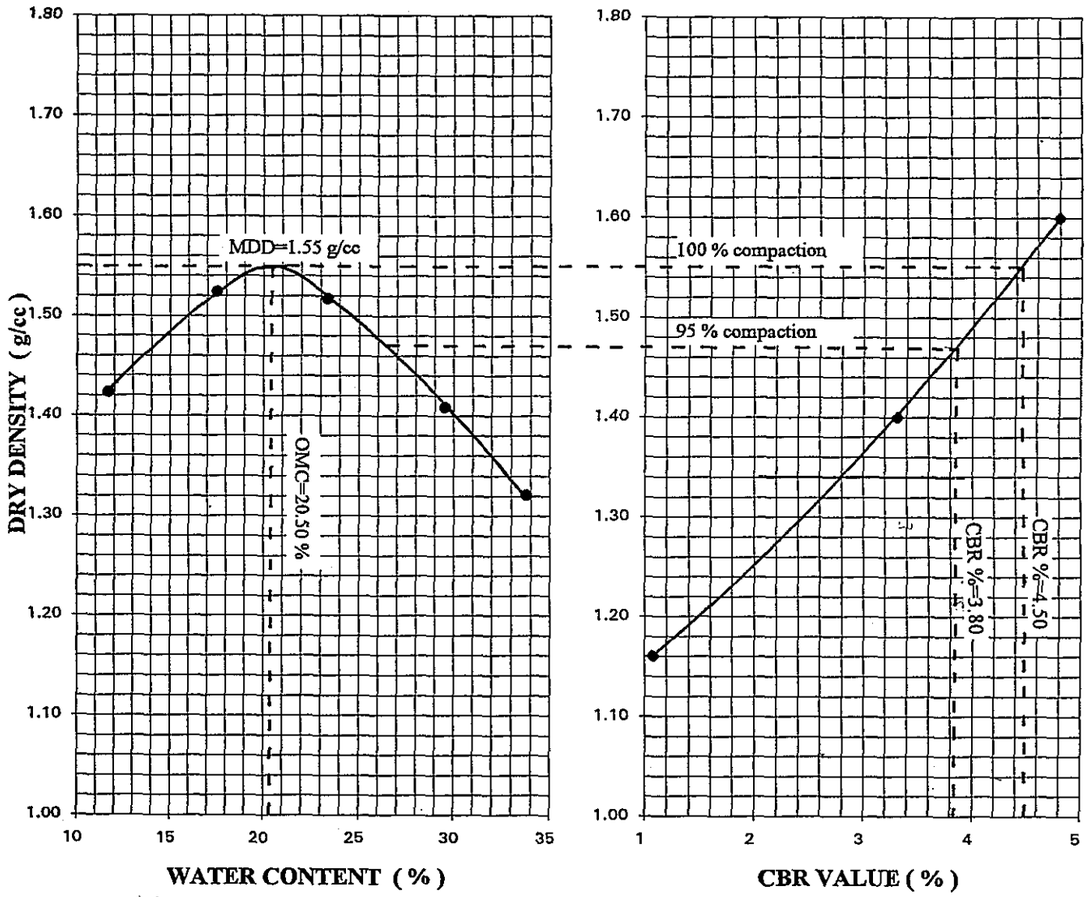
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	11.67	17.52	23.40	29.55	33.79
WT. OF SOIL+MOLD,	g	10925	11350	11520	11420	11300
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3345	3770	3940	3840	3720
WET DENSITY,	g/cc	1.59	1.79	1.87	1.82	1.77
DRY DENSITY,	g/cc	1.42	1.52	1.52	1.41	1.32



MAXIMUM DRY DENSITY = 1.55 g/cc OPTIMUM MOISTURE CONTENT = 20.50 %

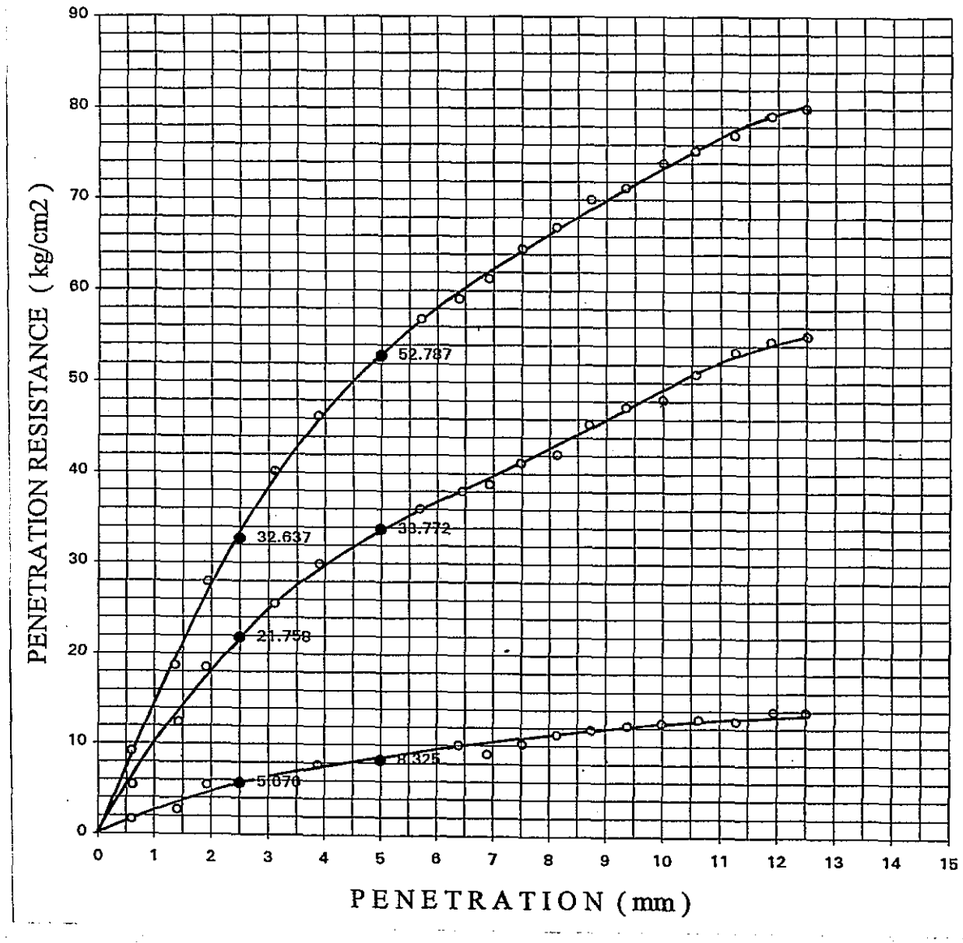
COMPACTION - CBR RELATION



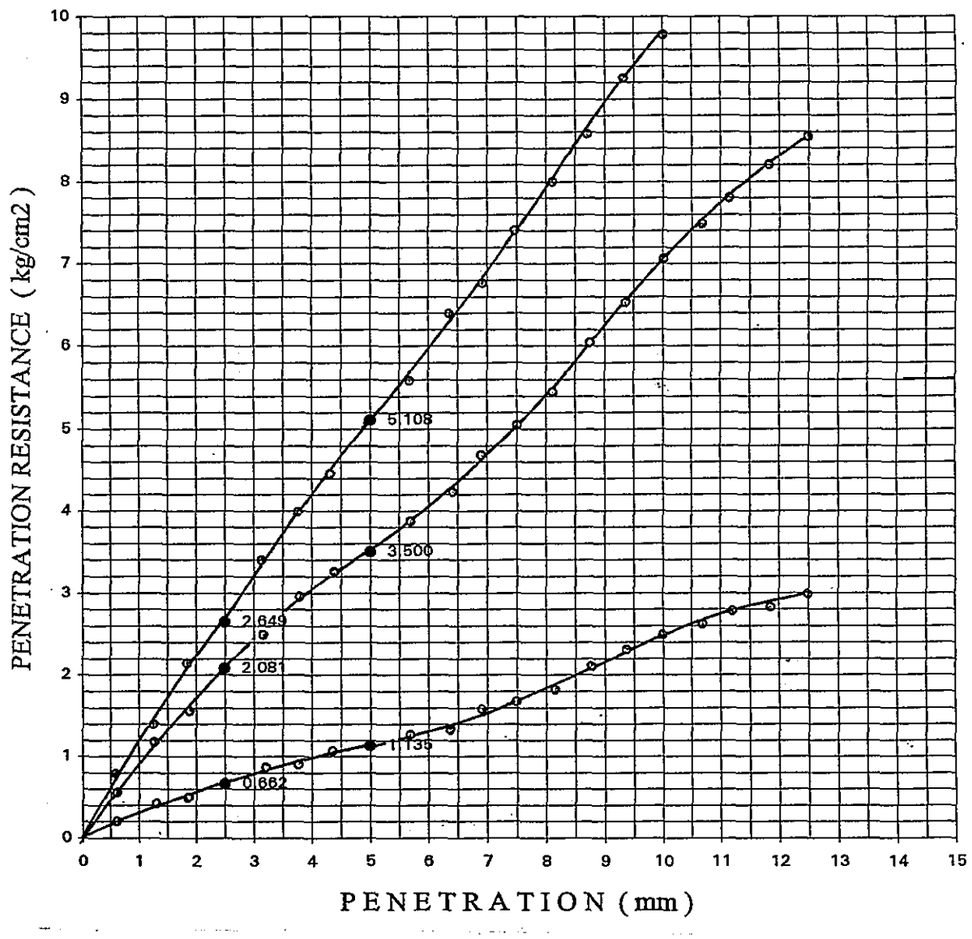
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 42

CBR PENETRATION RESISTANCE GRAPH

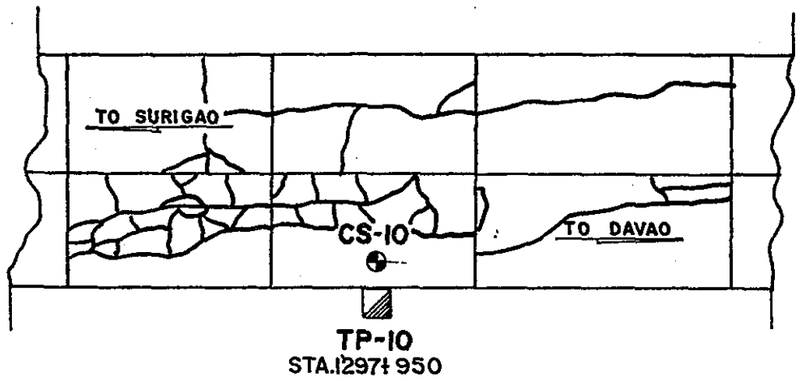
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-9 (Sta. 1288+850)	0.21-0.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-b (0)



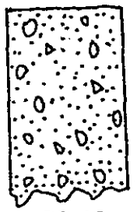
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-9 (Sta. 1288+850)	0.50-1.50 m	October 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown GRAVEL & CLAY		A-7-5 (11)



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-43

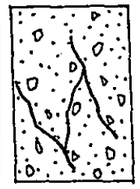


TP-10
STA.1297+950

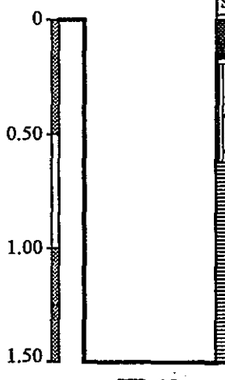


CS-10

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
18.0	10.0	1.508	3471



MODE OF FAILURE



TP-10

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.180				
	Gray GRAVEL & SILT, little amount of sand.	0.42	NP	NP	NP	A-6 (3)
	Brown silty CLAY, traces of fine sand.	0.90	33	32	11	A-6 (12)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		10	
STATION (Km)		1297+950	
DEPTH, (cm)		0.20	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5760.00	5725.00
SAND+JUG (AFTER),	g	2345.00	2483.00
WEIGHT OF SAND USED,	g	3415.00	3242.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1807.00	1634.00
VOLUME OF HOLE,	cu.cm	1348.51	1219.40
WEIGHT OF WET SOIL,	g	3495.00	2220.00
WET DENSITY,	g/cc	2.59	1.82

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	308.60	172.00
WT. OF DRY SOIL+CAN,	g	300.00	130.70
WEIGHT OF CAN,	g	23.66	11.86
MOISTURE LOSS,	g	8.60	41.30
WEIGHT OF DRY SOIL,	g	276.34	118.84
MOISTURE CONTENT,	%	3.11	34.75
DRY DENSITY,	g/cc	2.51	1.35

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.59	1.82
DRY DENSITY,	g/cc	2.51	1.35
MAXIMUM DRY DENSITY,	g/cc	2.03	1.61
OPT. MOISTURE CONTENT,	%	8.50	20.50
PERCENT COMPACTION		123.82	83.92

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P-44

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-10 (Sta. 1297+950)	0.18-0.60	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray GRAVEL & SILT		A-6 (3)

COMPACTION TEST

MOLD DIMENSIONS:

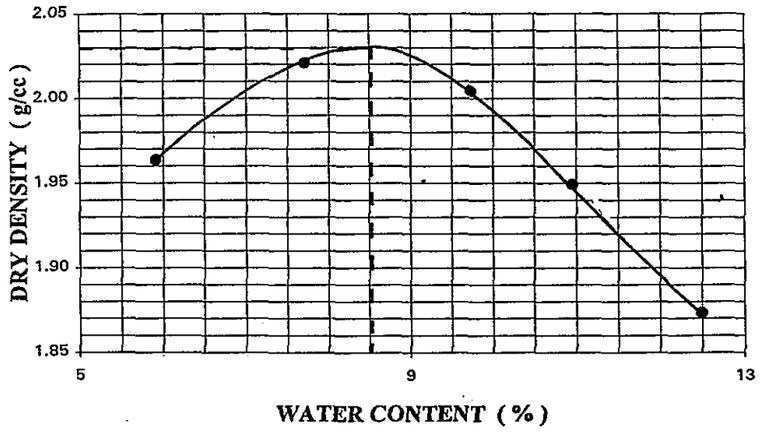
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.	1		2		3		4		5	
MOISTURE CAN NO.	EOH	342	127	1030	103	390	105	77	136	E15
WT. OF CAN+WET SOIL,	109.20	112.10	115.60	116.50	121.10	128.20	135.40	138.50	144.80	154.50
WT. OF CAN+DRY SOIL,	103.80	107.20	110.00	109.20	112.30	119.20	124.60	126.70	134.60	135.20
WT. OF WATER,	5.40	4.90	5.60	7.30	8.80	9.00	10.80	11.80	10.20	19.30
WT. OF CAN,	19.90	16.60	23.70	27.50	23.60	25.10	22.90	22.30	19.80	15.40
WT. OF DRY SOIL,	83.90	90.60	86.30	81.70	88.70	94.10	101.70	104.40	114.80	119.80
WATER CONTENT,	6.44	5.41	6.49	8.94	9.92	9.56	10.62	11.30	8.89	16.11

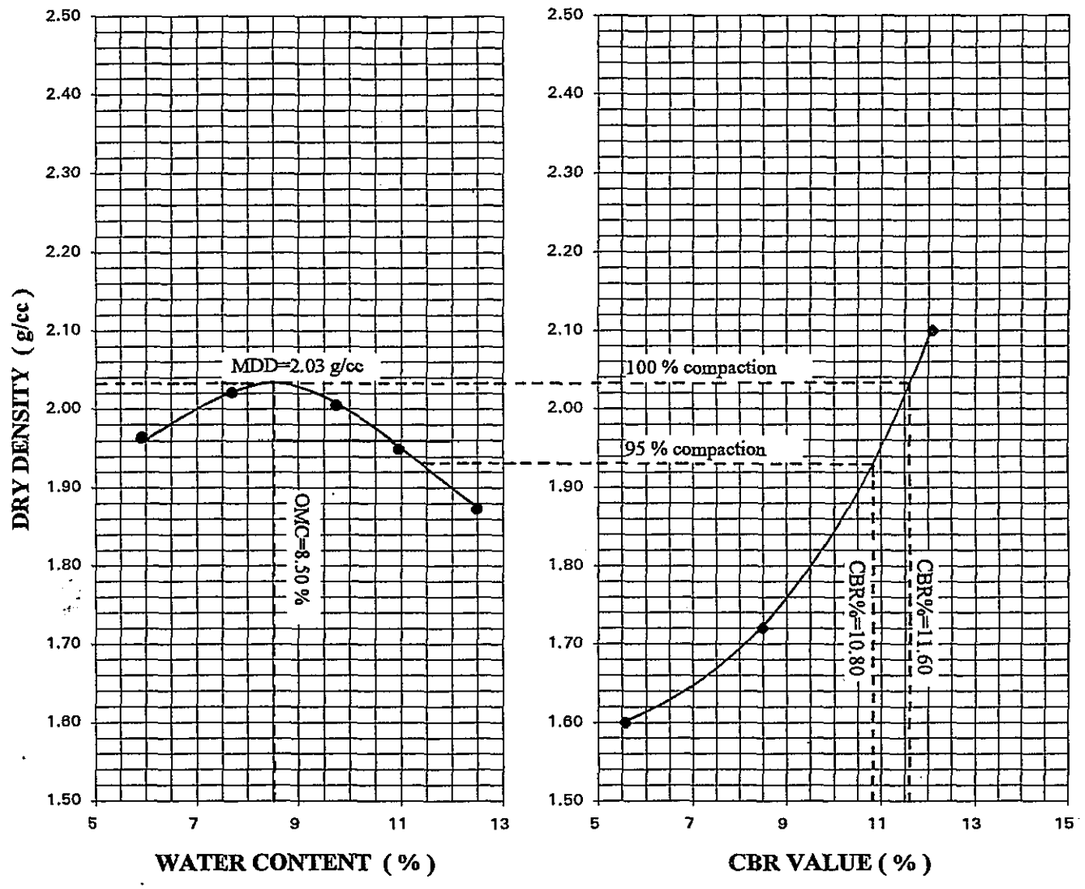
DENSITY DETERMINATION

AVE. WATER CONTENT,	5.92	7.71	9.74	10.96	12.50
WT. OF SOIL+MOLD,	10920	11130	11180	11100	10980
WT. OF MOLD,	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	4525	4735	4785	4705	4585
WET DENSITY,	2.08	2.18	2.20	2.16	2.11
DRY DENSITY,	1.96	2.02	2.00	1.95	1.87



MAXIMUM DRY DENSITY = 2.03 g/cc OPTIMUM MOISTURE CONTENT = 8.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P- 45

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-10 (Sta. 1297+950)	0.60-1.50 m	**TP-10 (Sta. 1297+950)**
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty CLAY		A-6 (12)

COMPACTION TEST

MOLD DIMENSIONS:

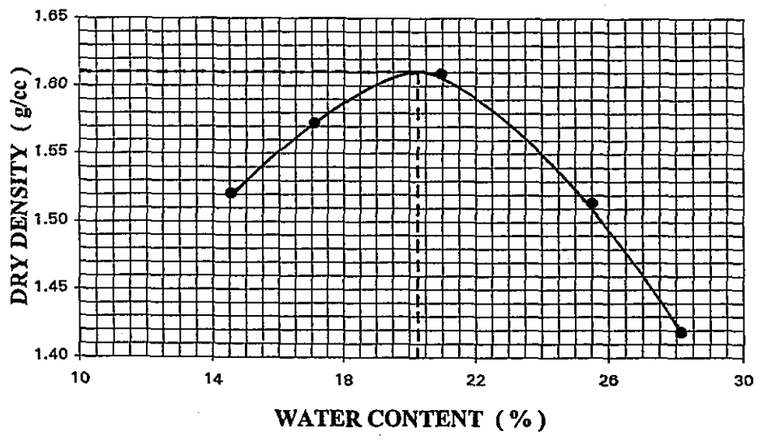
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.	1		2		3		4		5	
MOISTURE CAN NO.	EOH	1037	J4	263	2X	1X	399	2	255	E11
WT. OF CAN+WET SOIL,	124.50	124.80	134.30	134.40	147.10	149.20	152.50	156.50	161.90	170.50
WT. OF CAN+DRY SOIL,	112.00	110.90	117.90	116.90	122.80	129.70	123.70	129.20	132.00	134.60
WT. OF WATER,	12.50	13.90	16.40	17.50	24.30	19.50	28.80	27.30	29.90	35.90
WT. OF CAN,	16.00	24.50	18.50	18.00	15.70	28.50	16.70	16.00	17.00	16.00
WT. OF DRY SOIL,	96.00	86.40	99.40	98.90	107.10	101.20	107.00	113.20	115.00	118.60
WATER CONTENT,	13.02	16.09	16.50	17.69	22.69	19.27	26.92	24.12	26.00	30.27

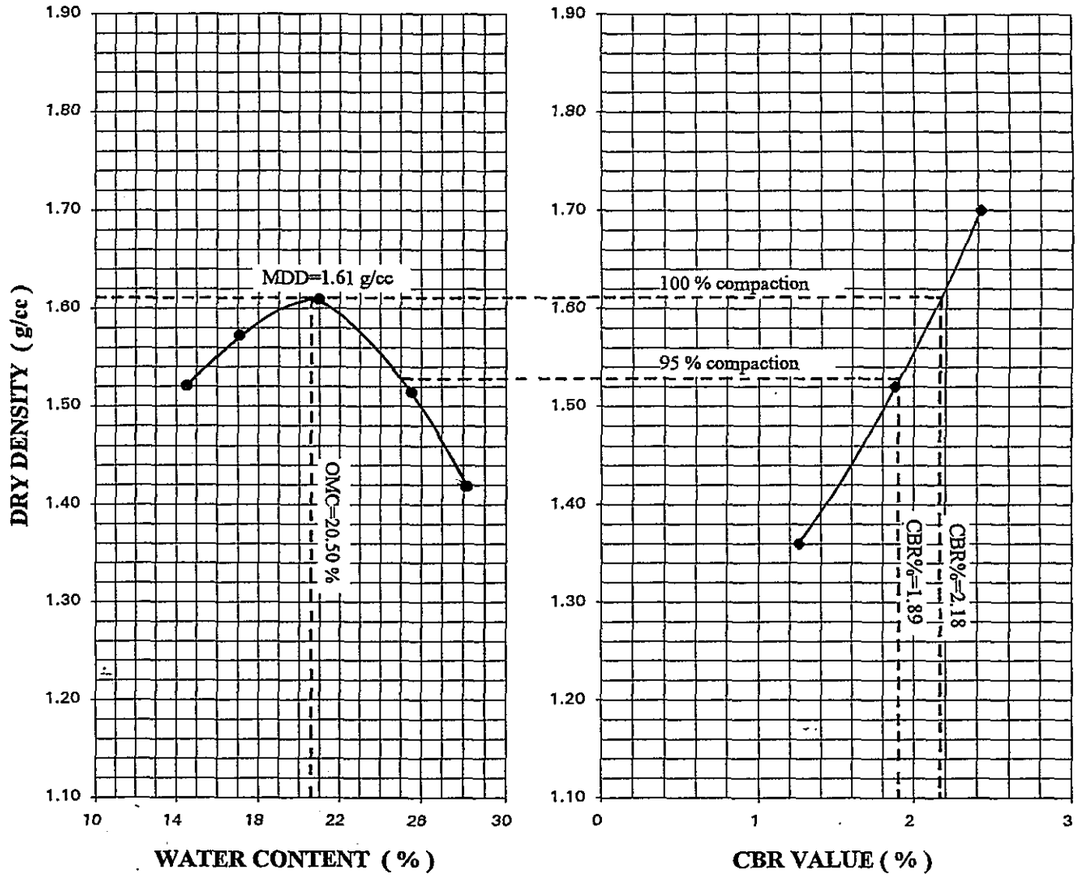
DENSITY DETERMINATION

AVE. WATER CONTENT,	14.55	17.10	20.98	25.52	28.13
WT. OF SOIL+MOLD,	10185	10400	10630	10530	10350
WT. OF MOLD,	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	3790	4005	4235	4135	3955
WET DENSITY,	1.74	1.84	1.95	1.90	1.82
DRY DENSITY,	1.52	1.57	1.61	1.51	1.42



MAXIMUM DRY DENSITY = 1.61 g/cc *OPTIMUM MOISTURE CONTENT =* 20.50 %

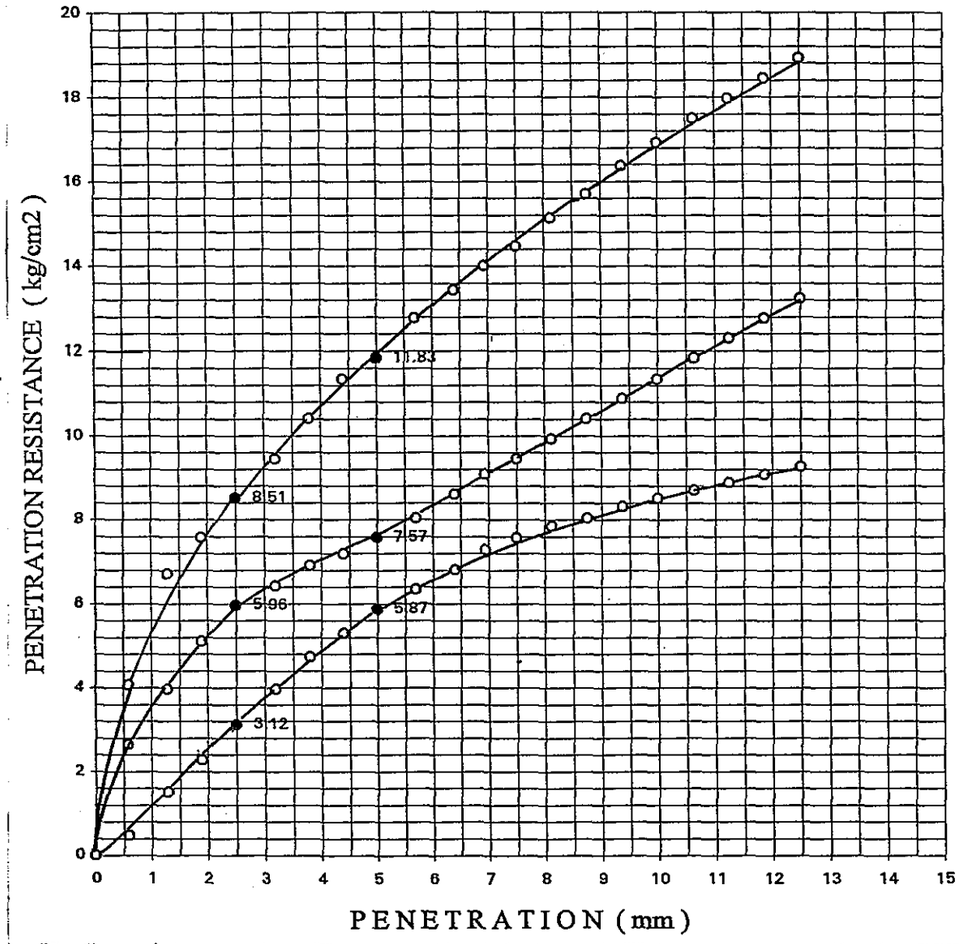
COMPACTION - CBR RELATION



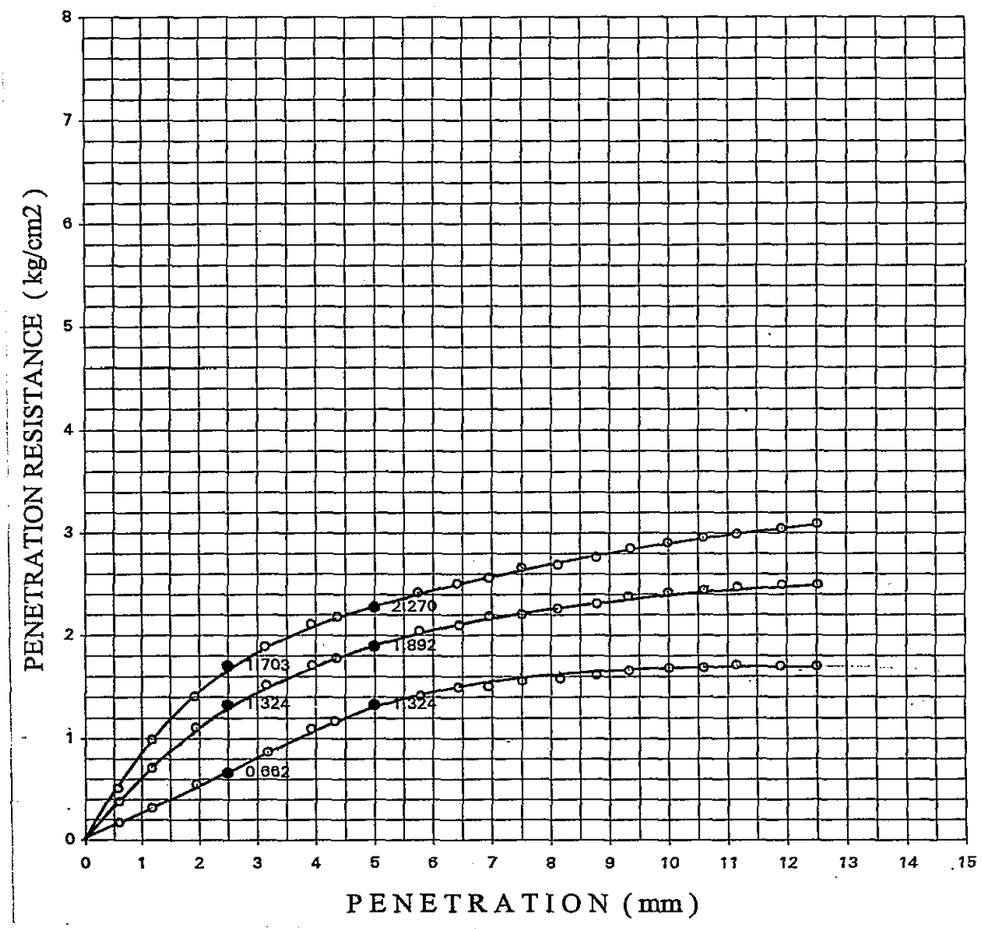
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P - 46

CBR PENETRATION RESISTANCE GRAPH

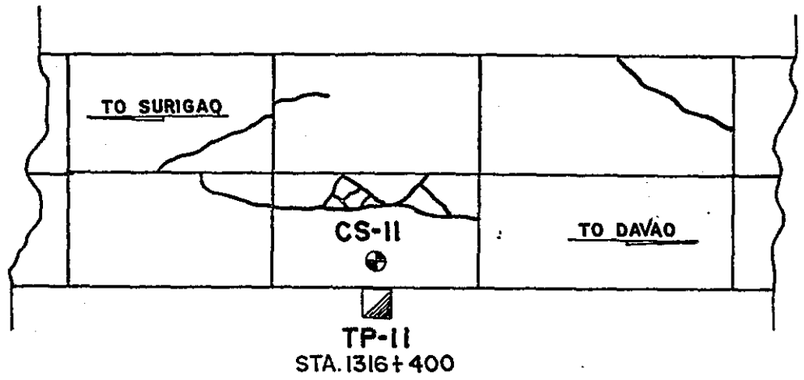
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-10 (Sta. 1297+950)	0.18-0.60	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray GRAVEL & SILT		A-6 (3)

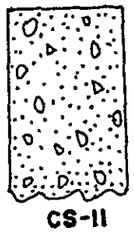


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-10 (Sta. 1297+950)	0.60-1.50 m	TP-10 (Sta. 1297+950)
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty CLAY		A-6 (12)

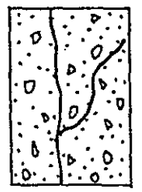


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 47

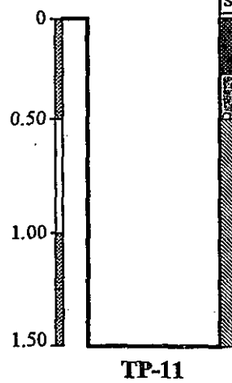




FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
23.0	10.0	1.984	3120



MODE OF FAILURE



TP-11

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.230				
	Brown GRAVEL & SAND.	0.27	NP	NP	NP	A-1-b (0)
	Gray sandy-clayey SILT, traces of fine gravel.	1.00	46	29	17	A-7-5 (12)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		11	
STATION (Km)		1316+400	
DEPTH, (cm)		0.25	0.50
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5840.00	5890.00
SAND+JUG (AFTER),	g	2555.00	1920.00
WEIGHT OF SAND USED,	g	3285.00	3970.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1677.00	2362.00
VOLUME OF HOLE,	cu.cm	1251.49	1762.69
WEIGHT OF WET SOIL,	g	3173.00	3175.00
WET DENSITY,	g/cc	2.54	1.80

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	173.70	151.10
WT. OF DRY SOIL+CAN,	g	160.00	106.80
WEIGHT OF CAN,	g	17.15	15.79
MOISTURE LOSS,	g	13.70	44.30
WEIGHT OF DRY SOIL,	g	142.85	91.01
MOISTURE CONTENT,	%	9.59	48.68
DRY DENSITY,	g/cc	2.31	1.21

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.54	1.80
DRY DENSITY,	g/cc	2.31	1.21
MAXIMUM DRY DENSITY,	g/cc	2.18	1.54
OPT. MOISTURE CONTENT,	%	8.50	22.00
PERCENT COMPACTION		106.12	78.67

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 48

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-11 (Sta. 1316+400)	0.23-0.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown GRAVEL & SAND		A-1-b (0)

COMPACTION TEST

MOLD DIMENSIONS:

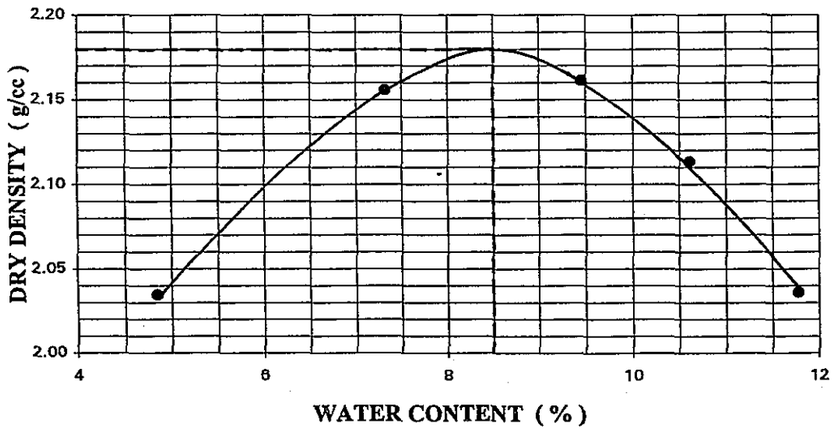
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		1081	153	199	186	149	190	207	158	136	193
WT. OF CAN+WET SOIL,	g	114.20	111.70	131.60	130.20	150.00	152.40	172.50	172.50	194.10	193.20
WT. OF CAN+DRY SOIL,	g	110.30	106.20	123.90	121.70	138.30	140.00	157.30	157.00	174.50	174.60
WT. OF WATER,	g	3.90	5.50	7.70	8.50	11.70	12.40	15.20	15.50	19.60	18.60
WT. OF CAN,	g	8.80	12.30	11.20	13.00	13.00	10.70	12.50	12.50	12.30	12.50
WT. OF DRY SOIL,	g	101.50	93.90	112.70	108.70	125.30	129.30	144.80	144.50	162.20	162.10
WATER CONTENT,	%	3.84	5.86	6.83	7.82	9.34	9.59	10.50	10.73	12.08	11.47

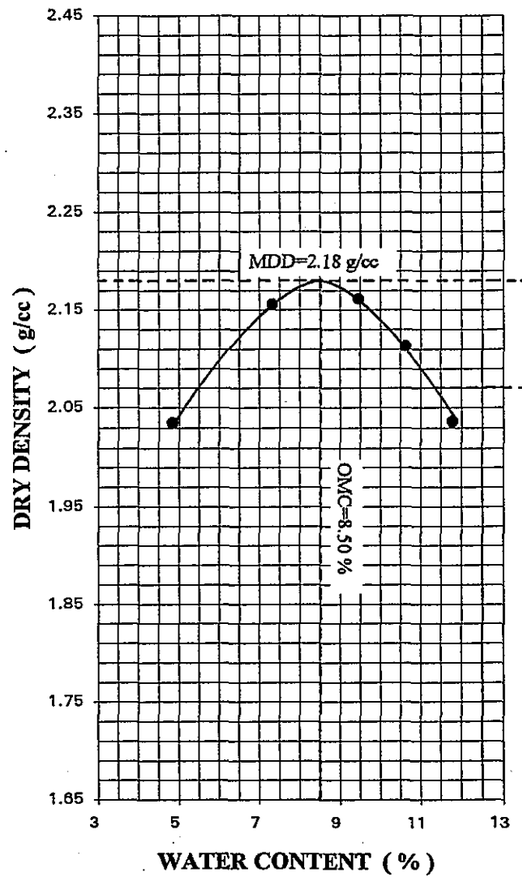
DENSITY DETERMINATION

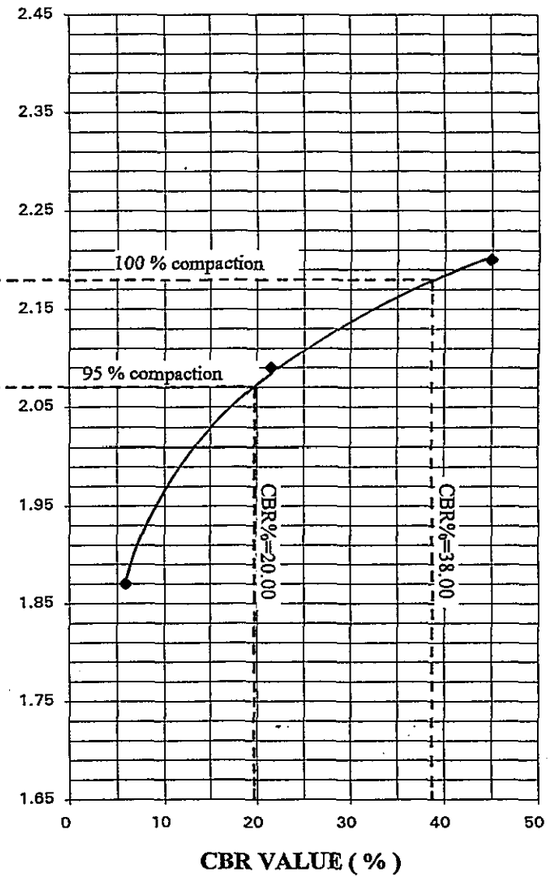
AVE. WATER CONTENT,	%	4.85	7.33	9.46	10.61	11.78
WT. OF SOIL+MOLD,	g	12070	12450	12560	12500	12370
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4490	4870	4980	4920	4790
WET DENSITY,	g/cc	2.13	2.31	2.37	2.34	2.28
DRY DENSITY,	g/cc	2.03	2.16	2.16	2.11	2.04



MAXIMUM DRY DENSITY = 2.18 g/cc OPTIMUM MOISTURE CONTENT = 8.50 %

COMPACTION - CBR RELATION





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 49

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-11 (Sta. 1316+400)	0.50-1.50 m	September 24, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy-clayey SILT		A-7-5 (2)

COMPACTION TEST

MOLD DIMENSIONS:

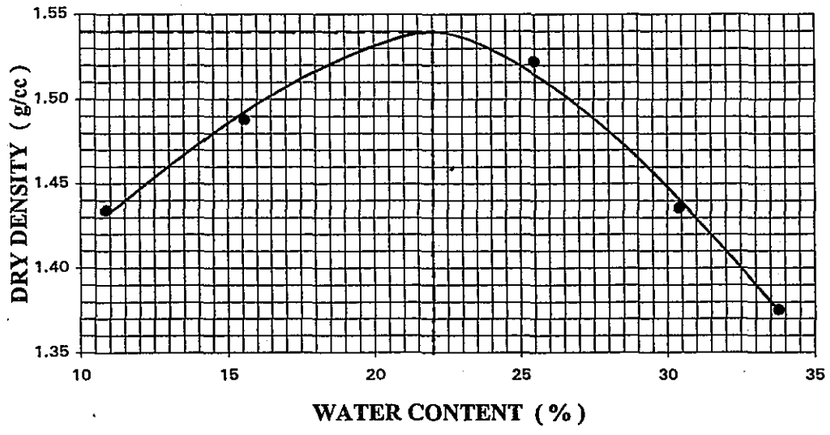
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		280	E23	E20	1040	268	500	380	269	E40	CIA
WT. OF CAN+WET SOIL,	g	144.20	149.50	167.20	168.50	188.50	189.50	192.50	194.10	203.80	206.70
WT. OF CAN+DRY SOIL,	g	136.30	132.20	147.30	150.00	155.40	155.70	153.50	153.50	158.90	156.80
WT. OF WATER,	g	7.90	17.30	19.90	18.50	33.10	33.80	39.00	40.60	44.90	49.90
WT. OF CAN,	g	19.90	16.60	23.70	27.50	23.60	25.10	22.90	22.30	19.80	15.40
WT. OF DRY SOIL,	g	116.40	115.60	123.60	122.50	131.80	130.60	130.60	131.20	139.10	141.40
WATER CONTENT,	%	6.79	14.97	16.10	15.10	25.11	25.88	29.86	30.95	32.28	35.29

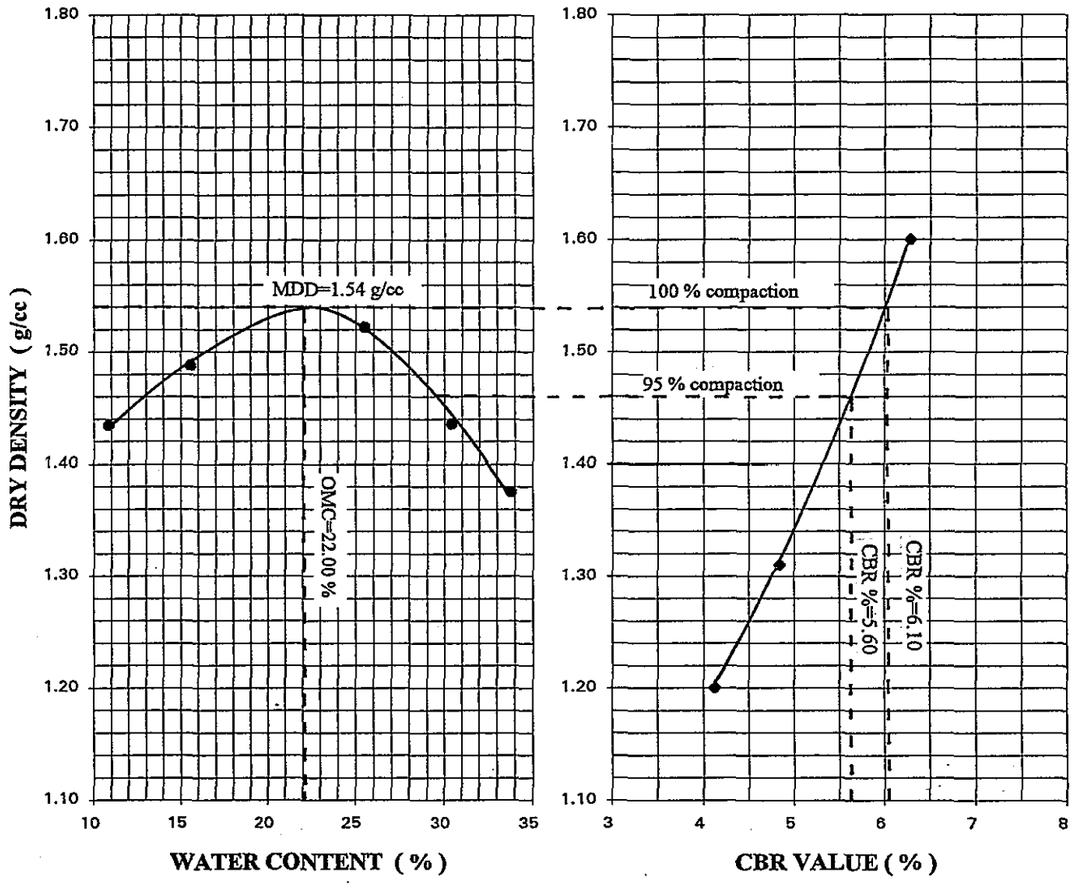
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	10.88	15.60	25.50	30.40	33.78
WT. OF SOIL+MOLD,	g	9854	10137	10551	10468	10398
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	3459	3742	4156	4073	4003
WET DENSITY,	g/cc	1.59	1.72	1.91	1.87	1.84
DRY DENSITY,	g/cc	1.43	1.49	1.52	1.44	1.38



MAXIMUM DRY DENSITY = 1.54 g/cc OPTIMUM MOISTURE CONTENT = 22.00 %

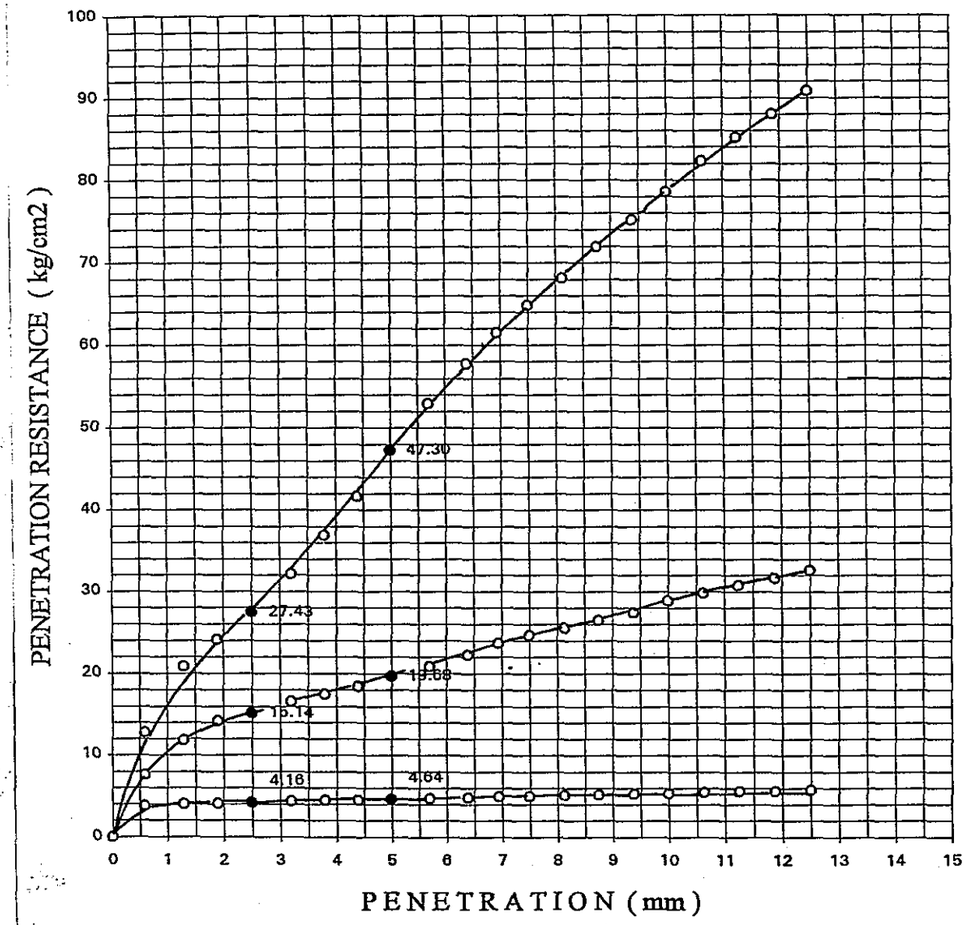
COMPACTION - CBR RELATION



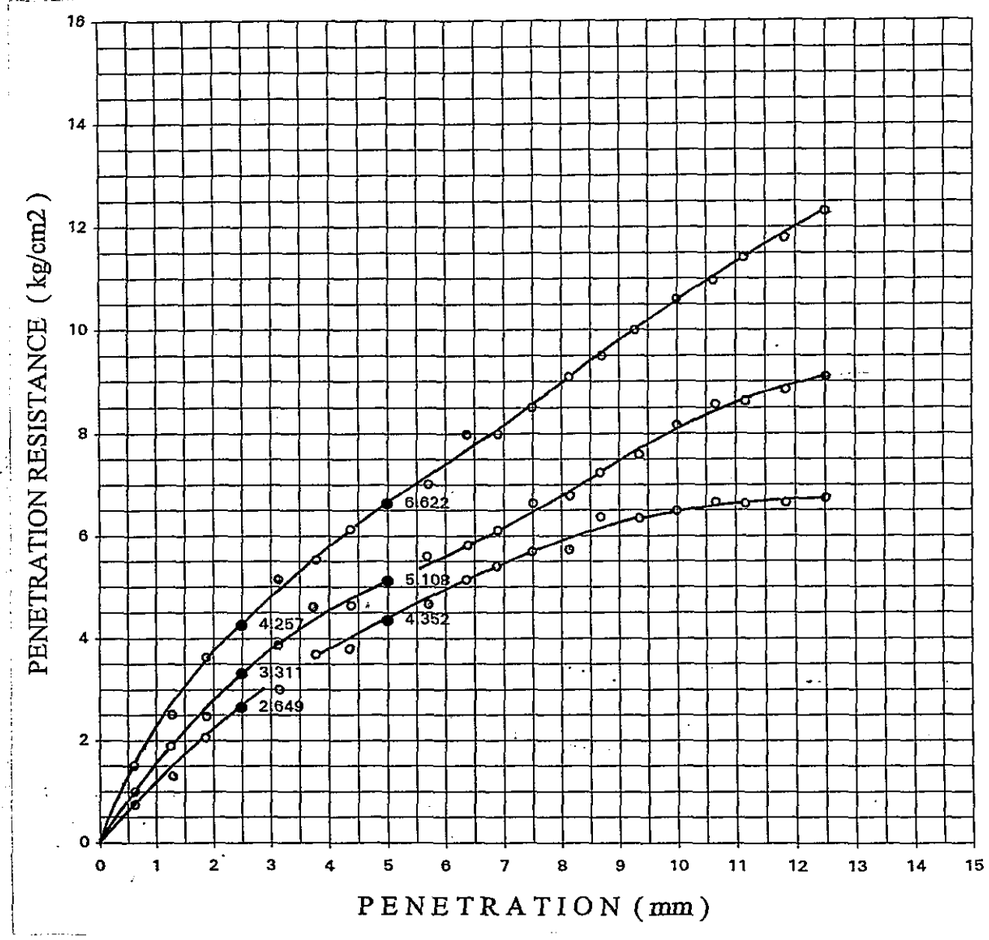
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P - 50

CBR PENETRATION RESISTANCE GRAPH

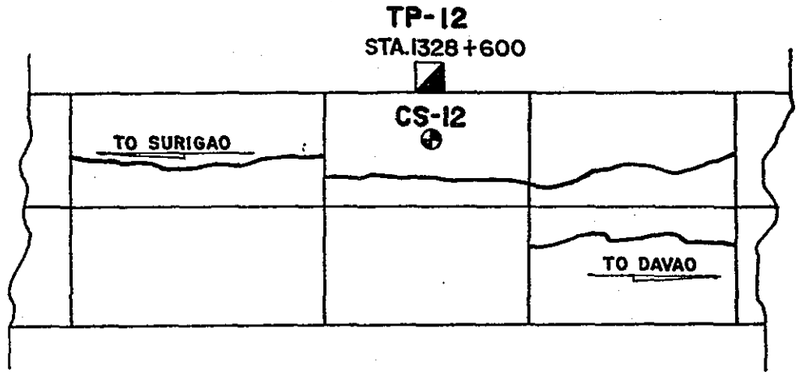
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-11 (Sta. 1316+400)	0.23-0.50 m	September 23, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown GRAVEL & SAND		A-1-b (0)

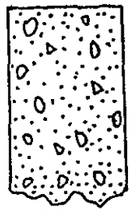


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-11 (Sta. 1316+400)	0.50-1.50 m	September 24, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy-clayey SILT		A-7-5 (2)

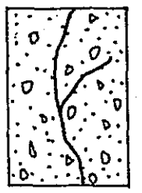


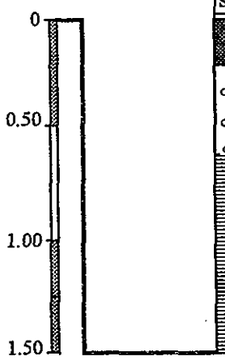
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 51




CS-12

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
23.0	10.0	1.999	1724


MODE OF FAILURE



TP-12

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.230				
	Brown GRAVEL, little amount of fine gravel, traces of silt.	0.37	NP	NP	NP	A-1-a (0)
	Brown gravelly-silty CLAY, traces of sand.	0.90	48	26	22	A-7-5 (12)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		12	
STATION (Km)		1328+600	
DEPTH, (cm)		0.25	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5950.00	5900.00
SAND+JUG (AFTER),	g	2535.00	2185.00
WEIGHT OF SAND USED,	g	3415.00	3715.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1807.00	2107.00
VOLUME OF HOLE,	cu.cm	1348.51	1572.39
WEIGHT OF WET SOIL,	g	3087.00	2389.00
WET DENSITY,	g/cc	2.29	1.52

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	194.00	151.30
WT. OF DRY SOIL+CAN,	g	182.70	116.50
WEIGHT OF CAN,	g	16.66	16.35
MOISTURE LOSS,	g	11.30	34.80
WEIGHT OF DRY SOIL,	g	166.04	100.15
MOISTURE CONTENT,	%	6.81	34.75
DRY DENSITY,	g/cc	2.14	1.13

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.29	1.52
DRY DENSITY,	g/cc	2.14	1.13
MAXIMUM DRY DENSITY,	g/cc	2.12	1.75
OPT. MOISTURE CONTENT,	%	8.75	18.00
PERCENT COMPACTION		101.10	64.43

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P - 52

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-12 (Sta. 1328+600)	0.23-0.60 m	September 27, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

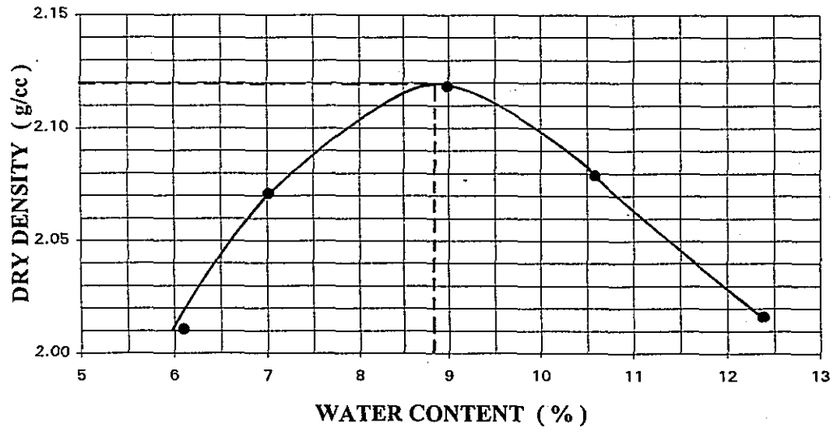
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		G5	33X	322	A9	122	282	307	90	307	90
WT. OF CAN+WET SOIL,	g	133.50	131.00	153.50	155.00	172.70	170.60	192.90	192.30	192.90	192.30
WT. OF CAN+DRY SOIL,	g	124.80	125.60	144.70	145.30	159.00	158.10	175.10	175.60	170.00	175.60
WT. OF WATER,	g	8.70	5.40	8.80	9.70	13.70	12.50	17.80	16.70	22.90	16.70
WT. OF CAN,	g	9.10	10.20	13.60	13.00	12.70	13.20	12.20	12.80	12.20	12.80
WT. OF DRY SOIL,	g	115.70	115.40	131.10	132.30	146.30	144.90	162.90	162.80	157.80	162.80
WATER CONTENT,	%	7.52	4.68	6.71	7.33	9.36	8.63	10.93	10.26	14.51	10.26

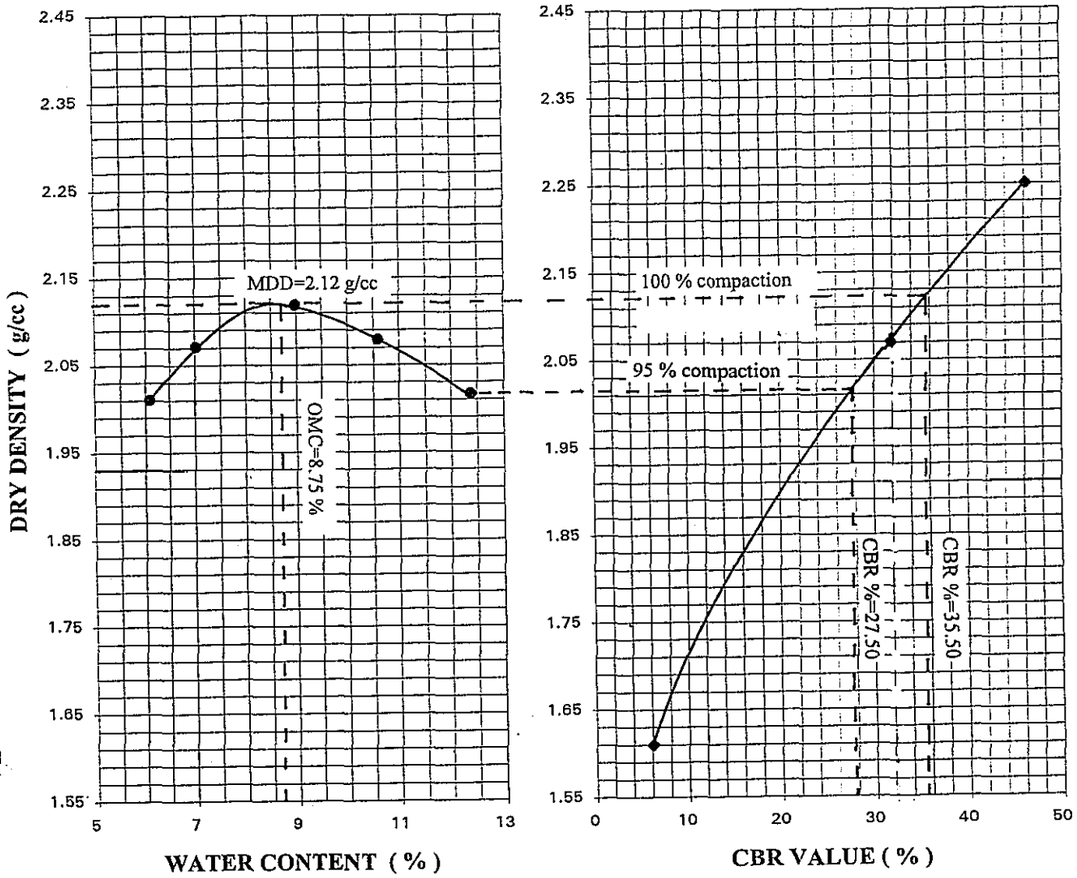
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	6.10	7.02	9.00	10.59	12.39
WT. OF SOIL+MOLD,	g	12070	12245	12440	12420	12350
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4490	4665	4860	4840	4770
WET DENSITY,	g/cc	2.13	2.22	2.31	2.30	2.27
DRY DENSITY,	g/cc	2.01	2.07	2.12	2.08	2.02



MAXIMUM DRY DENSITY = 2.12 g/cc OPTIMUM MOISTURE CONTENT = 8.75 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 53

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-12 (Sta. 1328+600)	0.60-1.50 m	September 25, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown gravelly-silty CLAY		A-7-5 (12)

COMPACTION TEST

MOLD DIMENSIONS:

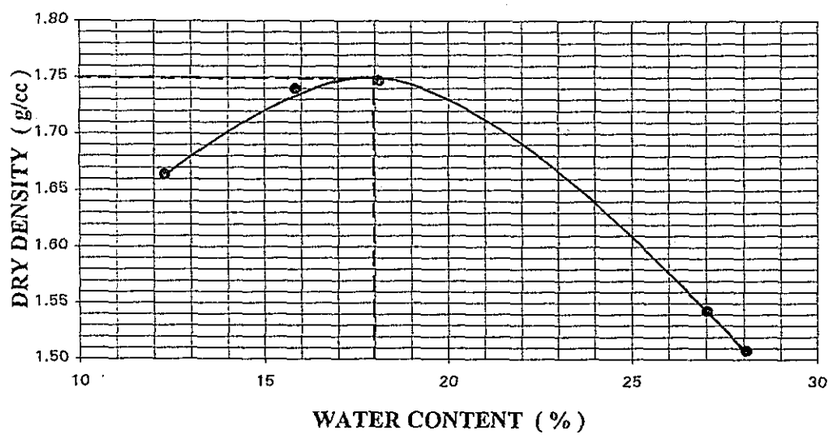
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		136X	252	G5	33X	322	183	122	282	307	90
WT. OF CAN+WET SOIL,	g	172.60	175.50	176.00	177.30	181.30	152.90	188.30	189.00	191.20	192.10
WT. OF CAN+DRY SOIL,	g	155.30	158.30	155.00	154.80	152.30	142.30	154.90	152.60	148.30	160.00
WT. OF WATER,	g	17.30	17.20	21.00	22.50	29.00	18.30	33.40	36.40	42.90	32.10
WT. OF CAN,	g	16.30	17.00	19.50	16.00	21.70	12.00	24.90	24.30	17.10	23.10
WT. OF DRY SOIL,	g	139.00	141.30	135.50	138.80	130.60	130.30	130.00	128.30	131.20	136.90
WATER CONTENT,	%	12.45	12.17	15.50	16.21	22.21	14.04	25.69	28.37	32.70	23.45

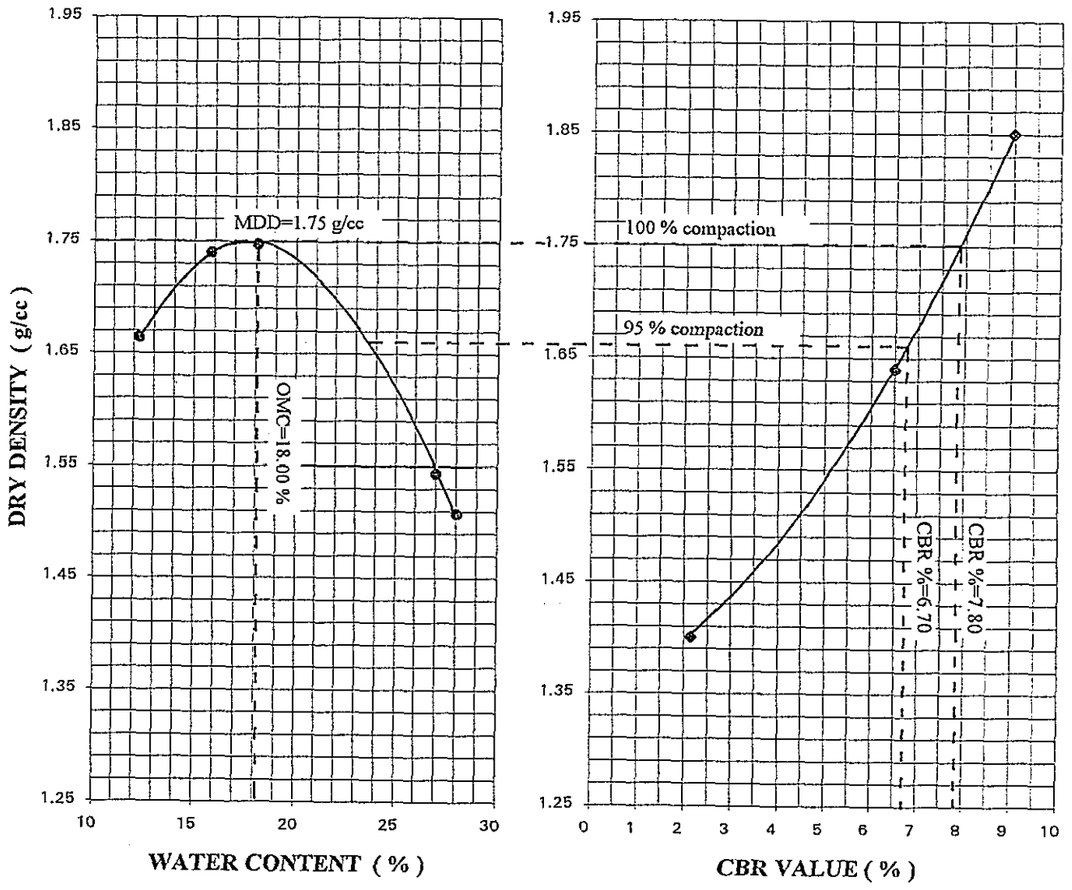
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	12.31	15.85	18.12	27.03	28.07
WT. OF SOIL+MOLD,	g	10460	10780	10885	10660	10596
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4065	4385	4490	4265	4201
WET DENSITY,	g/cc	1.87	2.02	2.06	1.96	1.93
DRY DENSITY,	g/cc	1.66	1.74	1.75	1.54	1.51



MAXIMUM DRY DENSITY = 1.75 g/cc OPTIMUM MOISTURE CONTENT = 18.00 %

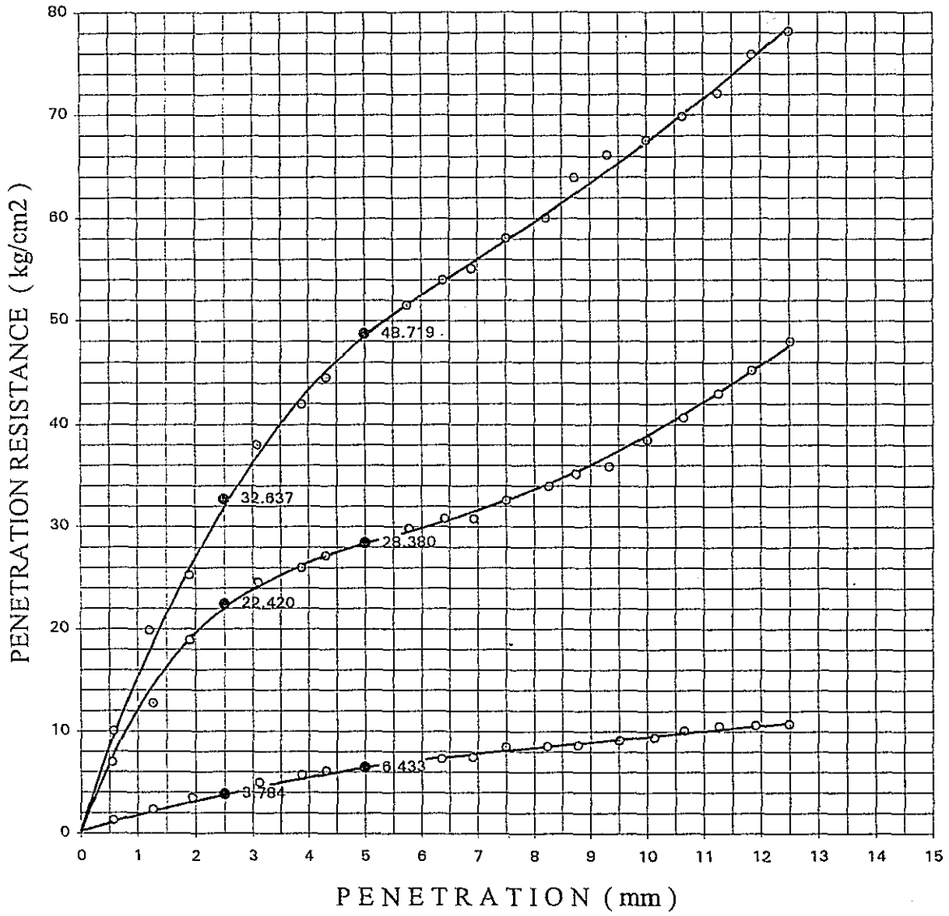
COMPACTION - CBR RELATION



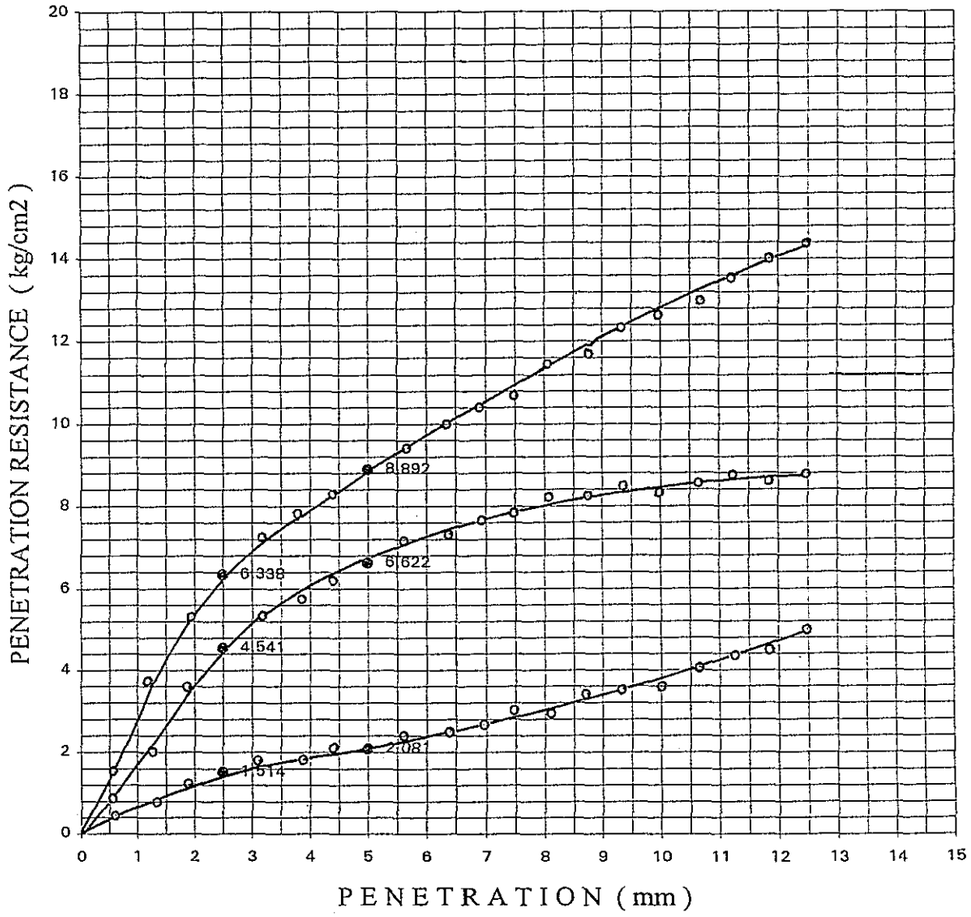
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-54

CBR PENETRATION RESISTANCE GRAPH

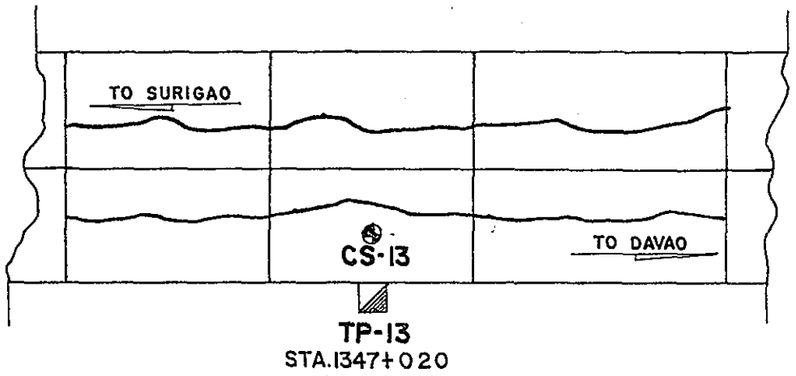
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-12 (Sta. 1328+600)	0.23-0.60 m	September 27, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown GRAVEL		A-1-a (0)



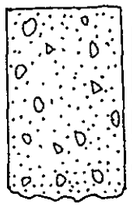
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-12 (Sta. 1328+600)	0.60-1.50 m	September 25, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown gravelly-silty CLAY		A-7-5 (12)



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 55

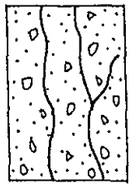


TP-13
STA.1347+020

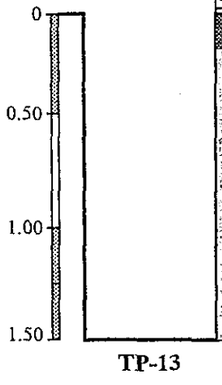


CS-13

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
19.0	10.0	1.667	3199



MODE OF FAILURE



TP-13

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.190				
	Brown sandy GRAVEL, traces of silt.	1.31	NP	NP	NP	A-1-a (0)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.	13
STATION (Km)	1347+020
DEPTH, (cm)	0.20

UNIT WEIGHT OF SAND,	g/cc	1.34
SAND+JUG (BEFORE),	g	5850.00
SAND+JUG (AFTER),	g	2130.00
WEIGHT OF SAND USED,	g	3720.00
WEIGHT OF SAND IN CONE,	g	1608.00
WEIGHT OF SAND IN HOLE,	g	2112.00
VOLUME OF HOLE,	cu.cm	1576.12
WEIGHT OF WET SOIL,	g	3845.00
WET DENSITY,	g/cc	2.44

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	172.50
WT. OF DRY SOIL+CAN,	g	159.00
WEIGHT OF CAN,	g	17.08
MOISTURE LOSS,	g	13.50
WEIGHT OF DRY SOIL,	g	141.92
MOISTURE CONTENT,	%	9.51
DRY DENSITY,	g/cc	2.23

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.44
DRY DENSITY,	g/cc	2.23
MAXIMUM DRY DENSITY,	g/cc	2.13
OPT. MOISTURE CONTENT,	%	9.00
PERCENT COMPACTION		104.58

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P-56

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-13 (Sta. 1347+020)	0.19-1.50 m	September 25, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL.		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

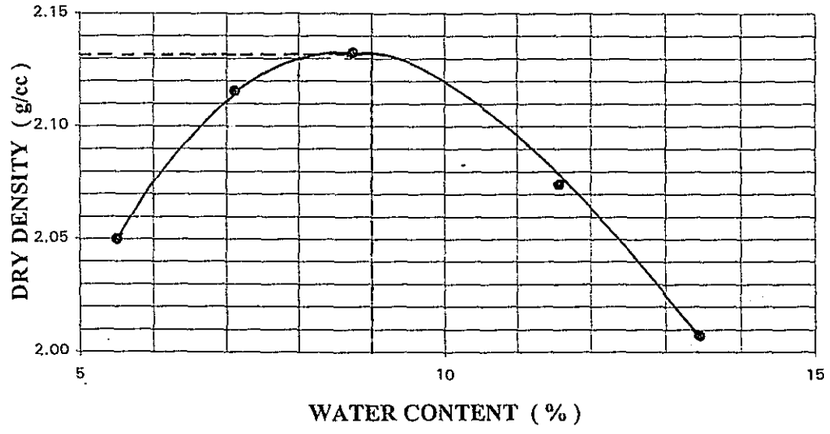
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		EO1	378	S4	13.1	BUTCH	85	PP6	84	344	B8
WT. OF CAN+WET SOIL,	g	131.10	133.60	135.80	137.50	138.70	139.60	146.10	147.00	148.60	149.80
WT. OF CAN+DRY SOIL,	g	125.50	127.50	128.50	129.10	129.60	130.00	131.30	136.50	134.10	133.30
WT. OF WATER,	g	5.60	6.10	7.30	8.40	9.10	9.60	14.80	10.50	14.50	16.50
WT. OF CAN,	g	16.00	24.20	18.50	18.70	23.00	22.80	24.10	24.00	23.70	13.60
WT. OF DRY SOIL,	g	109.50	103.30	110.00	110.40	106.60	107.20	107.20	112.50	110.40	119.70
WATER CONTENT,	%	5.11	5.91	6.64	7.61	8.54	8.96	13.81	9.33	13.13	13.78

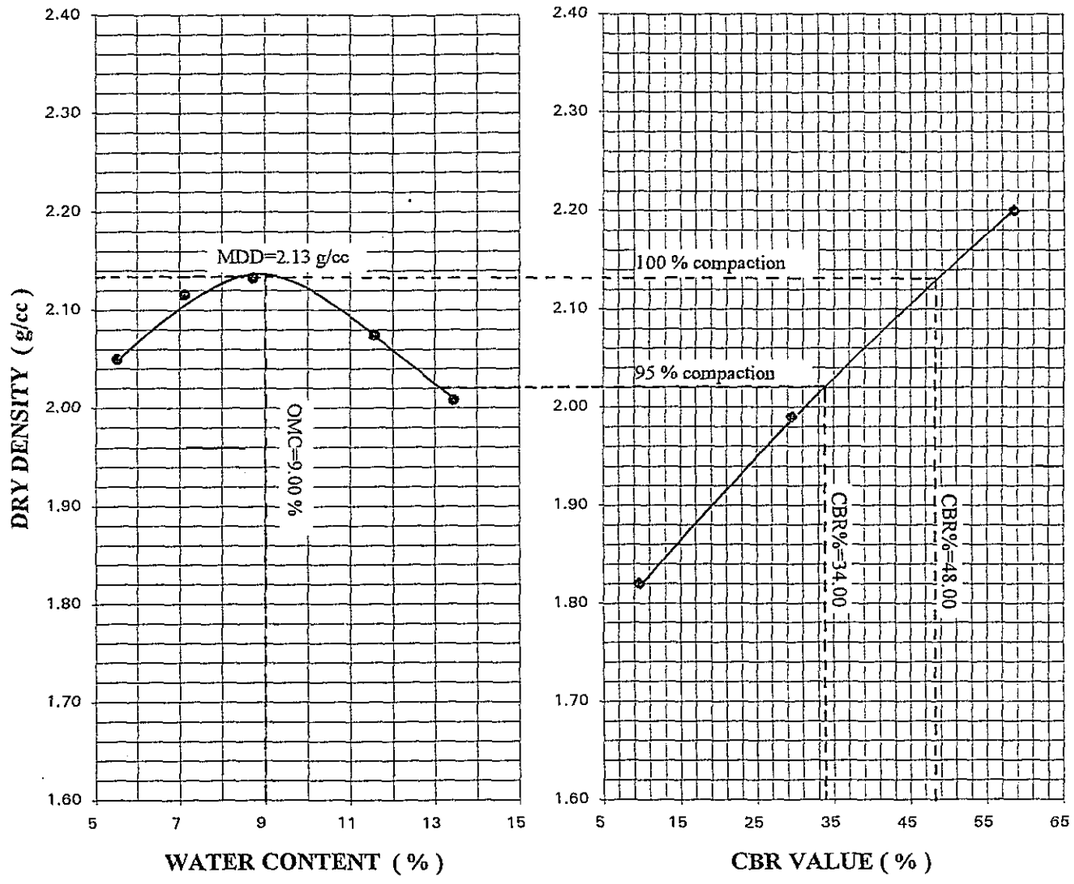
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	5.51	7.12	8.75	11.57	13.46
WT. OF SOIL+MOLD,	g	11100	11325	11440	11430	11350
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4705	4930	5045	5035	4955
WET DENSITY,	g/cc	2.16	2.27	2.32	2.31	2.28
DRY DENSITY,	g/cc	2.05	2.12	2.13	2.07	2.01



MAXIMUM DRY DENSITY = 2.13 g/cc OPTIMUM MOISTURE CONTENT = 9.00 %

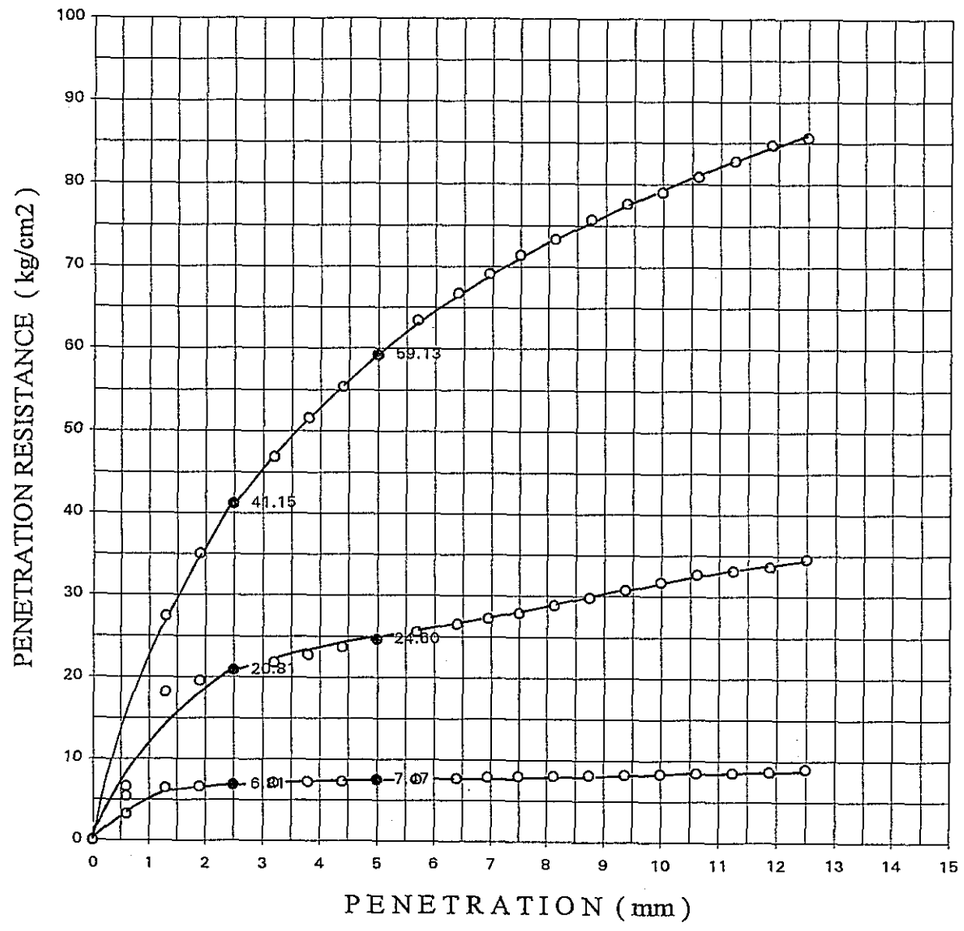
COMPACTION - CBR RELATION



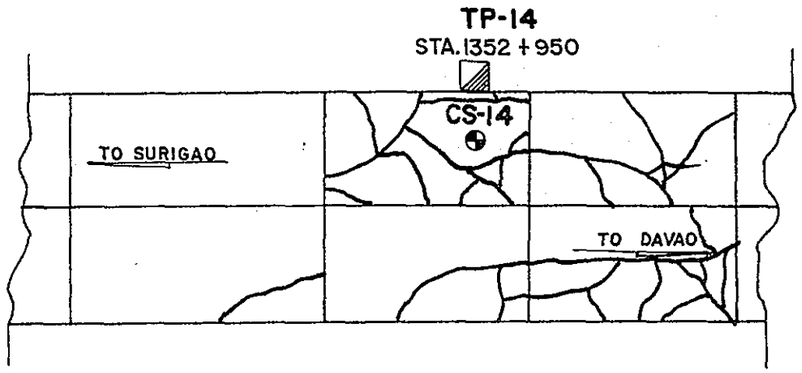
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 57

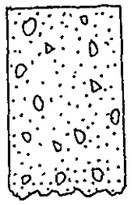
CBR PENETRATION RESISTANCE GRAPH

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-13 (Sta. 1347+020)	0.19-1.50 m	September 25, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL.		A-1-a (0)

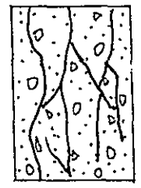


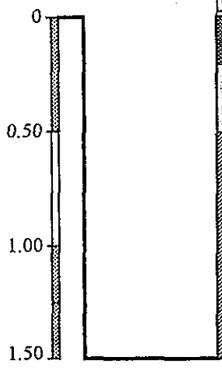
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 58




CS-14

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
22.0	10.0	2.09	3859


MODE OF FAILURE



TP-14

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.220				
	Brown sandy GRAVEL, traces of silt.	0.28	NP	NP	NP	A-1-a (0)
	Brown sandy CLAY, little amt. of gravel and sand.	1.00	45	20	25	A-7-5 (9)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		14	
STATION (Km)		1352+950	
DEPTH, (cm)		0.25	0.50
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	6010.00	6000.00
SAND+JUG (AFTER),	g	2380.00	2520.00
WEIGHT OF SAND USED,	g	3630.00	3480.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2022.00	1872.00
VOLUME OF HOLE,	cu.cm	1508.96	1397.01
WEIGHT OF WET SOIL,	g	3715.00	2640.00
WET DENSITY,	g/cc	2.46	1.89

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1505.50	241.50
WT. OF DRY SOIL+CAN,	g	1412.00	190.00
WEIGHT OF CAN,	g	107.40	17.39
MOISTURE LOSS,	g	93.50	51.50
WEIGHT OF DRY SOIL,	g	1304.60	172.61
MOISTURE CONTENT,	%	7.17	29.84
DRY DENSITY,	g/cc	2.30	1.46

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.46	1.89
DRY DENSITY,	g/cc	2.30	1.46
MAXIMUM DRY DENSITY,	g/cc	2.20	1.76
OPT. MOISTURE CONTENT,	%	7.00	15.75
PERCENT COMPACTION		104.42	82.70

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 59

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-14 (Sta. 1352+950)	0.22-0.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

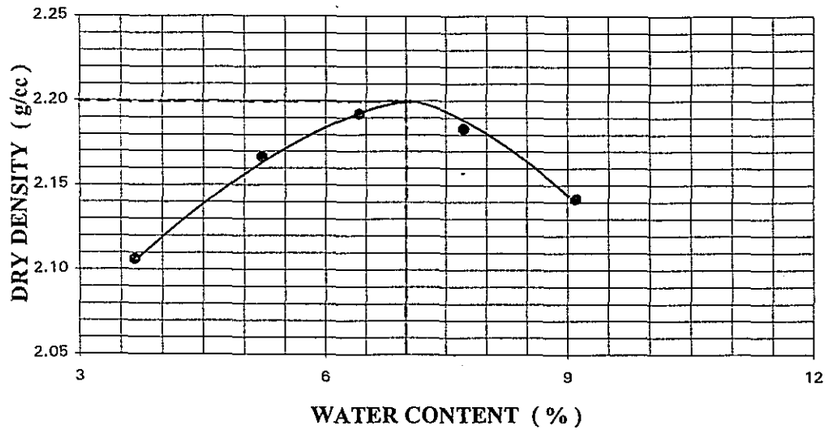
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		122	390	E15	B8	1018	R3	383	103	84	JR
WT. OF CAN+WET SOIL,	g	115.00	118.50	115.10	118.20	124.40	120.70	134.30	127.20	148.30	157.20
WT. OF CAN+DRY SOIL,	g	111.80	115.20	109.50	113.70	116.20	116.90	126.30	119.50	137.30	146.60
WT. OF WATER,	g	3.20	3.30	5.60	4.50	8.20	3.80	8.00	7.70	11.00	10.60
WT. OF CAN,	g	25.00	24.70	15.50	13.60	21.30	26.40	17.50	24.40	23.50	22.70
WT. OF DRY SOIL,	g	86.80	90.50	94.00	100.10	94.90	90.50	108.80	95.10	113.80	123.90
WATER CONTENT,	%	3.69	3.65	5.96	4.50	8.64	4.20	7.35	8.10	9.67	8.56

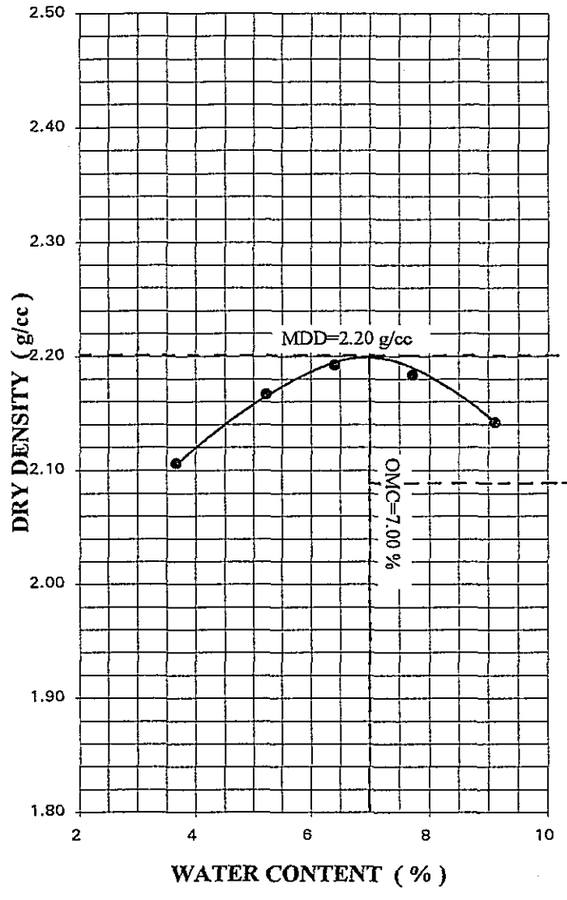
DENSITY DETERMINATION

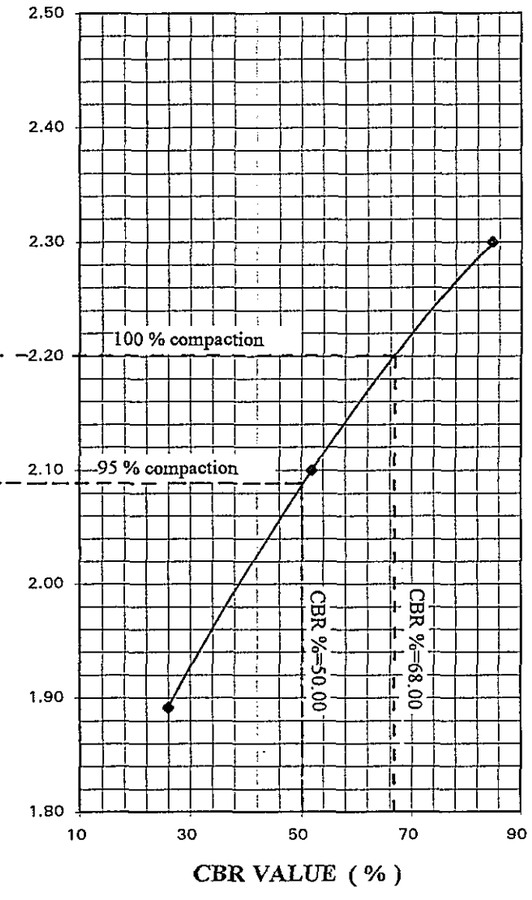
AVE. WATER CONTENT,	%	3.67	5.23	6.42	7.72	9.11
WT. OF SOIL+MOLD,	g	11145	11355	11470	11512	11479
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4750	4960	5075	5117	5084
WET DENSITY,	g/cc	2.18	2.28	2.33	2.35	2.34
DRY DENSITY,	g/cc	2.11	2.17	2.19	2.18	2.14



MAXIMUM DRY DENSITY = 2.20 g/cc OPTIMUM MOISTURE CONTENT = 7.00 %

COMPACTION - CBR RELATION





JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 60

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-14 (Sta. 1352+950)	0.50-1.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy CLAY		A-7-5 (9)

COMPACTION TEST

MOLD DIMENSIONS:

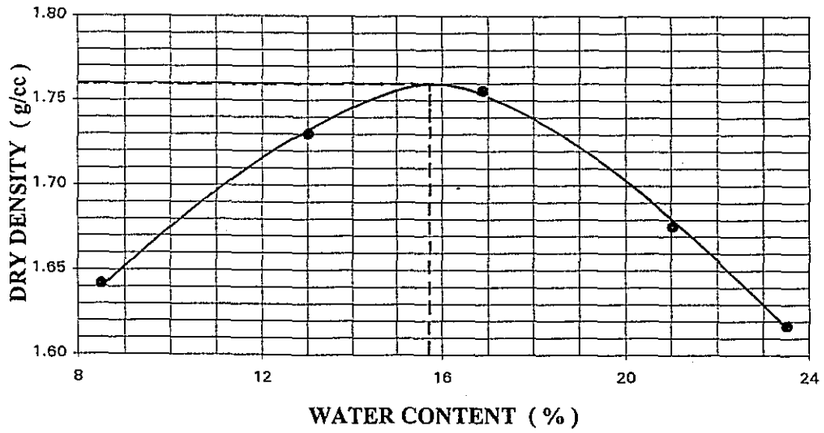
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

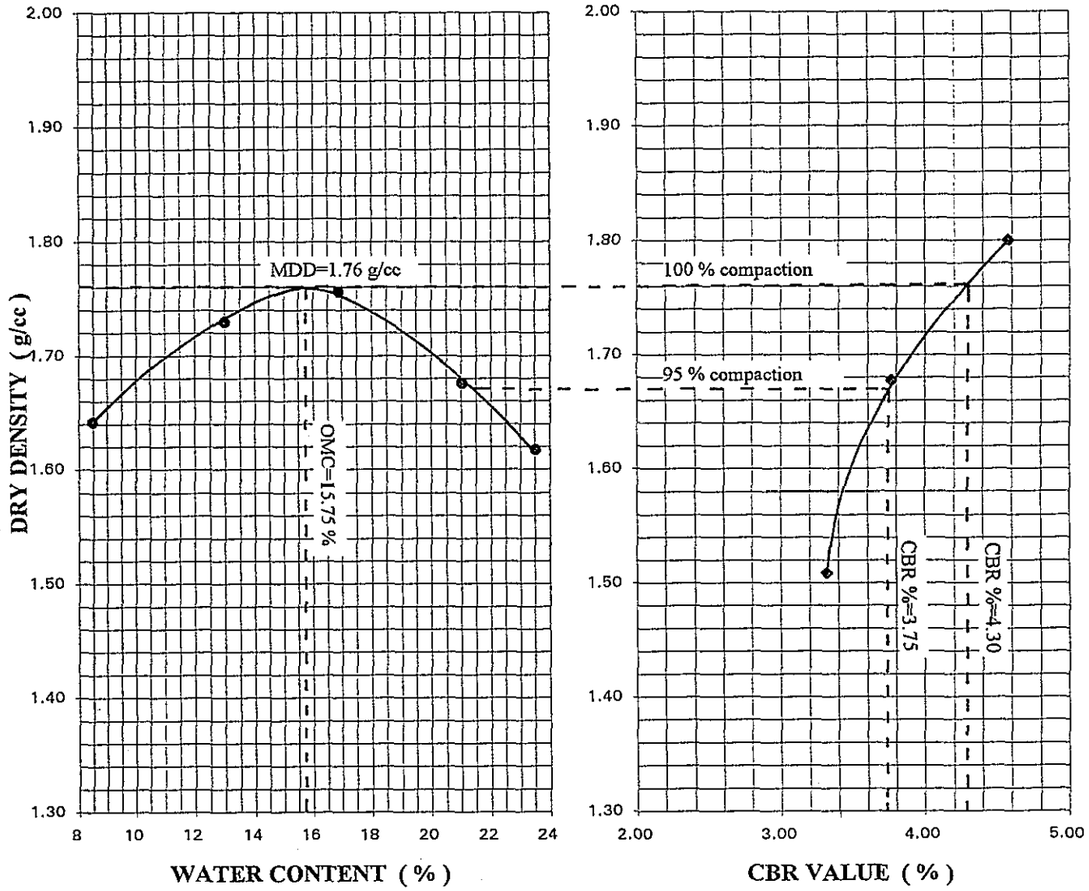
WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		169	157	186	175	160	134	163	201	192	136
WT. OF CAN+WET SOIL,	g	112.00	112.10	132.70	132.70	153.80	154.40	174.20	173.80	192.20	193.10
WT. OF CAN+DRY SOIL,	g	103.90	104.40	118.50	119.40	133.90	133.50	147.80	146.90	158.00	157.00
WT. OF WATER,	g	8.10	7.70	14.20	13.30	19.90	20.90	26.40	26.90	32.20	36.10
WT. OF CAN,	g	11.40	11.30	13.30	13.30	12.80	13.10	28.70	11.90	12.60	12.10
WT. OF DRY SOIL,	g	92.50	93.10	105.20	106.10	121.10	120.40	119.10	135.00	145.40	144.90
WATER CONTENT,	%	8.76	8.27	13.50	12.54	16.43	17.36	22.17	19.93	22.15	24.91

DENSITY DETERMINATION

AVE. WATER CONTENT,	%	8.51	13.02	16.90	21.05	23.53
WT. OF SOIL+MOLD,	g	11330	11695	11900	11850	11785
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3750	4115	4320	4270	4205
WET DENSITY,	g/cc	1.78	1.95	2.05	2.03	2.00
DRY DENSITY,	g/cc	1.64	1.73	1.76	1.68	1.62



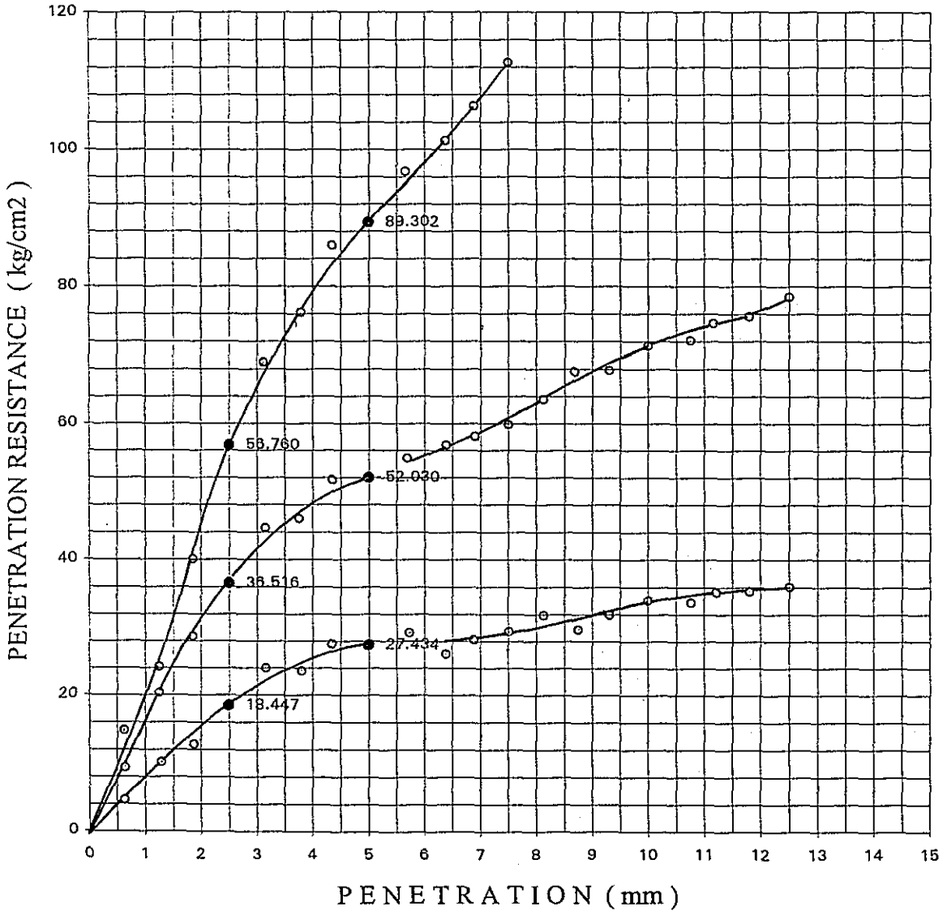


MAXIMUM DRY DENSITY = 1.76 g/cc OPTIMUM MOISTURE CONTENT = 15.75 %

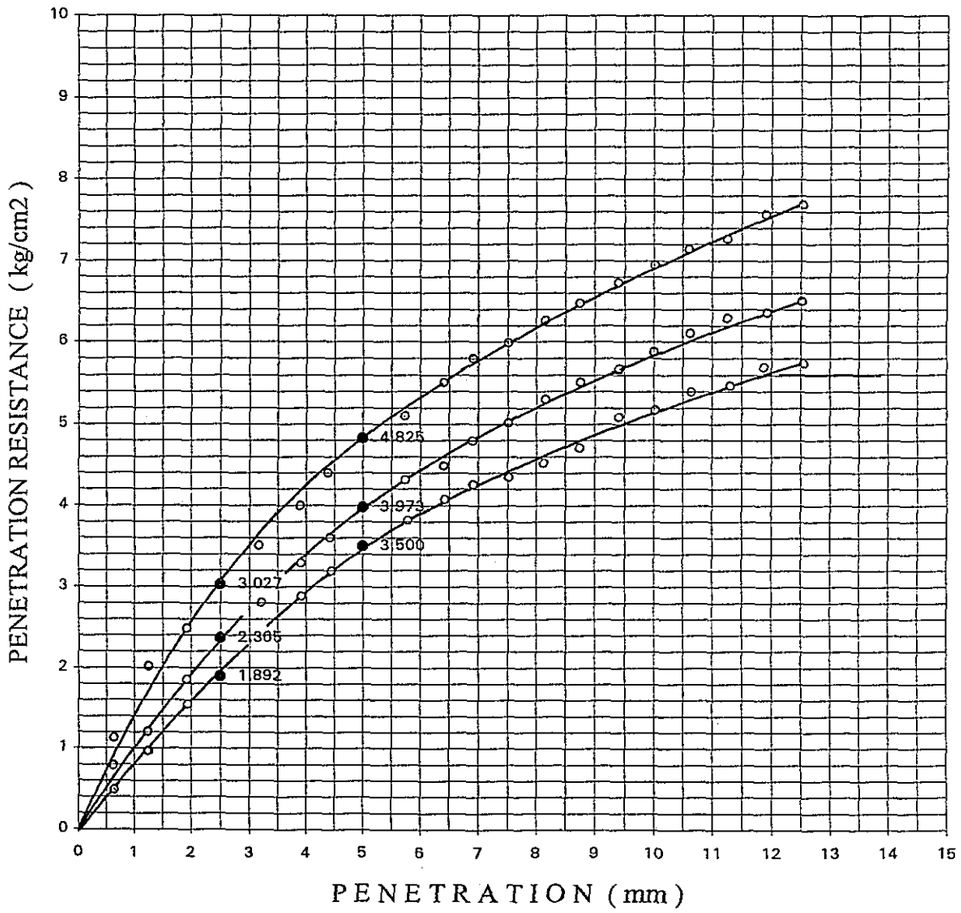
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS / SHEET NO.: P – 61

CBR PENETRATION RESISTANCE GRAPH

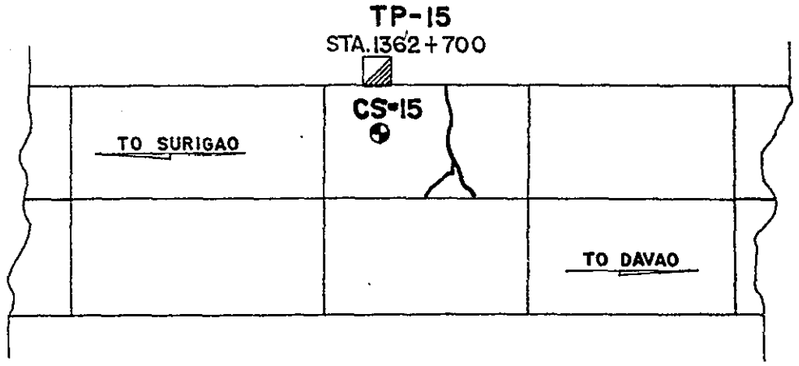
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-14 (Sta. 1352+950)	0.22-0.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

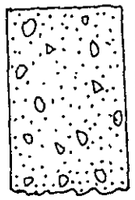


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-14 (Sta. 1352+950)	0.50-1.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy CLAY		A-7-5 (9)

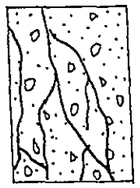


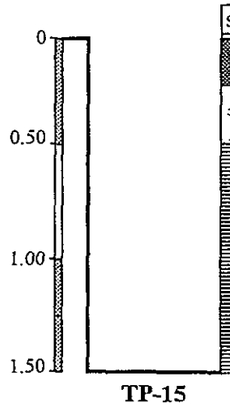
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-62




CS-15

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
23.0	10.0	2.07	3612


MODE OF FAILURE



TP-15

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.230				
	Brown sandy GRAVEL, little amount of silt.	0.27	NP	NP	NP	A-1-a (0)
	Brown silty CLAY,little amt. of sand, traces of fine gravel.	1.00	38	19	19	A-6 (12)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		15	
STATION (Km)		1362+500	
DEPTH, (cm)		0.25	0.50
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5960.00	5940.00
SAND+JUG (AFTER),	g	2295.00	2430.00
WEIGHT OF SAND USED,	g	3665.00	3510.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2057.00	1902.00
VOLUME OF HOLE,	cu.cm	1535.07	1419.40
WEIGHT OF WET SOIL,	g	3386.00	2650.00
WET DENSITY,	g/cc	2.21	1.87

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1509.50	327.50
WT. OF DRY SOIL+CAN,	g	1437.00	285.00
WEIGHT OF CAN,	g	90.50	23.60
MOISTURE LOSS,	g	72.50	42.50
WEIGHT OF DRY SOIL,	g	1346.50	261.40
MOISTURE CONTENT,	%	5.38	16.26
DRY DENSITY,	g/cc	2.09	1.61

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.21	1.87
DRY DENSITY,	g/cc	2.09	1.61
MAXIMUM DRY DENSITY,	g/cc	2.17	1.68
OPT. MOISTURE CONTENT,	%	7.50	20.00
PERCENT COMPACTION		96.45	95.59

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 63

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-15 (Sta. 1362+700)	0.23-0.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

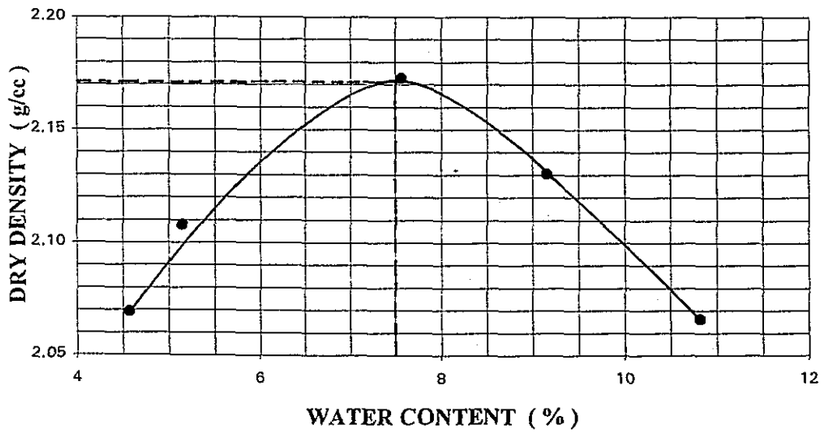
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		1077	1071	104	141	151	1085	ALF	152	164	150
WT. OF CAN+WET SOIL,	g	112.90	113.10	134.60	135.40	152.90	153.70	174.70	173.00	193.00	193.20
WT. OF CAN+DRY SOIL,	g	108.50	108.50	128.70	129.30	142.50	144.20	161.90	158.50	174.50	176.50
WT. OF WATER,	g	4.40	4.60	5.90	6.10	10.40	9.50	12.80	14.50	18.50	16.70
WT. OF CAN,	g	10.30	10.10	12.80	12.20	12.10	11.60	10.40	11.50	12.90	12.80
WT. OF DRY SOIL,	g	98.20	98.40	115.90	117.10	130.40	132.60	151.50	147.00	161.60	163.70
WATER CONTENT,	%	4.48	4.67	5.09	5.21	7.98	7.16	8.45	9.86	11.45	10.20

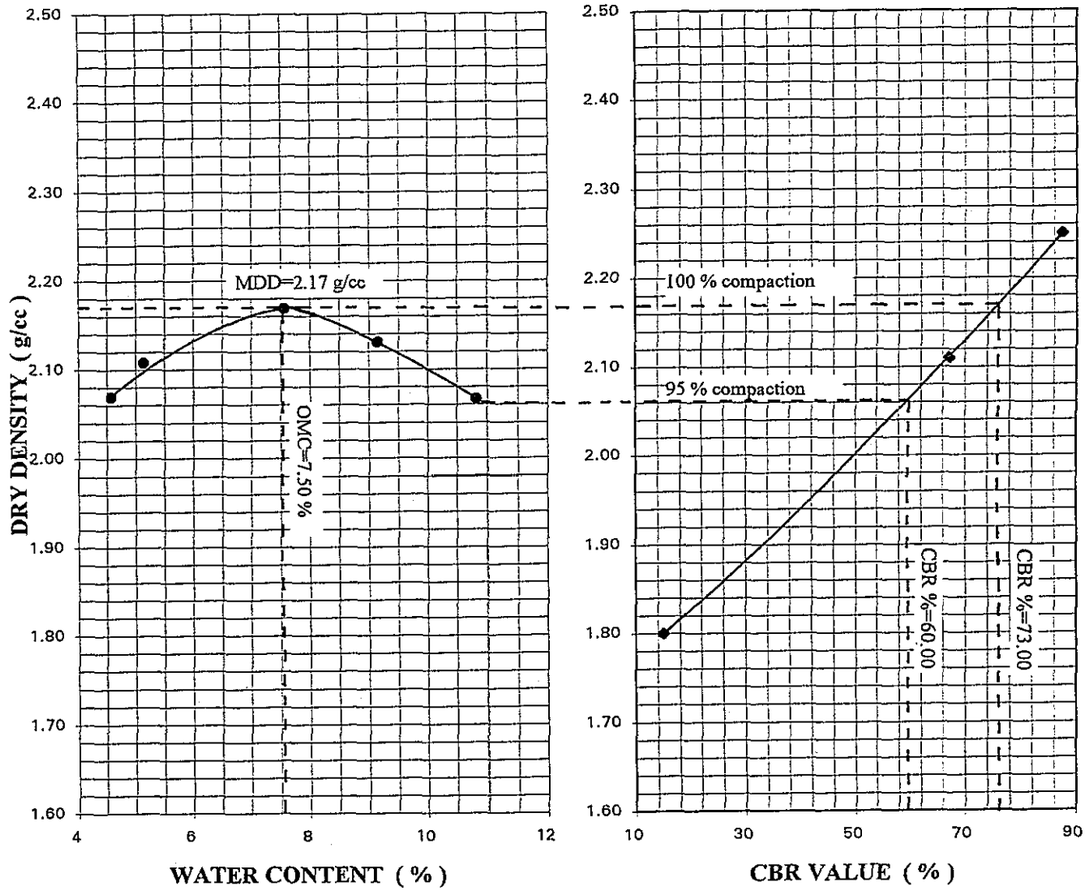
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	4.58	5.15	7.57	9.16	10.82
WT. OF SOIL+MOLD,	g	12135	12245	12500	12475	12400
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4555	4665	4920	4895	4820
WET DENSITY,	g/cc	2.16	2.22	2.34	2.33	2.29
DRY DENSITY,	g/cc	2.07	2.11	2.17	2.13	2.07



MAXIMUM DRY DENSITY = 2.17 g/cc OPTIMUM MOISTURE CONTENT = 7.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P –64

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-15 (Sta. 1362+700)	0.50-1.50 m	October 05, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty CLAY		A-6 (12)

COMPACTION TEST

MOLD DIMENSIONS:

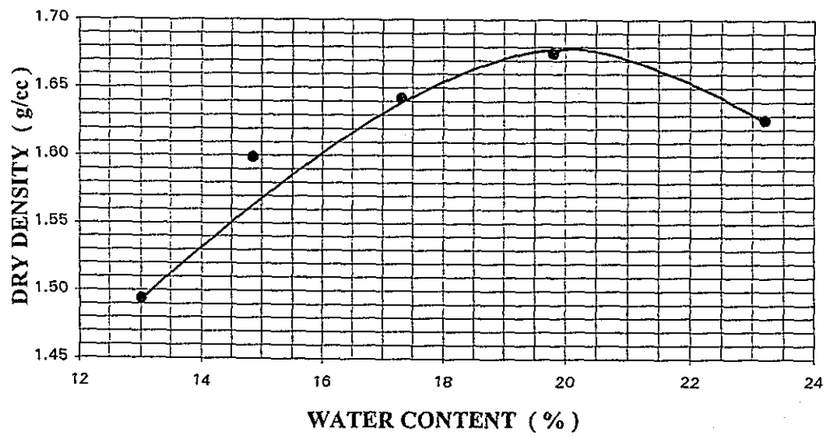
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		PHEN	G03	C5	20X	5X	SM1	253	280	G02	E46
WT. OF CAN+WET SOIL,	g	105.20	115.10	106.20	112.70	118.60	117.60	124.50	121.70	128.70	130.00
WT. OF CAN+DRY SOIL,	g	96.90	102.90	94.50	100.50	103.50	102.50	106.50	104.50	107.50	108.50
WT. OF WATER,	g	8.30	12.20	11.70	12.20	15.10	15.10	18.00	17.20	21.20	21.50
WT. OF CAN,	g	22.04	21.30	18.50	15.40	15.70	15.90	16.40	16.90	16.40	15.60
WT. OF DRY SOIL,	g	74.86	81.60	76.00	85.10	87.80	86.60	90.10	87.60	91.10	92.90
WATER CONTENT,	%	11.09	14.95	15.39	14.34	17.20	17.44	19.98	19.63	23.27	23.14

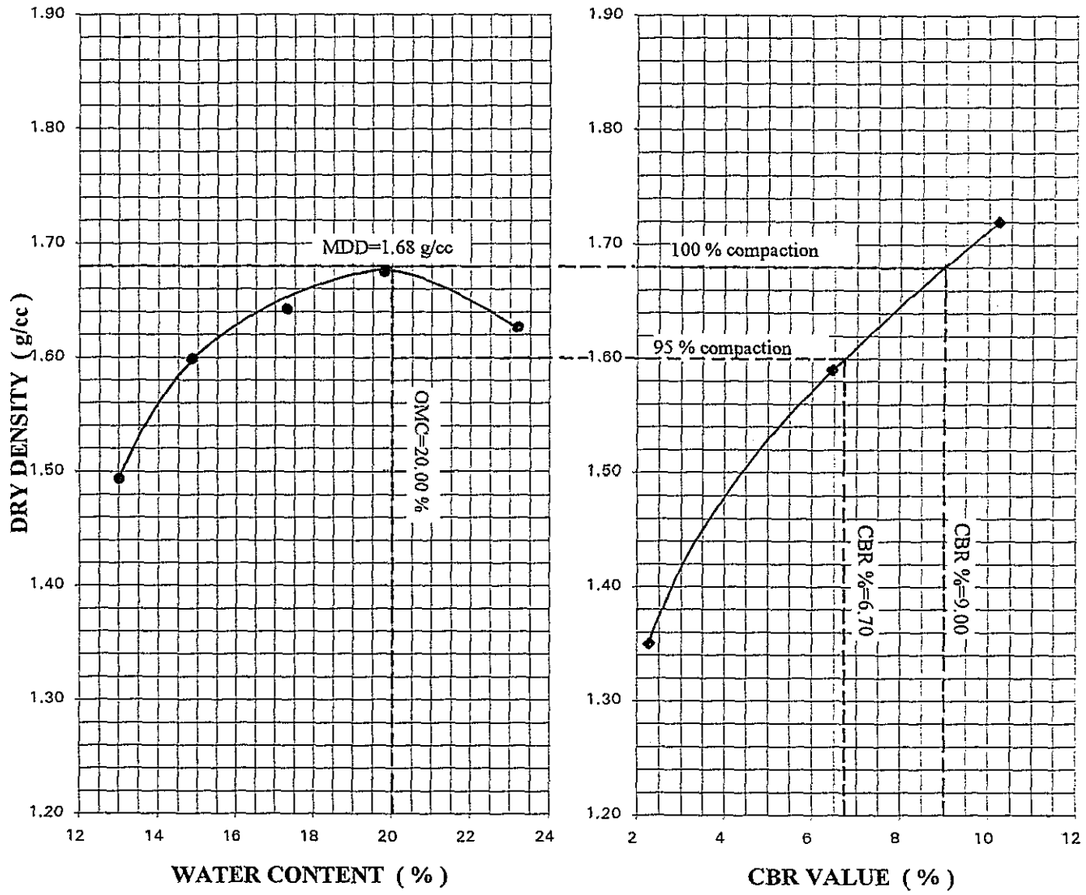
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	13.02	14.87	17.32	19.81	23.21
WT. OF SOIL+MOLD,	g	11253	11575	11771	11945	11940
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3673	3995	4191	4365	4360
WET DENSITY,	g/cc	1.69	1.84	1.93	2.01	2.00
DRY DENSITY,	g/cc	1.49	1.60	1.64	1.67	1.63



MAXIMUM DRY DENSITY = 1.68 g/cc OPTIMUM MOISTURE CONTENT = 20.00 %

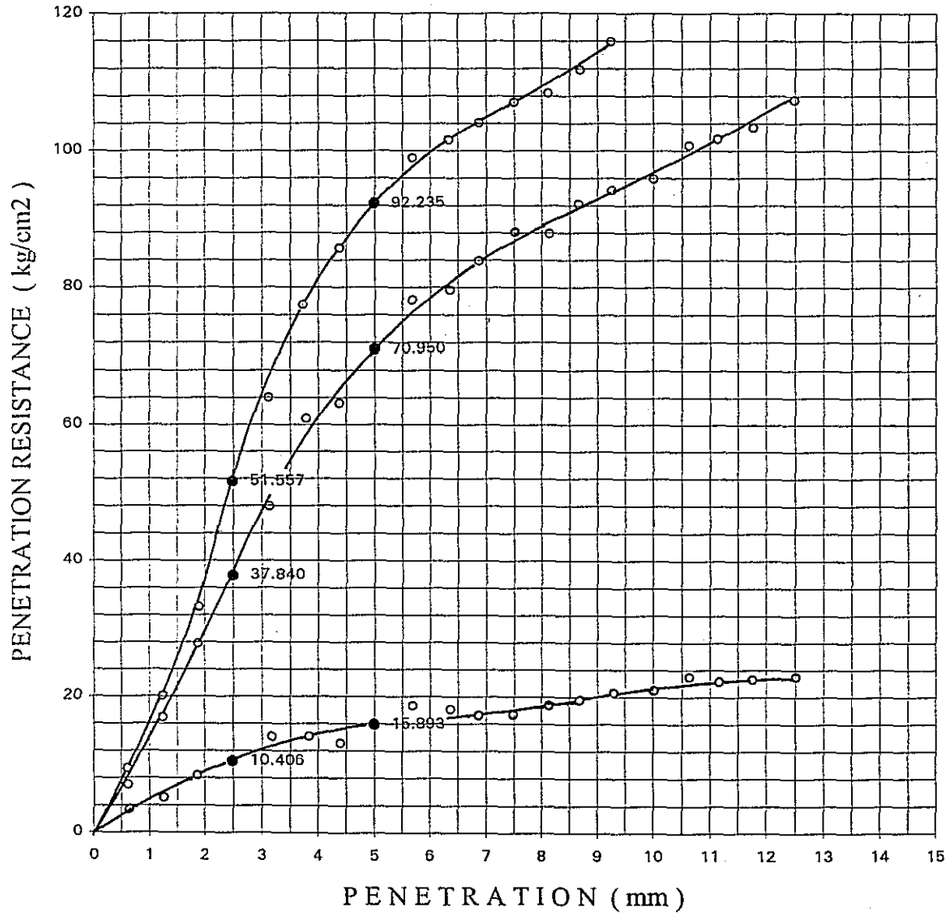
COMPACTION - CBR RELATION



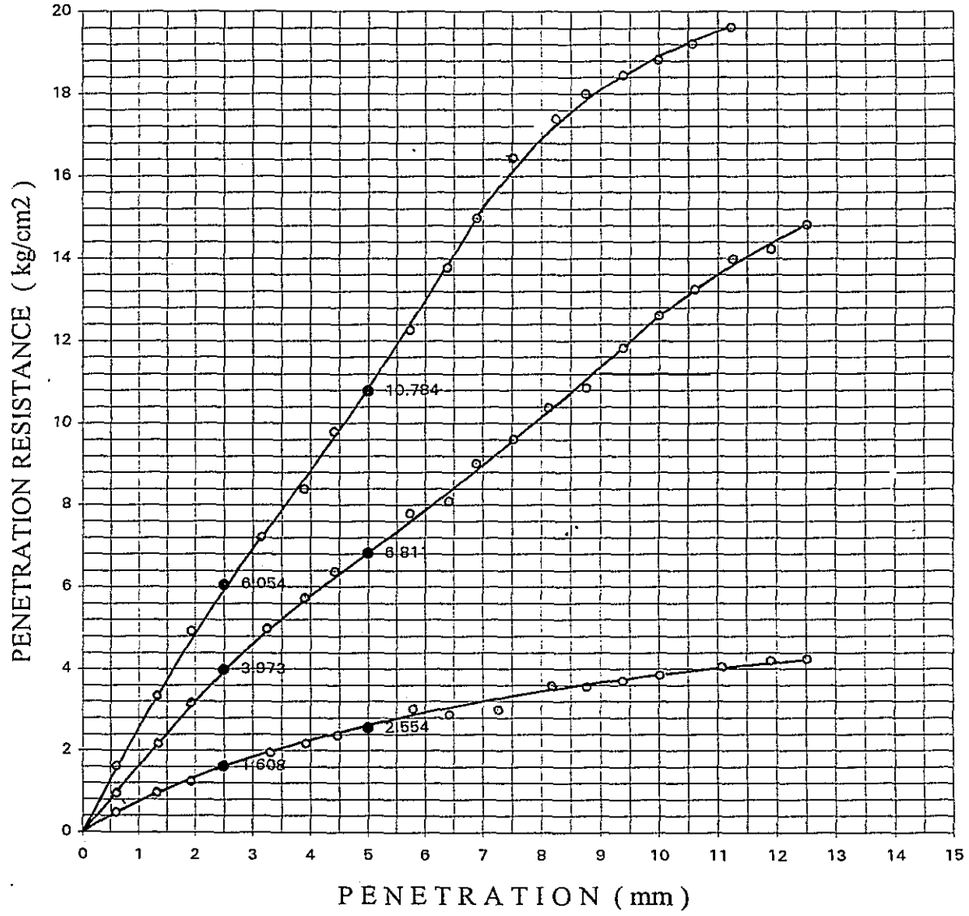
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 65

CBR PENETRATION RESISTANCE GRAPH

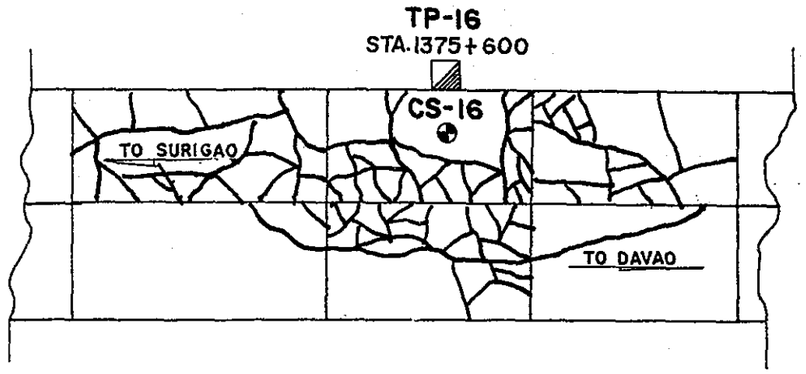
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-15 (Sta. 1362+700)	0.23-0.50 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

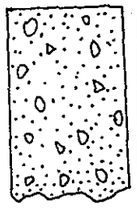


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-15 (Sta. 1362+700)	0.50-1.50 m	October 05, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty CLAY		A-6 (12)

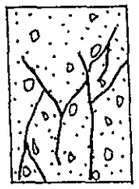


JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 66

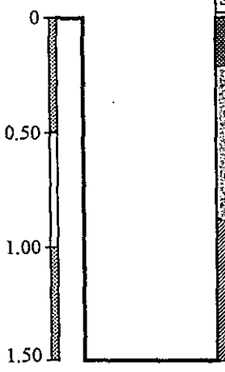




FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
23.0	10.0	2.13	2545



MODE OF FAILURE



TP-16

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.230				
	Brown sandy GRAVEL, traces of silt.	0.67	NP	NP	NP	A-1-a (0)
	Gray sandy CLAY, little amount of gravel.	0.60	39	21	18	A-6 (8)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		16	
STATION (Km)		1375+600	
DEPTH, (cm)		0.25	0.90
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5940.00	5935.00
SAND+JUG (AFTER),	g	2395.00	2695.00
WEIGHT OF SAND USED,	g	3545.00	3240.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1937.00	1632.00
VOLUME OF HOLE,	cu.cm	1445.52	1217.91
WEIGHT OF WET SOIL,	g	3045.00	2493.00
WET DENSITY,	g/cc	2.11	2.05

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1123.00	292.00
WT. OF DRY SOIL+CAN,	g	1051.80	251.50
WEIGHT OF CAN,	g	62.50	27.15
MOISTURE LOSS,	g	71.20	40.50
WEIGHT OF DRY SOIL,	g	989.30	224.35
MOISTURE CONTENT,	%	7.20	18.05
DRY DENSITY,	g/cc	1.97	1.73

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.11	2.05
DRY DENSITY,	g/cc	1.97	1.73
MAXIMUM DRY DENSITY,	g/cc	2.09	2.03
OPT. MOISTURE CONTENT,	%	8.50	10.75
PERCENT COMPACTION		94.02	85.42

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P - 67

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-16 (Sta. 1375+600)	0.23-0.90 m	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

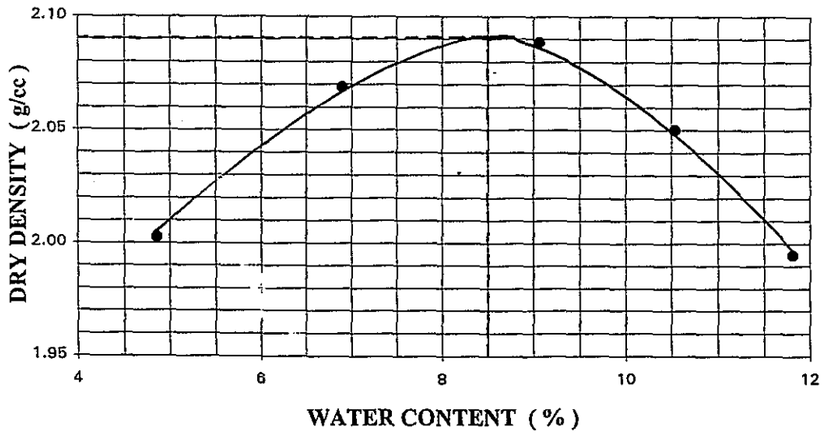
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		207	139	156	153	158	208	159	205	1070	199
WT. OF CAN+WET SOIL,	g	114.80	115.40	134.00	134.20	153.60	154.40	176.00	176.00	196.10	195.70
WT. OF CAN+DRY SOIL,	g	110.50	110.20	126.50	126.00	142.50	142.00	160.70	160.00	177.00	175.80
WT. OF WATER,	g	4.30	5.20	7.50	8.20	11.10	12.40	15.30	16.00	19.10	19.90
WT. OF CAN,	g	12.90	12.60	12.60	12.40	12.80	12.50	11.90	11.90	11.30	11.50
WT. OF DRY SOIL,	g	97.60	97.60	113.90	113.60	129.70	129.50	148.80	148.10	165.70	164.30
WATER CONTENT,	%	4.41	5.33	6.58	7.22	8.56	9.58	10.28	10.80	11.53	12.11

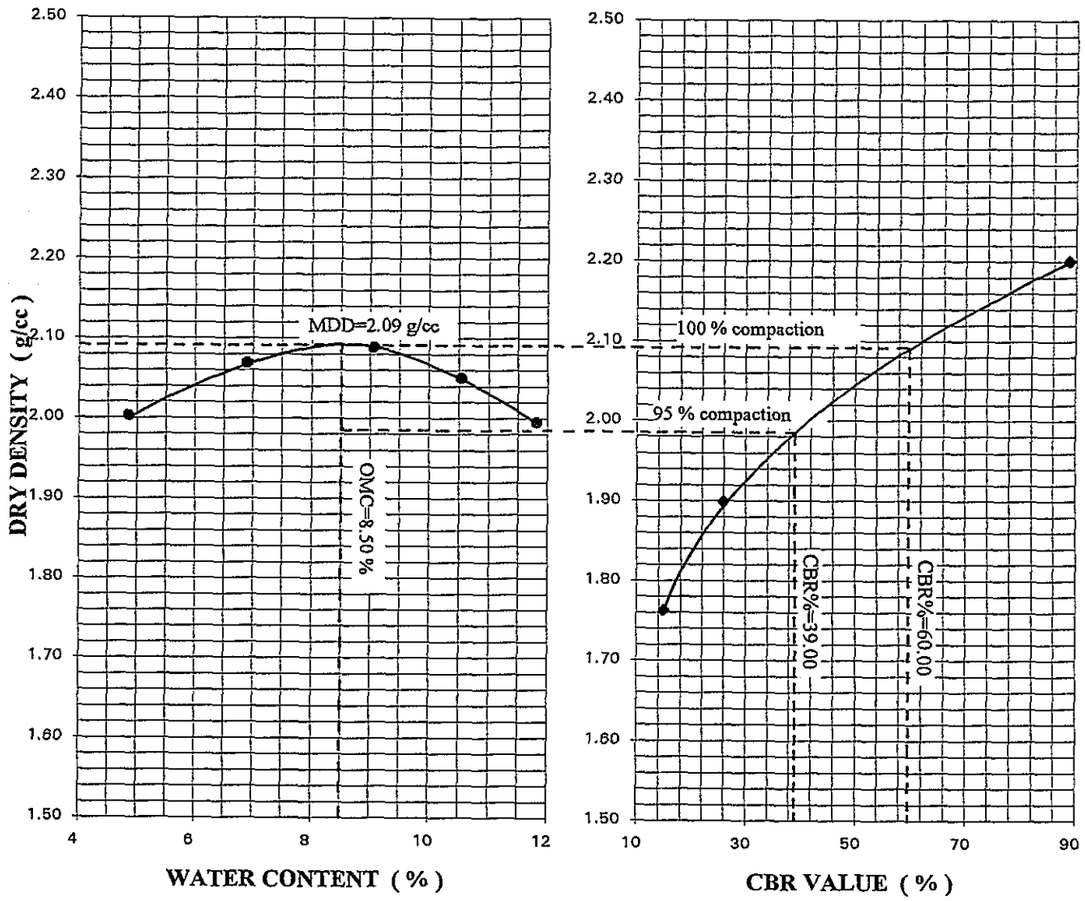
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	4.87	6.90	9.07	10.54	11.82
WT. OF SOIL+MOLD,	g	12000	12235	12375	12350	12275
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4420	4655	4795	4770	4695
WET DENSITY,	g/cc	2.10	2.21	2.28	2.27	2.23
DRY DENSITY,	g/cc	2.00	2.07	2.09	2.05	1.99



MAXIMUM DRY DENSITY = 2.09 g/cc OPTIMUM MOISTURE CONTENT = 8.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 68

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-16 (Sta. 1375+600)	0.90-1.50 m	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy CLAY		A-6 (8)

COMPACTION TEST

MOLD DIMENSIONS:

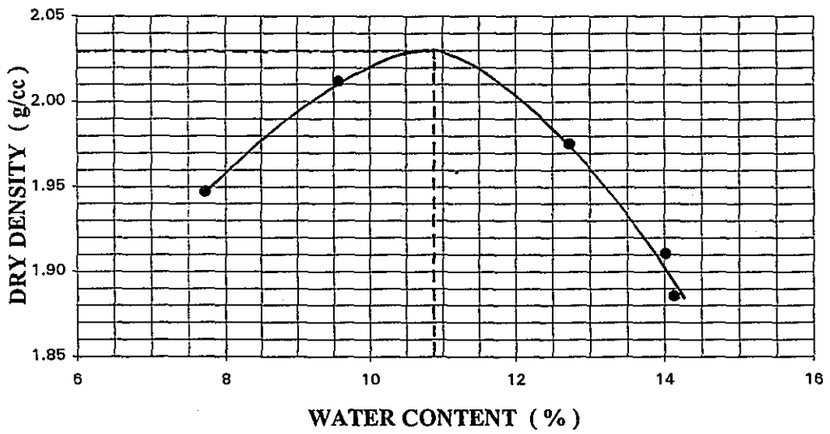
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

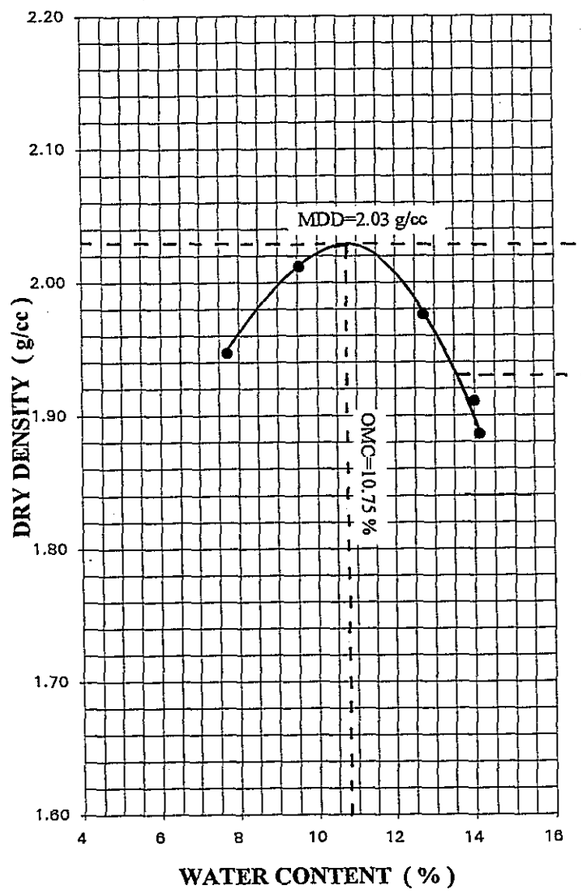
TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		SM-1	MITZ	399	116	G11	E24	B	G18	359	208
WT. OF CAN+WET SOIL,	g	122.90	120.50	132.70	130.00	136.60	139.70	140.00	138.00	156.90	155.60
WT. OF CAN+DRY SOIL,	g	115.00	113.70	122.90	120.20	123.00	125.70	123.60	124.60	139.00	138.50
WT. OF WATER,	g	7.90	6.80	9.80	9.80	13.60	14.00	16.40	13.40	17.90	17.10
WT. OF CAN,	g	15.60	23.20	15.80	22.10	16.90	15.10	15.50	20.40	15.10	14.70
WT. OF DRY SOIL,	g	99.40	90.50	107.10	98.10	106.10	110.60	108.10	104.20	123.90	123.80
WATER CONTENT,	%	7.95	7.51	9.15	9.99	12.82	12.66	15.17	12.86	14.45	13.81

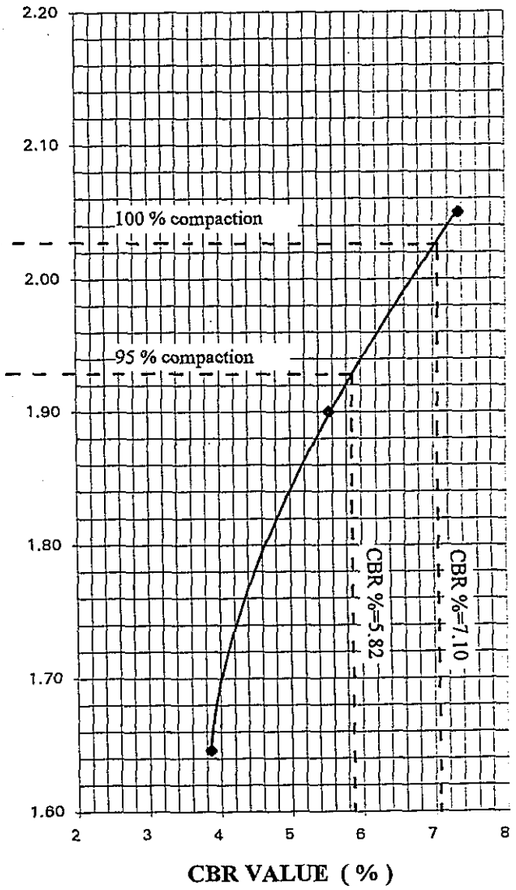
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	7.73	9.57	12.74	14.02	14.13
WT. OF SOIL+MOLD,	g	11995	12220	12268	12165	12110
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4415	4640	4688	4585	4530
WET DENSITY,	g/cc	2.10	2.20	2.23	2.18	2.15
DRY DENSITY,	g/cc	1.95	2.01	1.98	1.91	1.89



MAXIMUM DRY DENSITY = 2.03 g/cc OPTIMUM MOISTURE CONTENT = 10.75 %

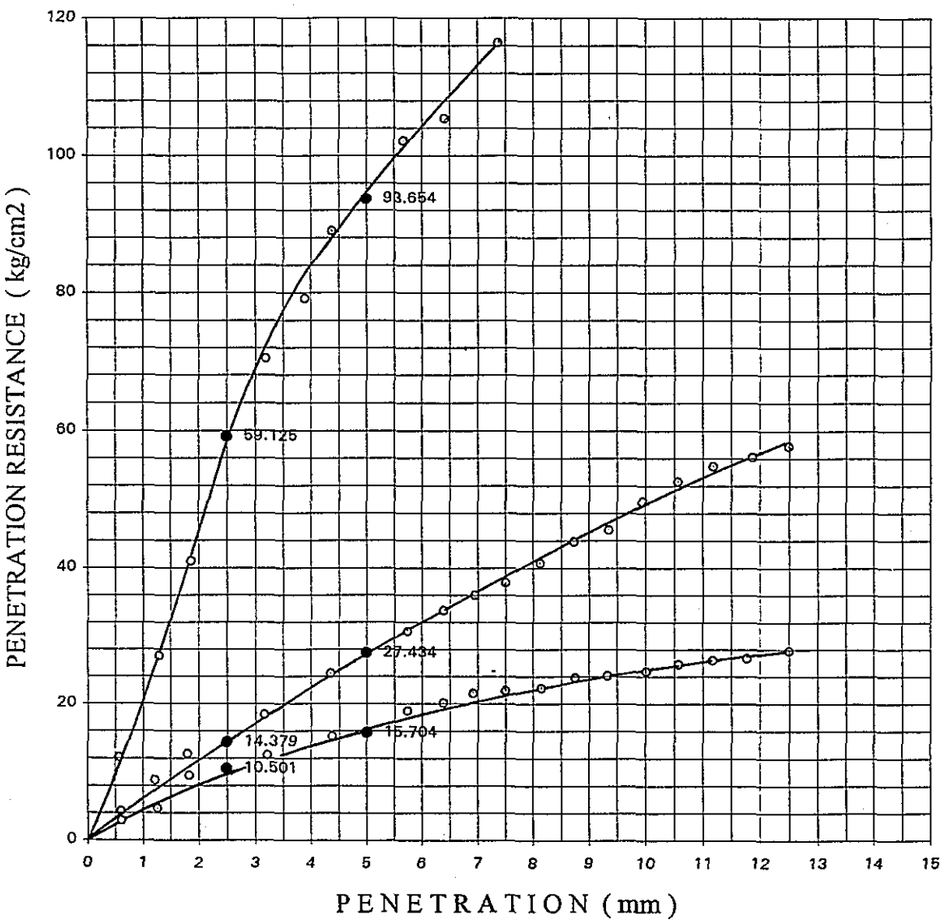




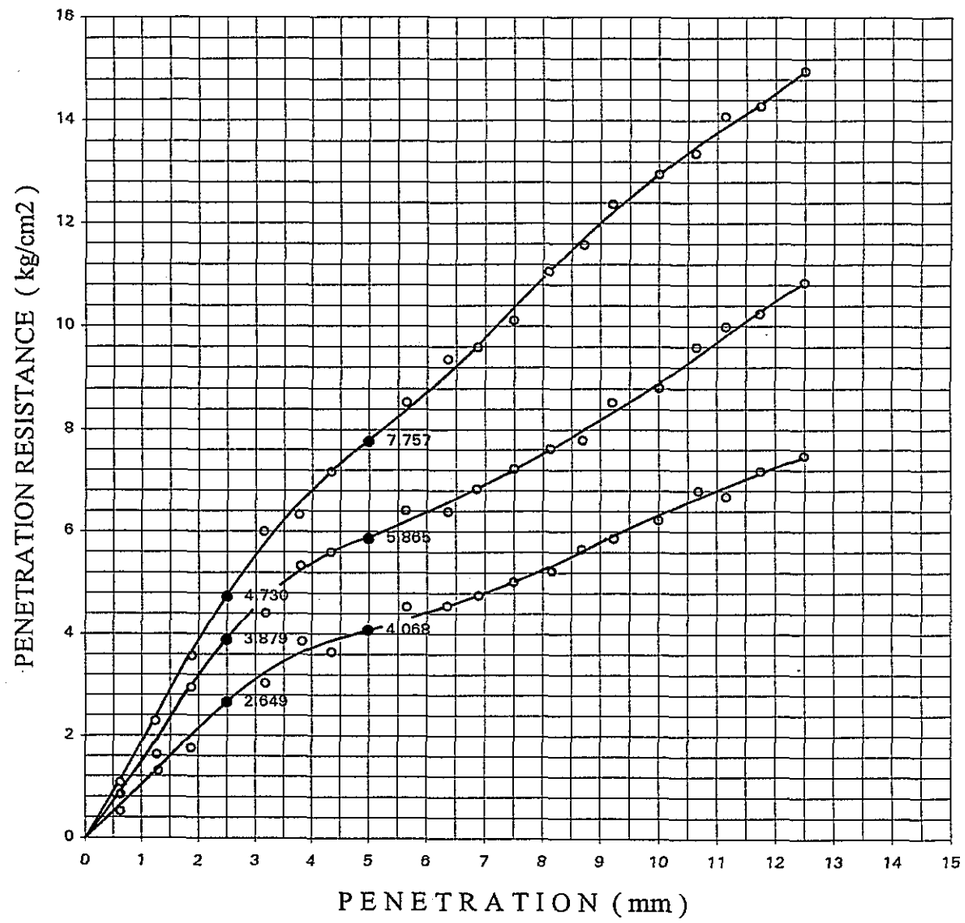
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 69

CBR PENETRATION RESISTANCE GRAPH

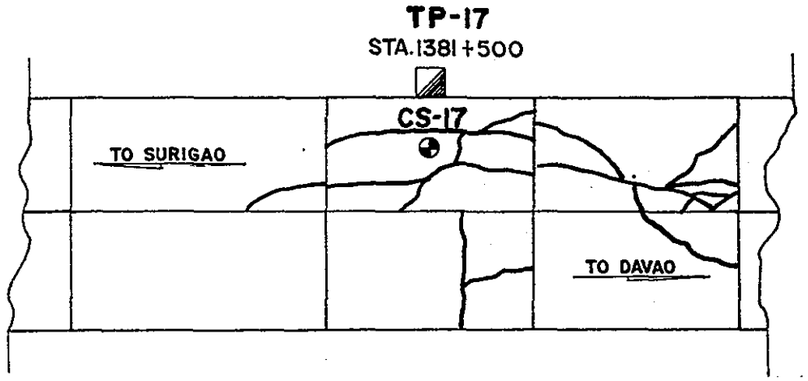
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-16 (Sta. 1375+600)	0.23-0.90 m	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

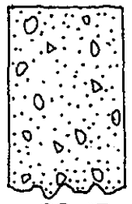


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-16 (Sta. 1375+600)	0.90-1.50 m	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Gray sandy CLAY		A-6 (8)

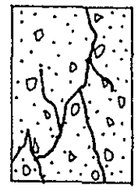


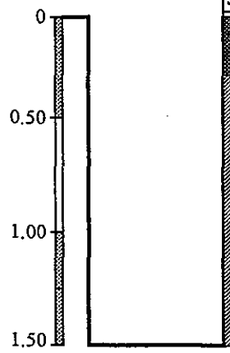
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 70




CS-17

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
23.0	10.0	2.19	2874


MODE OF FAILURE



TP-17

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.230				
	Brown sandy CLAY traces of fine gravel.	1.27	39	21	18	A-6 (11)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.	17
STATION (Km)	1381+500
DEPTH, (cm)	0.25

UNIT WEIGHT OF SAND,	g/cc	1.34
SAND+JUG (BEFORE),	g	5970.00
SAND+JUG (AFTER),	g	2275.00
WEIGHT OF SAND USED,	g	3695.00
WEIGHT OF SAND IN CONE,	g	1608.00
WEIGHT OF SAND IN HOLE,	g	2087.00
VOLUME OF HOLE,	cu.cm	1557.46
WEIGHT OF WET SOIL,	g	3310.00
WET DENSITY,	g/cc	2.13

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	266.50
WT. OF DRY SOIL+CAN,	g	207.30
WEIGHT OF CAN,	g	15.46
MOISTURE LOSS,	g	59.20
WEIGHT OF DRY SOIL,	g	191.84
MOISTURE CONTENT,	%	30.86
DRY DENSITY,	g/cc	1.62

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.13
DRY DENSITY,	g/cc	1.62
MAXIMUM DRY DENSITY,	g/cc	1.67
OPT. MOISTURE CONTENT,	%	22.00
PERCENT COMPACTION		97.25

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P-71

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-17 (Sta. 1381+500)	0.23-1.50 m	October 05, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy-silty CLAY		A-6 (11)

COMPACTION TEST

MOLD DIMENSIONS:

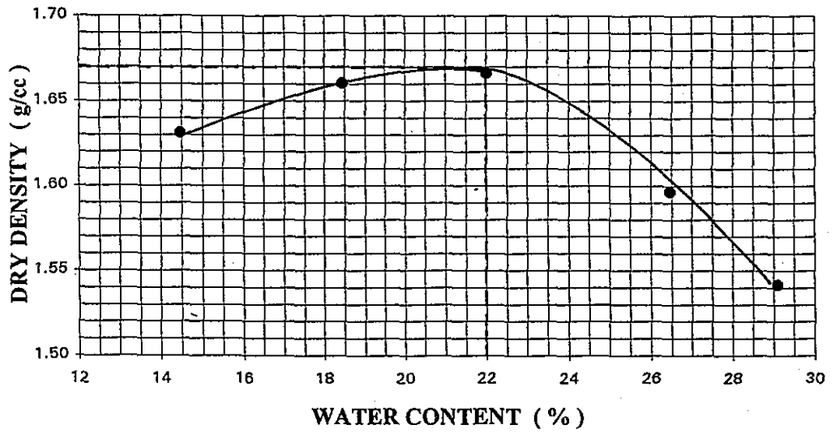
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		1071	139	201	205	204	157	113	1077	185	170
WT. OF CAN+WET SOIL,	g	116.40	113.80	136.00	135.70	154.10	155.60	172.70	173.80	193.70	195.40
WT. OF CAN+DRY SOIL,	g	103.20	100.70	116.50	116.50	128.60	129.50	135.60	143.00	153.90	153.00
WT. OF WATER,	g	13.20	13.10	19.50	19.20	25.50	26.10	37.10	30.80	39.80	42.40
WT. OF CAN,	g	9.60	12.50	11.60	11.70	12.60	11.20	11.00	10.00	12.70	11.80
WT. OF DRY SOIL,	g	93.60	88.20	104.90	104.80	116.00	118.30	124.60	133.00	141.20	141.20
WATER CONTENT,	%	14.10	14.85	18.59	18.32	21.98	22.06	29.78	23.16	28.19	30.03

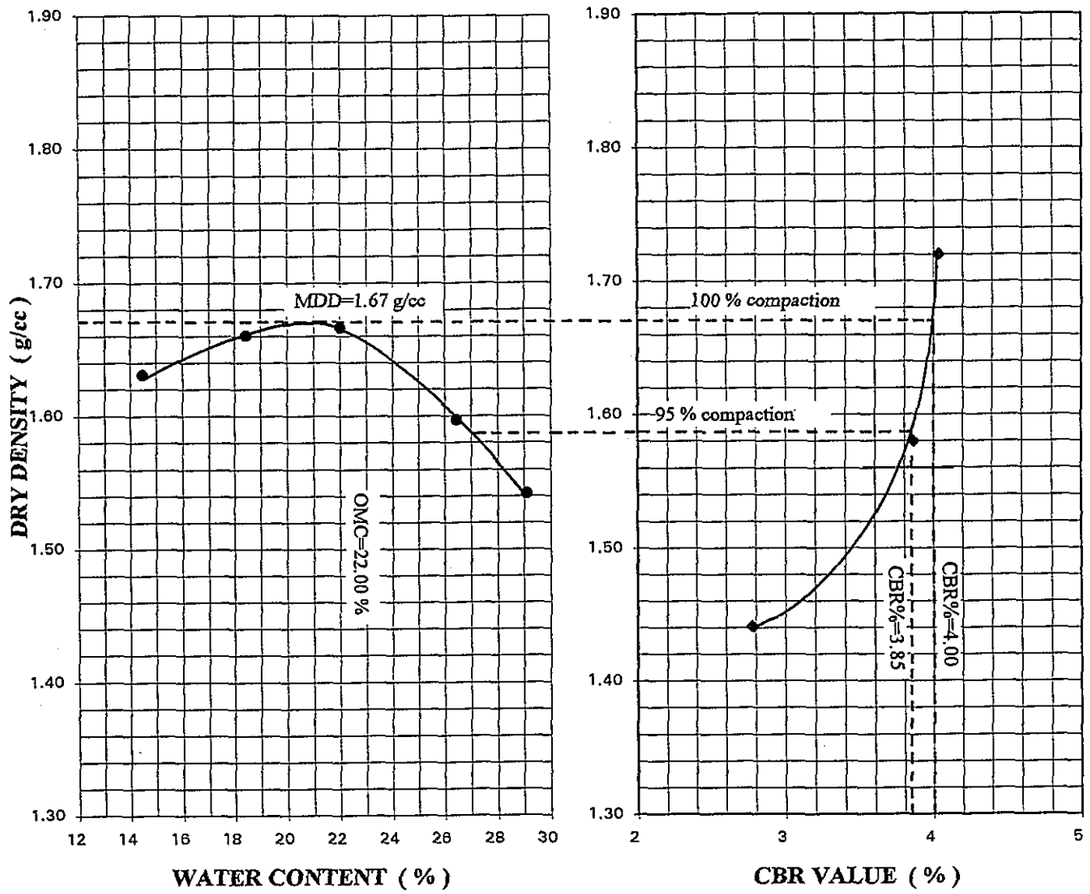
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	14.48	18.45	22.02	26.47	29.11
WT. OF SOIL+MOLD,	g	11510	11720	11860	11830	11770
WT. OF MOLD,	g	7580	7580,	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3930	4140	4280	4250	4190
WET DENSITY,	g/cc	1.87	1.97	2.03	2.02	1.99
DRY DENSITY,	g/cc	1.63	1.66	1.67	1.60	1.54



MAXIMUM DRY DENSITY = 1.67 g/cc OPTIMUM MOISTURE CONTENT = 22.00 %

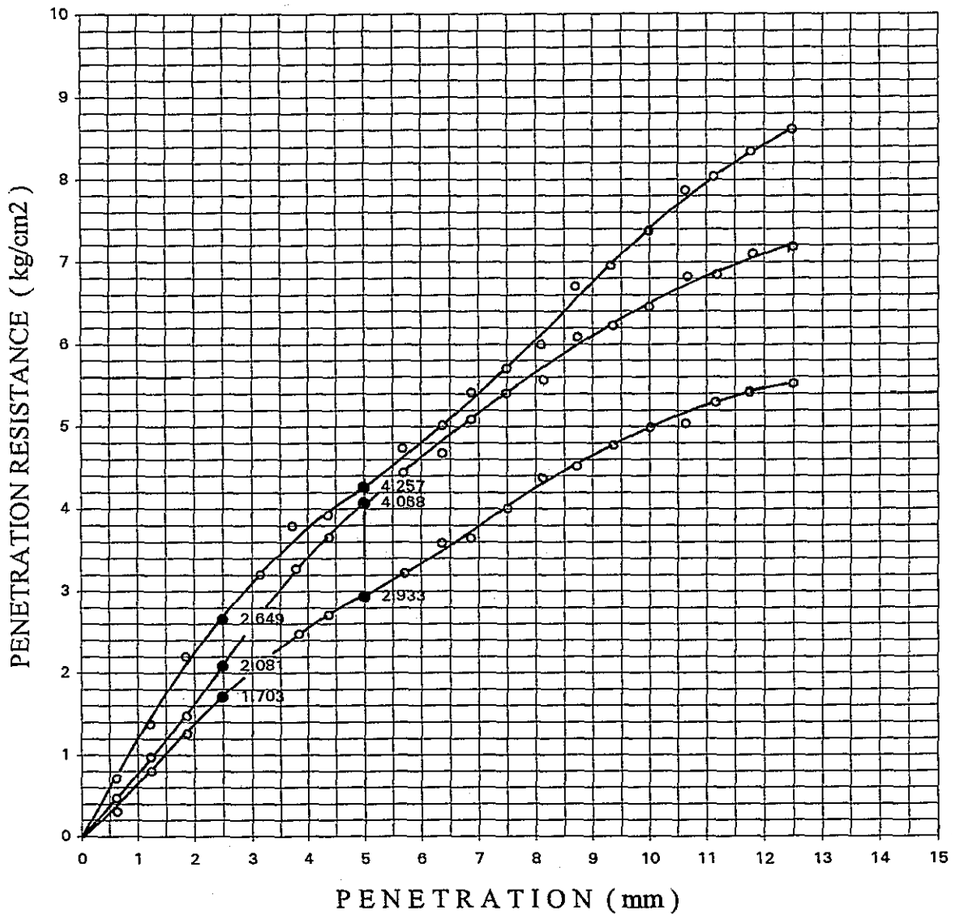
COMPACTION - CBR RELATION



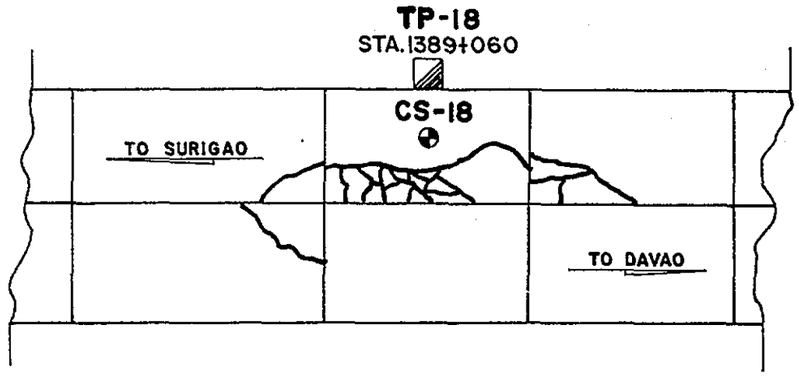
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P -72

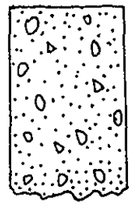
CBR PENETRATION RESISTANCE GRAPH

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-17 (Sta. 1381+500)	0.23-1.50 m	October 05, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy-silty CLAY		A-6 (11)

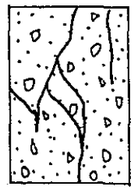


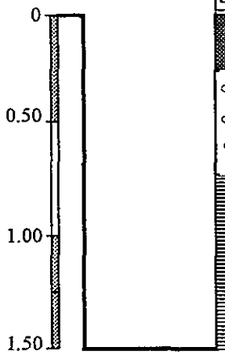
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 73




CS-18

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
26.0	10.0	2.21	2463


MODE OF FAILURE



TP-18

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.260				
	Brown sandy GRAVEL, traces of silt.	0.27	NP	NP	NP	A-1-a (0)
	Brown sandy CLAY, traces of fine gravel.	0.80	54	30	24	A-7-5 (14)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		18	
STATION (Km)		1389+060	
DEPTH, (cm)		0.30	0.70
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	6000.00	5915.00
SAND+JUG (AFTER),	g	2342.00	2215.00
WEIGHT OF SAND USED,	g	3658.00	3700.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2050.00	2092.00
VOLUME OF HOLE,	cu.cm	1529.85	1561.19
WEIGHT OF WET SOIL,	g	3561.00	3175.00
WET DENSITY,	g/cc	2.33	2.03

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1728.50	200.00
WT. OF DRY SOIL+CAN,	g	1621.00	155.00
WEIGHT OF CAN,	g	101.50	16.40
MOISTURE LOSS,	g	107.50	45.00
WEIGHT OF DRY SOIL,	g	1519.50	138.60
MOISTURE CONTENT,	%	7.07	32.47
DRY DENSITY,	g/cc	2.17	1.54

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.33	2.03
DRY DENSITY,	g/cc	2.17	1.54
MAXIMUM DRY DENSITY,	g/cc	2.06	1.62
OPT. MOISTURE CONTENT,	%	9.00	20.50
PERCENT COMPACTION		105.53	94.77

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 74

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-18 (Sta. 1389+060)	0.26-0.70	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

COMPACTION TEST

MOLD DIMENSIONS:

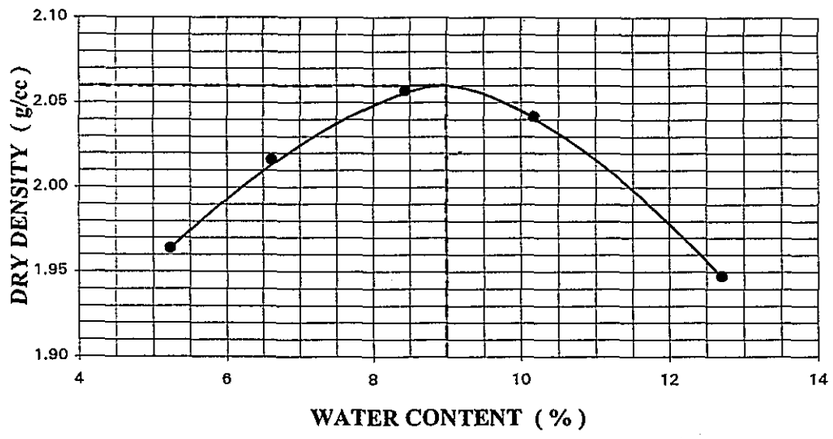
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		146	168	167	165	185	203	191	170	176	161
WT. OF CAN+WET SOIL,	g	113.50	113.50	133.30	133.00	153.10	155.00	172.30	172.50	192.30	191.70
WT. OF CAN+DRY SOIL,	g	107.90	109.00	125.90	125.50	143.00	143.10	157.40	157.80	180.00	181.20
WT. OF WATER,	g	5.60	4.50	7.40	7.50	10.10	11.90	14.90	14.70	32.20	10.50
WT. OF CAN,	g	11.90	11.90	13.00	13.20	13.00	12.40	12.30	12.20	12.40	11.60
WT. OF DRY SOIL,	g	96.00	97.10	112.90	112.30	130.00	130.70	145.10	145.60	167.60	169.60
WATER CONTENT,	%	5.83	4.63	6.55	6.68	7.77	9.10	10.27	10.10	19.21	6.19

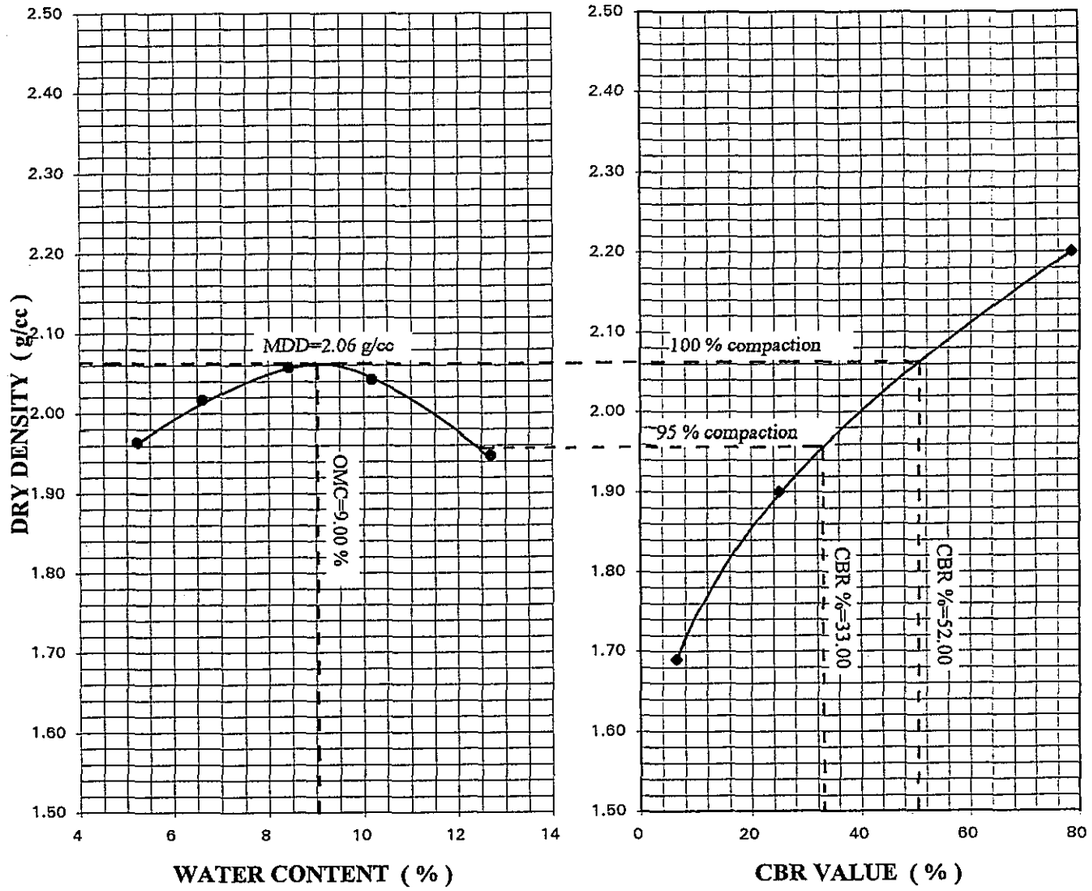
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	5.23	6.62	8.44	10.18	12.70
WT. OF SOIL+MOLD,	g	11930	12105	12275	12315	12200
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4350	4525	4695	4735	4620
WET DENSITY,	g/cc	2.07	2.15	2.23	2.25	2.19
DRY DENSITY,	g/cc	1.96	2.02	2.06	2.04	1.95



MAXIMUM DRY DENSITY = 2.06 g/cc OPTIMUM MOISTURE CONTENT = 9.00 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 75

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-18 (Sta. 1389+060)	0.70-1.50 m	October 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty CLAY		A-7-5 (14)

COMPACTION TEST

MOLD DIMENSIONS:

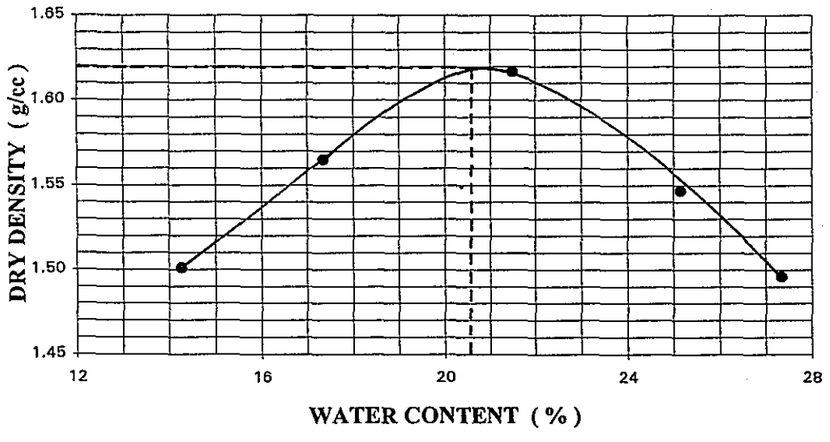
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		168	167	203	164	192	186	159	179	158	1208
WT. OF CAN+WET SOIL,	g	113.30	111.30	130.50	129.30	144.40	144.90	160.70	159.90	182.60	181.80
WT. OF CAN+DRY SOIL,	g	100.00	99.50	113.00	112.00	121.00	121.50	130.50	130.50	146.20	145.20
WT. OF WATER,	g	13.30	11.80	17.50	17.30	23.40	23.40	30.20	29.40	36.40	36.60
WT. OF CAN,	g	11.10	12.70	11.70	12.70	11.90	13.00	11.60	12.50	12.30	12.20
WT. OF DRY SOIL,	g	88.90	86.80	101.30	99.30	109.10	108.50	118.90	118.00	133.90	133.00
WATER CONTENT,	%	14.96	13.59	17.28	17.42	21.45	21.57	25.40	24.92	27.18	27.52

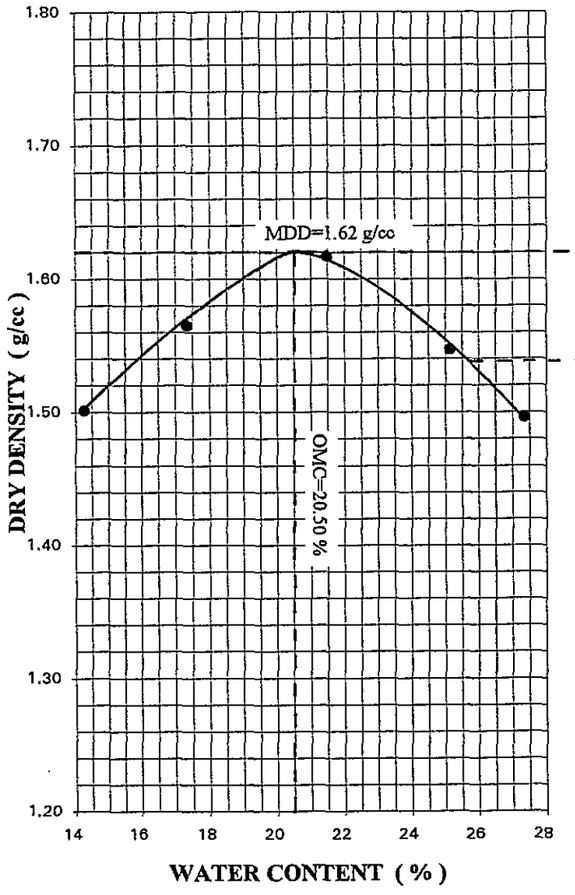
DENSITY DETERMINATION

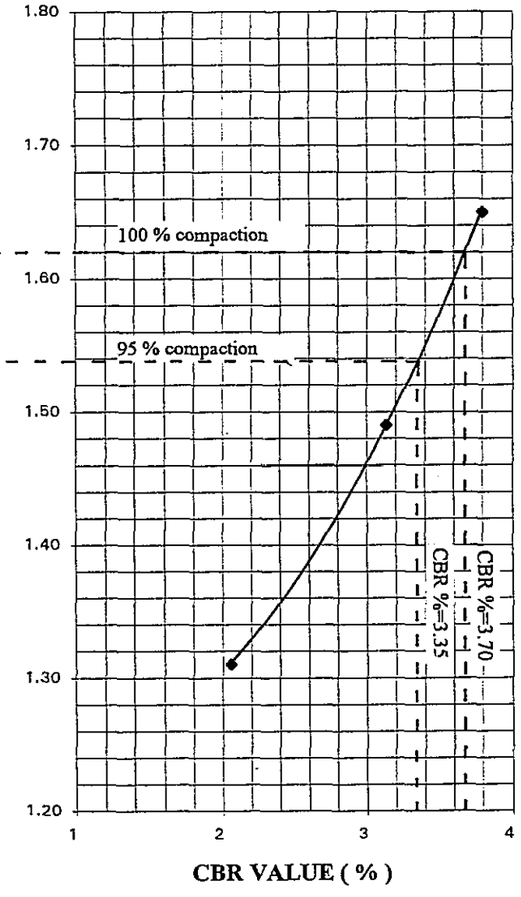
AVE. WATER CONTENT,	%	14.28	17.35	21.51	25.16	27.35
WT. OF SOIL+MOLD,	g	11190	11445	11715	11655	11590
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3610	3865	4135	4075	4010
WET DENSITY,	g/cc	1.72	1.84	1.96	1.94	1.91
DRY DENSITY,	g/cc	1.50	1.56	1.62	1.55	1.50



MAXIMUM DRY DENSITY = 1.62 g/cc OPTIMUM MOISTURE CONTENT = 20.50 %

COMPACTION - CBR RELATION

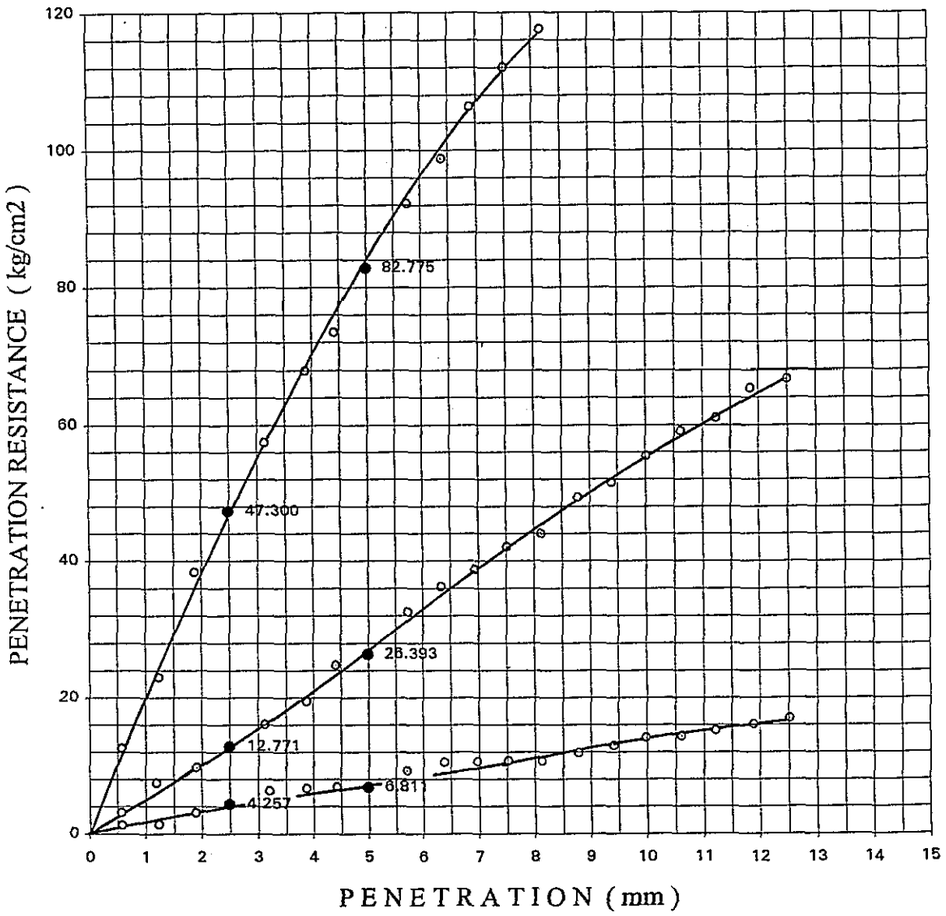




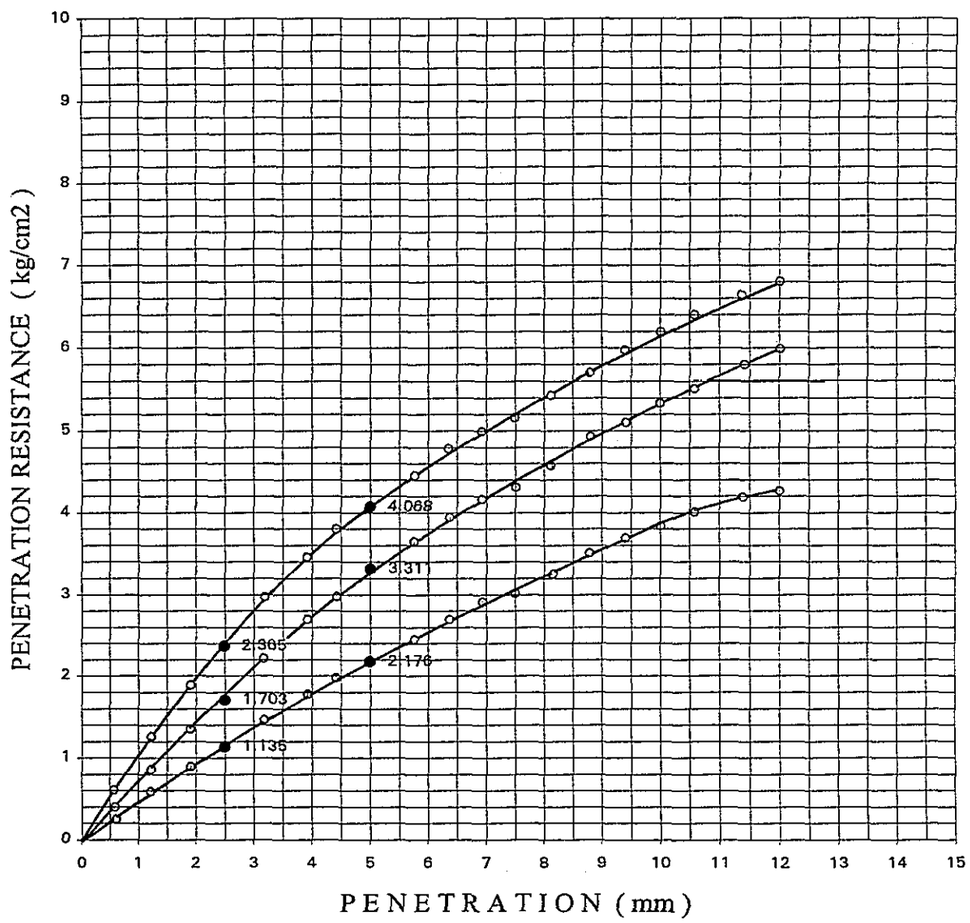
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-76

CBR PENETRATION RESISTANCE GRAPH

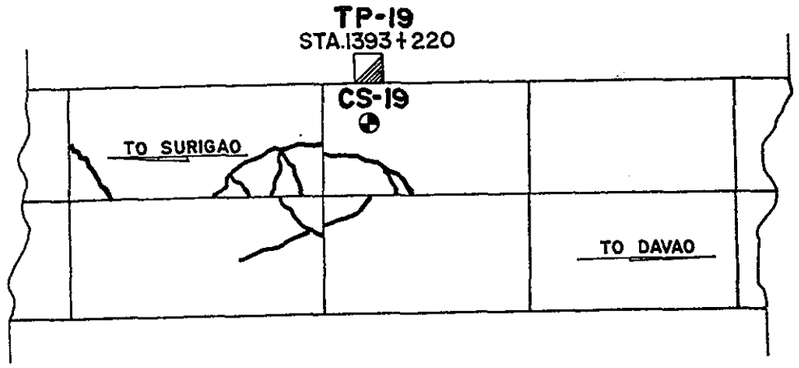
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-18 (Sta. 1389+060)	0.26-0.70	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-a (0)

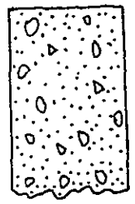


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-18 (Sta. 1389+060)	0.70-1.50 m	October 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown silty CLAY		A-7-5 (14)



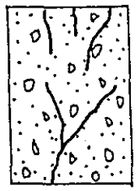
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-77



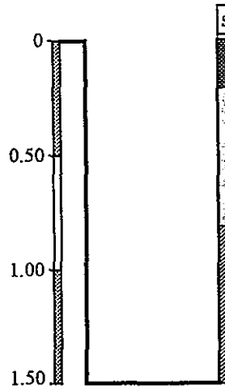


CS-19

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
24.0	10.0	2.25	2956



MODE OF FAILURE



SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.240				
	Brown sandy GRAVEL, little amount of silt.	0.56	NP	NP	NP	A-1-b (0)
	Gray sandy CLAY.	0.70	44	25	19	A-7-5 (12)

TP-19

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		19	
STATION (Km)		1393+220	
DEPTH, (cm)		0.25	0.80
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5950.00	5976.00
SAND+JUG (AFTER),	g	2241.00	2010.00
WEIGHT OF SAND USED,	g	3709.00	3966.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	2101.00	2358.00
VOLUME OF HOLE,	cu.cm	1567.91	1759.70
WEIGHT OF WET SOIL,	g	2962.00	3182.00
WET DENSITY,	g/cc	1.89	1.81

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1108.00	212.50
WT. OF DRY SOIL+CAN,	g	1040.50	166.10
WEIGHT OF CAN,	g	115.70	16.62
MOISTURE LOSS,	g	67.50	46.40
WEIGHT OF DRY SOIL,	g	924.80	149.48
MOISTURE CONTENT,	%	7.30	31.04
DRY DENSITY,	g/cc	1.76	1.38

LABORATORY COMPACTION:

WET DENSITY,	g/cc	1.89	1.81
DRY DENSITY,	g/cc	1.76	1.38
MAXIMUM DRY DENSITY,	g/cc	2.04	1.72
OPT. MOISTURE CONTENT,	%	9.25	18.00
PERCENT COMPACTION		86.31	80.23

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P – 78

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-19 (Sta. 1393+220)	0.24-0.80 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-b (0)

COMPACTION TEST

MOLD DIMENSIONS:

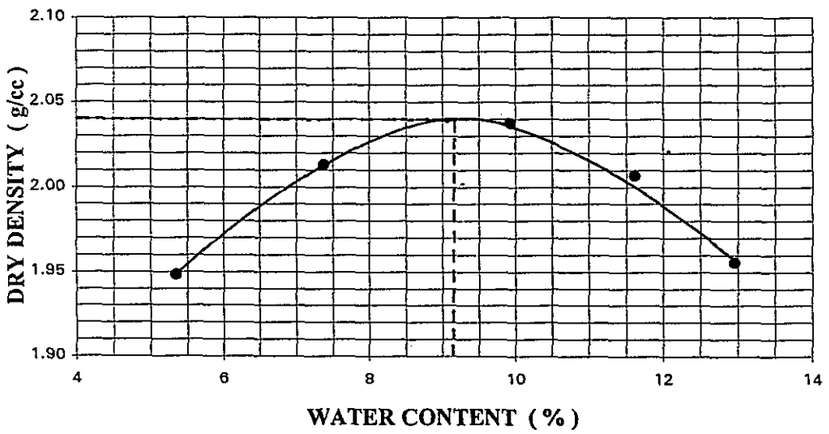
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		166	179	193	AB	1059	1081	137	182	147	144
WT. OF CAN+WET SOIL,	g	116.10	115.60	133.90	133.90	153.60	154.50	174.10	173.40	193.50	191.80
WT. OF CAN+DRY SOIL,	g	110.00	111.20	125.00	126.10	141.60	140.50	156.50	157.50	173.00	170.90
WT. OF WATER,	g	6.10	4.40	8.90	7.80	12.00	14.00	17.60	15.90	20.50	20.90
WT. OF CAN,	g	12.00	12.80	12.80	11.80	10.40	10.00	12.80	12.80	11.60	12.80
WT. OF DRY SOIL,	g	98.00	98.40	112.20	114.30	131.20	130.50	143.70	144.70	161.40	158.10
WATER CONTENT,	%	6.22	4.47	7.93	6.82	9.15	10.73	12.25	10.99	12.70	13.22

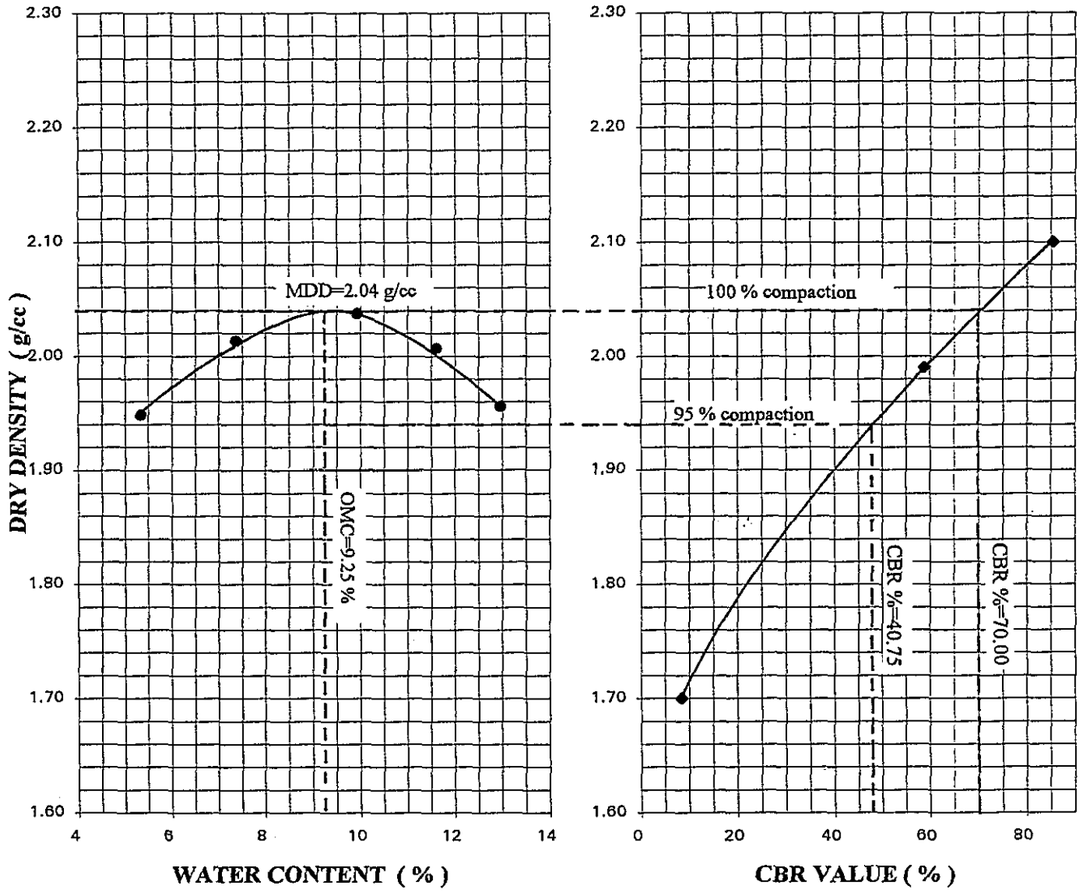
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	5.35	7.38	9.94	11.62	12.96
WT. OF SOIL+MOLD,	g	11900	12130	12295	12295	12230
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	4320	4550	4715	4715	4650
WET DENSITY,	g/cc	2.05	2.16	2.24	2.24	2.21
DRY DENSITY,	g/cc	1.95	2.01	2.04	2.01	1.96



MAXIMUM DRY DENSITY = 2.04 g/cc OPTIMUM MOISTURE CONTENT = 9.25 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P—79

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-19 (Sta. 1393+220)	0.80-1.50 m	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy CLAY		A-7-5 (12)

COMPACTION TEST

MOLD DIMENSIONS:

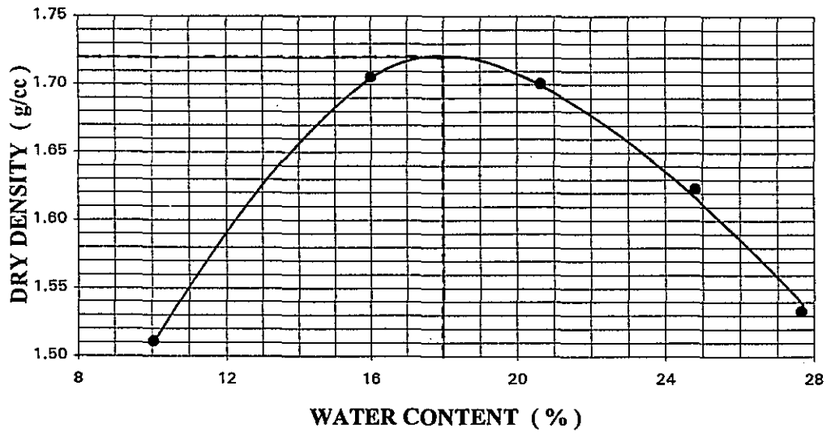
DIAMETER (cm)= 15.20 *HEIGHT (cm)=* 11.60 *VOLUME (cc)=* 2104.92

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		GO3	353	E25	G02	311	376	13X	346	CIA	341
WT. OF CAN+WET SOIL,	g	125.30	122.70	142.70	141.40	165.00	166.50	184.60	182.10	205.20	203.80
WT. OF CAN+DRY SOIL,	g	115.20	114.30	125.00	124.30	140.20	140.20	151.00	149.30	164.10	163.90
WT. OF WATER,	g	10.10	8.40	17.70	17.10	24.80	26.30	33.60	32.80	41.10	39.90
WT. OF CAN,	g	21.50	24.30	15.40	16.60	16.90	16.20	15.70	17.00	17.20	18.00
WT. OF DRY SOIL,	g	93.70	90.00	109.60	107.70	123.30	124.00	135.30	132.30	146.90	145.90
WATER CONTENT,	%	10.78	9.33	16.15	15.88	20.11	21.21	24.83	24.79	27.98	27.35

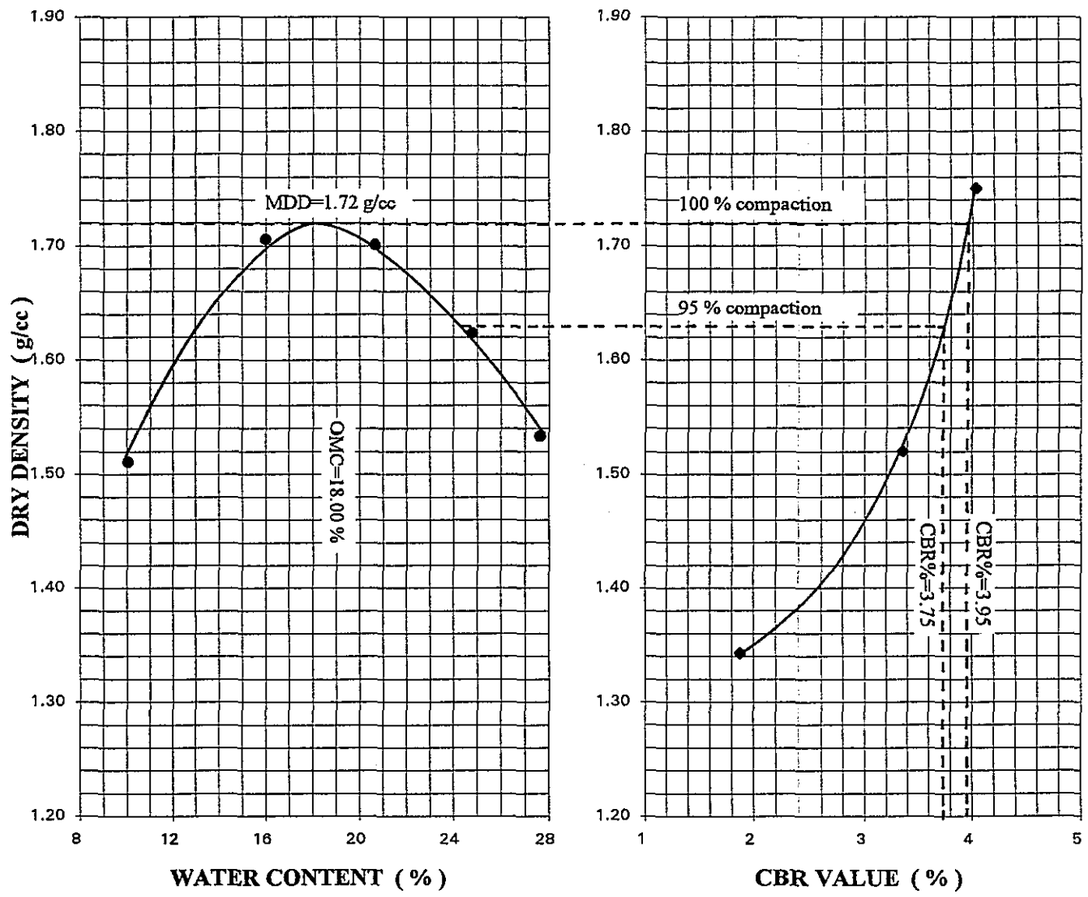
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	10.06	16.01	20.66	24.81	27.66
WT. OF SOIL+MOLD,	g	11080	11745	11900	11845	11700
WT. OF MOLD,	g	7580	7580	7580	7580	7580
WT. OF SOIL IN MOLD,	g	3500	4165	4320	4265	4120
WET DENSITY,	g/cc	1.66	1.98	2.05	2.03	1.96
DRY DENSITY,	g/cc	1.51	1.71	1.70	1.62	1.53



MAXIMUM DRY DENSITY = 1.72 g/cc OPTIMUM MOISTURE CONTENT = 18.00 %

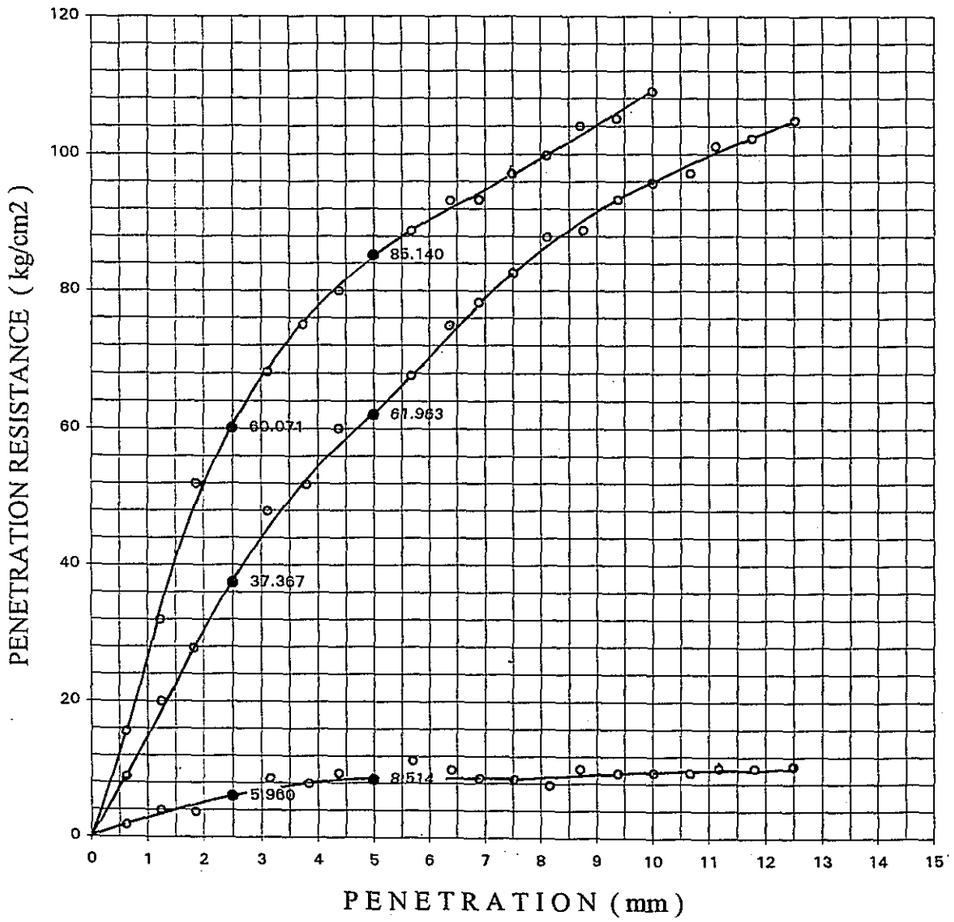
COMPACTION - CBR RELATION



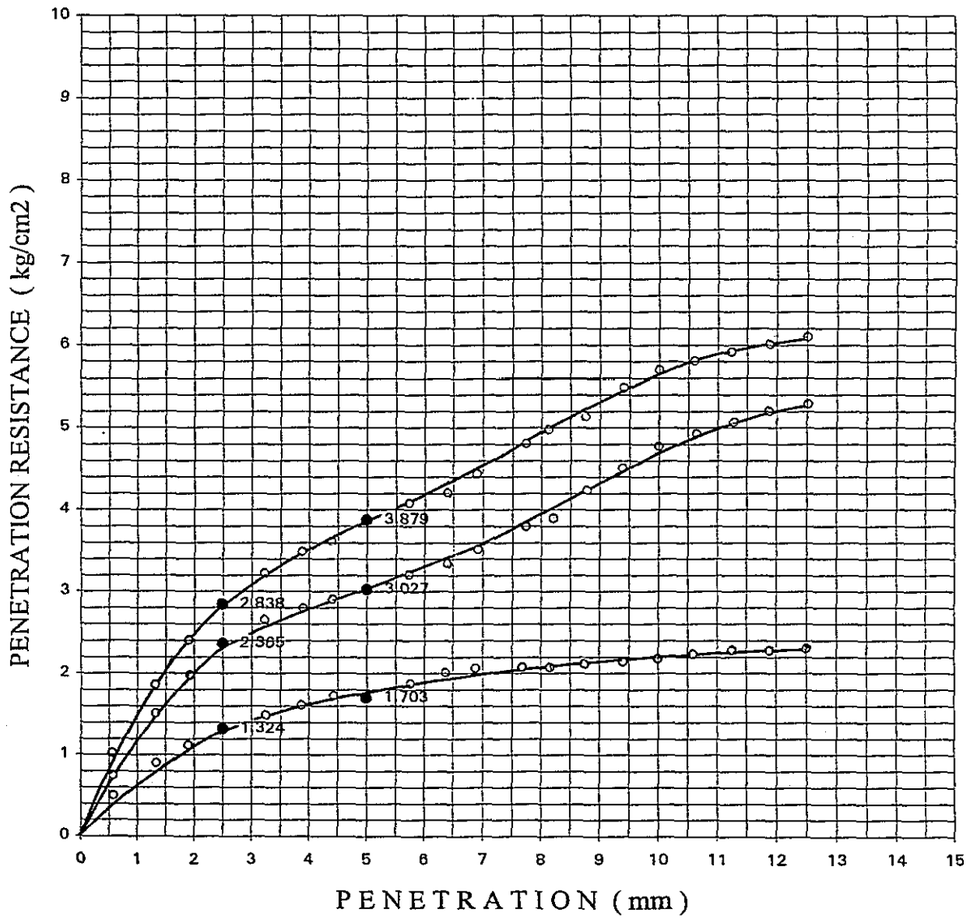
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P-80

CBR PENETRATION RESISTANCE GRAPH

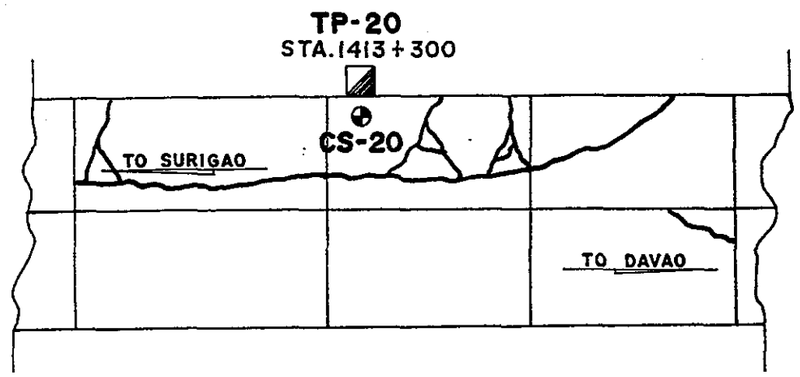
SAMPLE NO:	DEPTH:	DATE TESTED:
TP-19 (Sta. 1393+220)	0.24-0.80 m	September 29, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-b (0)

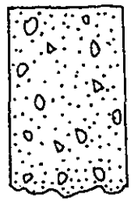


SAMPLE NO:	DEPTH:	DATE TESTED:
TP-19 (Sta. 1393+220)	0.80-1.50 m	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy CLAY		A-7-5 (12)



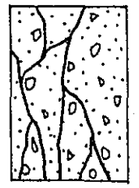
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 81



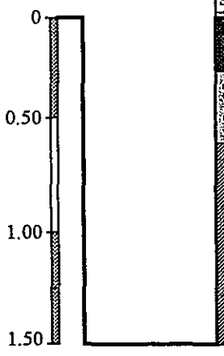


CS-20

FIELD DATA:		LABORATORY TESTING:	
THICKNESS (cm)	CORE DIAMETER (cm)	L/D RATIO	COMPRESSIVE STRENGTH (psi)
22.0	10.0	2.03	4598



MODE OF FAILURE



TP-20

SYMBOL	SAMPLE DESCRIPTION:	THICKNESS(m)	LL	PL	PI	AASHTO CLASS.
	Concrete Pavement	0.220				
	Brown sandy GRAVEL, little amount of silt.	0.38	NP	NP	NP	A-1-b (0)
	Brown sandy CLAY traces of fine gravel.	0.90	44	25	19	A-7-5 (11)

FIELD DENSITY TEST
(SAND-CONE METHOD)

FIELD DATA:

TEST PIT NO.		20	
STATION (Km)		1413+300	
DEPTH, (cm)		0.25	0.60
UNIT WEIGHT OF SAND,	g/cc	1.34	1.34
SAND+JUG (BEFORE),	g	5925.00	5975.00
SAND+JUG (AFTER),	g	2600.00	2375.00
WEIGHT OF SAND USED,	g	3325.00	3600.00
WEIGHT OF SAND IN CONE,	g	1608.00	1608.00
WEIGHT OF SAND IN HOLE,	g	1717.00	1992.00
VOLUME OF HOLE,	cu.cm	1281.34	1486.57
WEIGHT OF WET SOIL,	g	3200.00	2680.00
WET DENSITY,	g/cc	2.50	1.80

LABORATORY DATA:

WT. OF WET SOIL+CAN,	g	1132.50	516.00
WT. OF DRY SOIL+CAN,	g	1061.00	453.60
WEIGHT OF CAN,	g	177.30	107.60
MOISTURE LOSS,	g	71.50	62.40
WEIGHT OF DRY SOIL,	g	883.70	346.00
MOISTURE CONTENT,	%	8.09	18.03
DRY DENSITY,	g/cc	2.31	1.53

LABORATORY COMPACTION:

WET DENSITY,	g/cc	2.50	1.80
DRY DENSITY,	g/cc	2.31	1.53
MAXIMUM DRY DENSITY,	g/cc	2.24	1.76
OPT. MOISTURE CONTENT,	%	9.25	18.00
PERCENT COMPACTION		103.14	86.78

JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: TEST PITS & CORED CONCRETE (FIELD & LABORATORY RESULTS)	SHEET NO.: P-82

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-20 (Sta. 1413+300)	0.22-0.60	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-b (0)

COMPACTION TEST

MOLD DIMENSIONS:

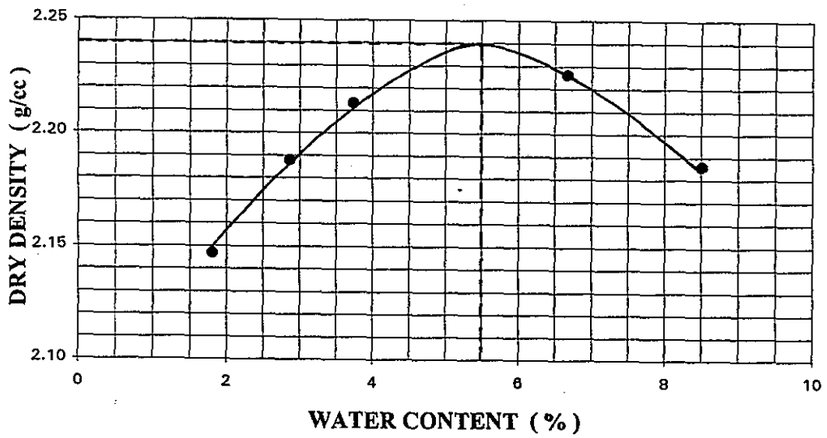
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		E06	188	18	3X	1006	1058	5	329	4X	1025
WT. OF CAN+WET SOIL,	g	112.00	108.10	116.20	120.00	115.90	126.50	139.20	143.20	150.00	157.20
WT. OF CAN+DRY SOIL,	g	110.30	106.50	113.40	117.20	113.10	122.20	131.80	135.00	140.20	146.10
WT. OF WATER,	g	1.70	1.60	2.80	2.80	2.80	4.30	7.40	8.20	9.80	11.10
WT. OF CAN,	g	14.60	19.70	20.00	14.80	25.80	21.60	17.70	15.50	14.10	26.10
WT. OF DRY SOIL,	g	95.70	86.80	93.40	102.40	87.30	100.60	114.10	119.50	126.10	120.00
WATER CONTENT,	%	1.78	1.84	3.00	2.73	3.21	4.27	6.49	6.86	7.77	9.25

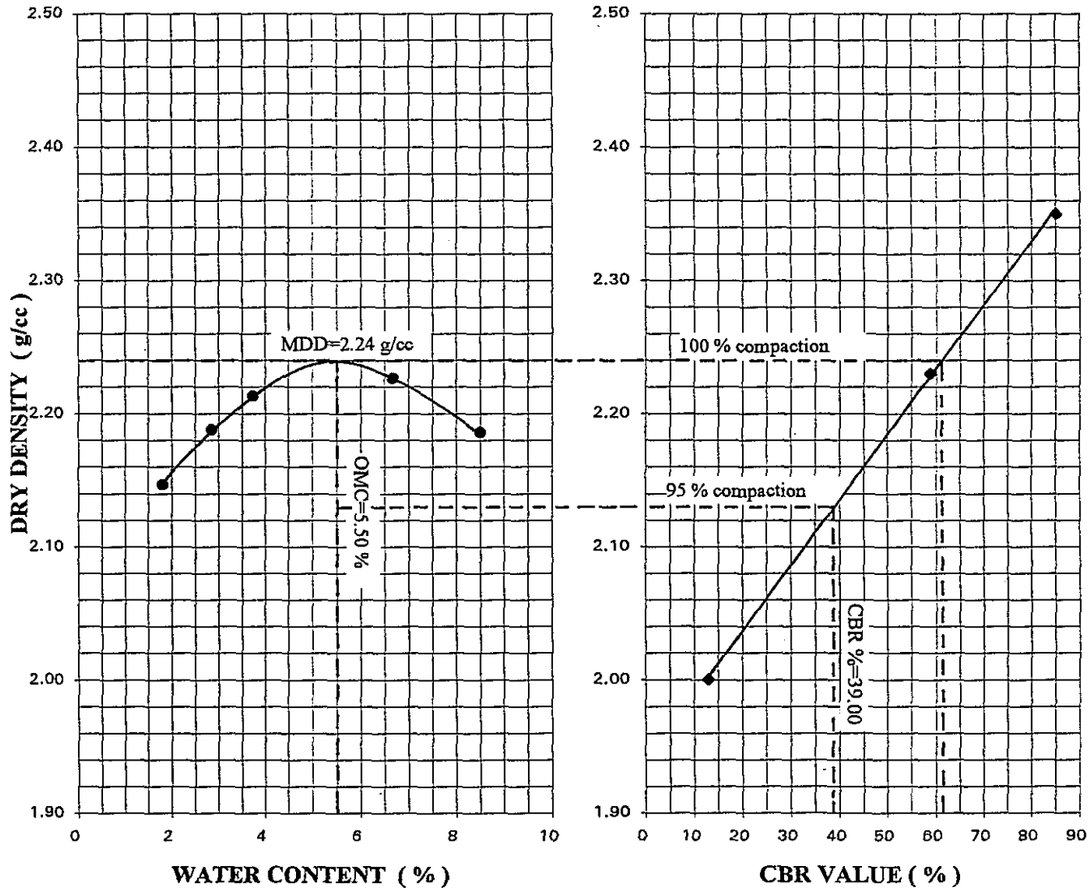
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	1.81	2.87	3.74	6.67	8.51
WT. OF SOIL+MOLD,	g	11150	11291	11390	11562	11555
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4755	4896	4995	5167	5160
WET DENSITY,	g/cc	2.19	2.25	2.30	2.38	2.37
DRY DENSITY,	g/cc	2.15	2.19	2.21	2.23	2.19



MAXIMUM DRY DENSITY = 2.24 g/cc OPTIMUM MOISTURE CONTENT = 5.50 %

COMPACTION - CBR RELATION



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES. DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P -83

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-20 (Sta. 1413+300)	0.60-1.50	OCTOBER 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy CLAY		A-7-5 (11)

COMPACTION TEST

MOLD DIMENSIONS:

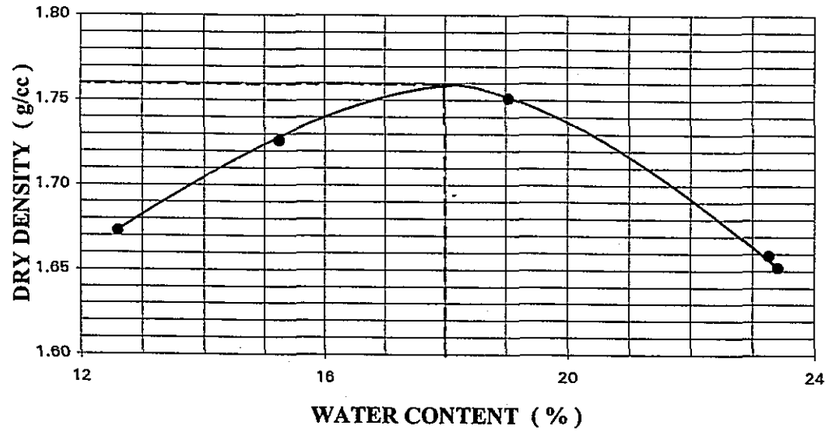
DIAMETER (cm)= 15.52 *HEIGHT (cm)=* 11.50 *VOLUME (cc)=* 2175.56

WATER CONTENT DETERMINATION

TEST NO.		1		2		3		4		5	
MOISTURE CAN NO.		4-X	103	341	122	322	B	R-3	377	101	B-5
WT. OF CAN+WET SOIL,	g	111.30	105.60	133.20	130.00	135.00	143.20	152.70	151.50	152.70	152.50
WT. OF CAN+DRY SOIL,	g	100.00	96.80	118.00	116.00	116.80	122.90	129.00	125.90	126.00	129.60
WT. OF WATER,	g	11.30	8.80	15.20	14.00	18.20	20.30	23.70	25.60	26.70	22.90
WT. OF CAN,	g	15.70	22.30	17.60	24.90	21.60	16.00	26.40	16.70	23.90	18.90
WT. OF DRY SOIL,	g	84.30	74.50	100.40	91.10	95.20	106.90	102.60	109.20	102.10	110.70
WATER CONTENT,	%	13.40	11.81	15.14	15.37	19.12	18.99	23.10	23.44	26.15	20.69

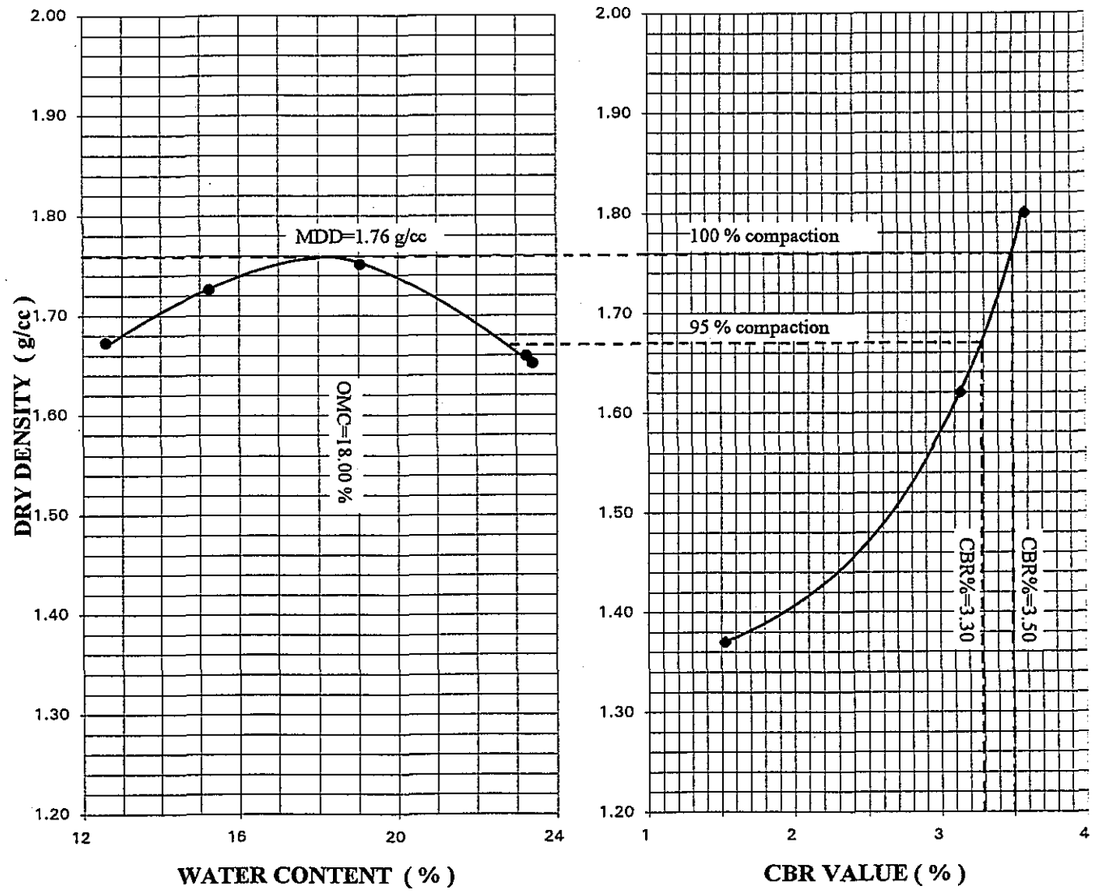
DENSITY DETERMINATION

AVE. WATER CONTENT,	%	12.61	15.25	19.05	23.27	23.42
WT. OF SOIL+MOLD,	g	10493	10723	10930	10844	10830
WT. OF MOLD,	g	6395	6395	6395	6395	6395
WT. OF SOIL IN MOLD,	g	4098	4328	4535	4449	4435
WET DENSITY,	g/cc	1.88	1.99	2.08	2.04	2.04
DRY DENSITY,	g/cc	1.67	1.73	1.75	1.66	1.65



MAXIMUM DRY DENSITY = 1.76 g/cc OPTIMUM MOISTURE CONTENT = 18.00 %

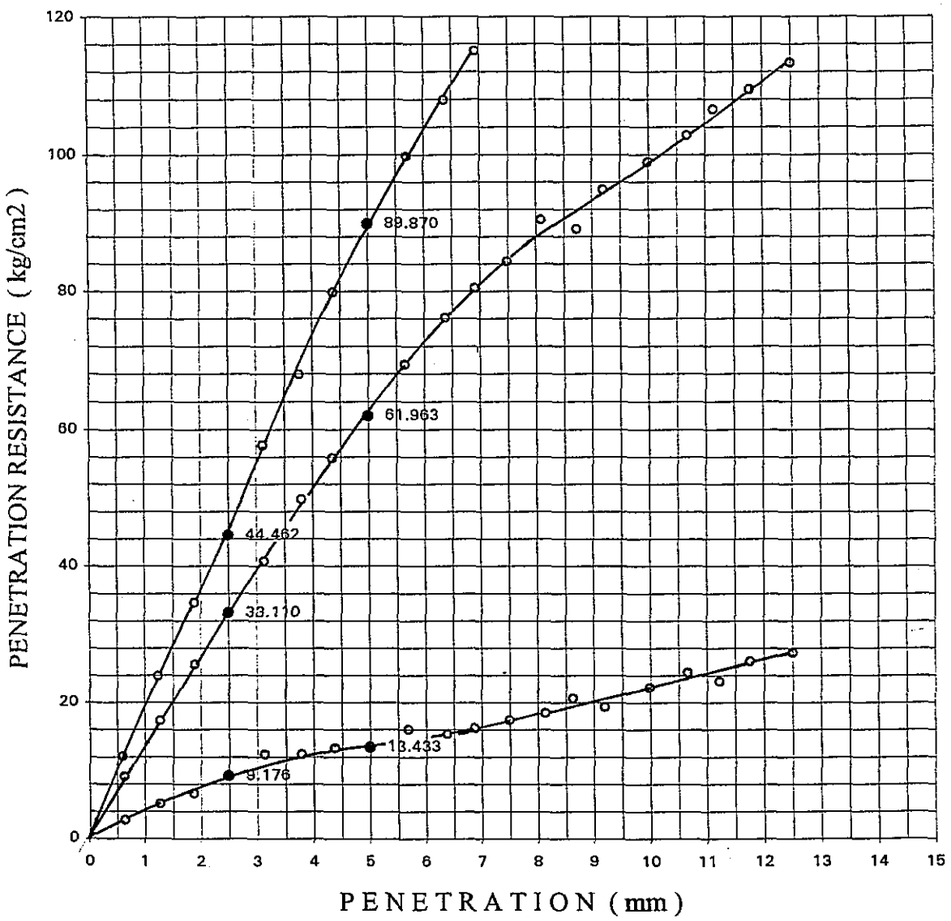
COMPACTION - CBR RELATION



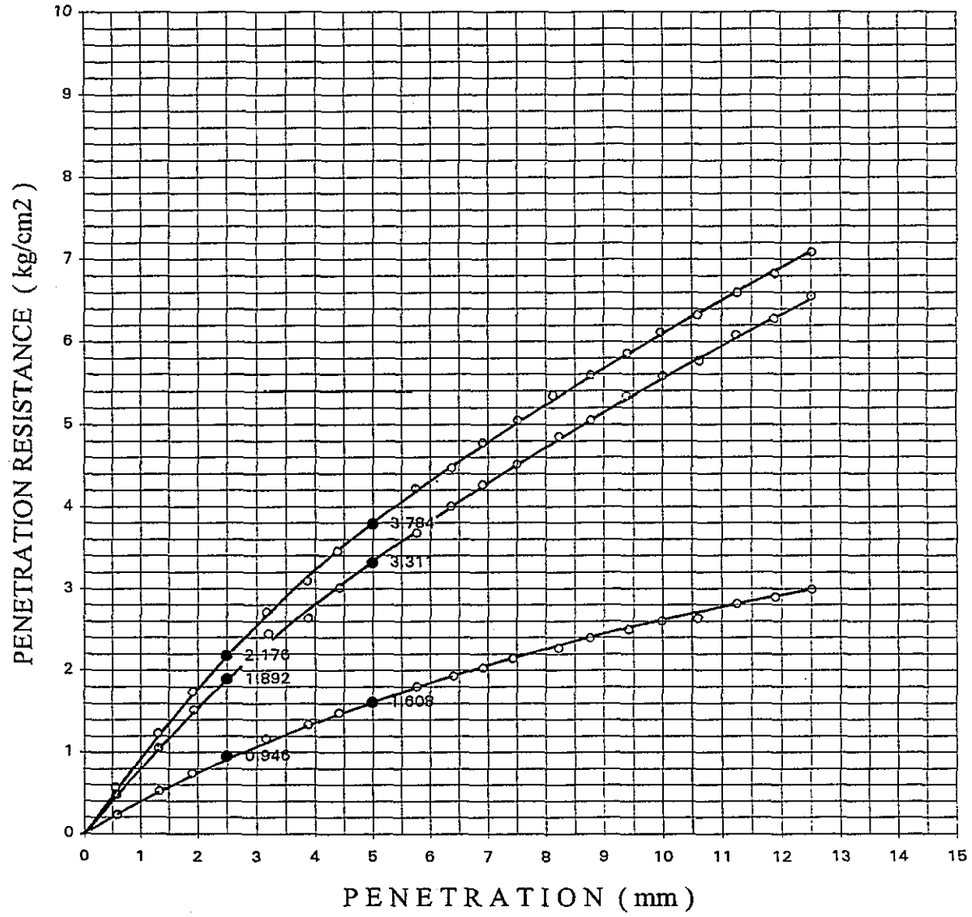
JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 84

CBR PENETRATION RESISTANCE GRAPH

SAMPLE NO:	DEPTH:	DATE TESTED:
TP-20 (Sta. 1413+300)	0.22-0.60	September 30, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy GRAVEL		A-1-b (0)



SAMPLE NO:	DEPTH:	DATE TESTED:
TP-20 (Sta. 1413+300)	0.60-1.50	OCTOBER 06, 1994
SAMPLE DESCRIPTION:		AASHTO CLASSIFICATION:
Brown sandy CLAY		A-7-5 (11)



JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT TITLE: FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY REHABILITATION PROJECT (MINDANAO SECTION)	SHEET CONTENTS: COMPACTION - CBR TEST RESULTS	SHEET NO.: P – 85