

Technical Assistance Consultant's Report

Project Number: 43309-013

December 2016

Cambodia: Provincial Roads Improvement Project (Financed by the Technical Assistance Special Fund)

Appendix F: DCP and Laboratory Test Results (part 2)

Prepared by

Korea Consultants International, in Association with Dainichi, Sambo and Hankuk Engineering Consultants, in sub-Association with MECC, SBK, KACE and SAWAC Cambodia

For the Ministry of Public Works and Transport and the Asian Development Bank

This consultant's report does not necessarily reflect the views of ADB or the Government concerned, and ADB and the Government cannot be held liable for its contents. (For project preparatory technical assistance: All the views expressed herein may not be incorporated into the proposed project's design.

Asian Development Bank





MINISTRY OF PUBLIC WORKS AND TRANSPORT KINGDOM OF CAMBODIA

ADB LoanNo.2839-CAM (SF) / ADB Loan No.8254-CAM

APPENDIX F **DCP AND LABORATORY TEST RESULTS**

FEASIBILITY STUDY ON SECOND PROVINCIAL ROADS IMPROVEMENT PROJECT

December 2016



9226B, Street 42P, Sangkat Planom Penis Thracy, Khan Sen Sek, Phacin Penis

Email: infosfemagkh.com M/P: 017-300-436 Website: www.maskh.com

SIEVE ANALYSIS

(AASHEO T27)

Study Team.

1. KOREA CONSULTANTS INTERNATIONAL (KCD)

Sub-consilling

S MERONG ADVANTECTI GROUP CO., LTD, IMAGE

Project :

CONSTRUCTION OF STREET AND STREET CONTROL OF STREET ASSOCIATION OF STREET AND STREET ASSOCIATION OF STREET ASS

Location

: PSG304000, PR 1524, Teak Phils, Kampung Chimang Offset

2-1.88 2.2 m.

Tested date

: 30-Aug-2016

Finished date : 30-Aug-2018 Coordinates : N = 310938/E =121964

TP No.

P 07

TP depth (mr.: 0.70 m.:

Total your of the will

1500.5 g

Sieve sixe (mm)	Mass of retaining (g)	Mass of possing (g)	Percent passing (%)
50.	0.0	1500.0	19000
337.5	0,0	1500.0	100.0
35	0(0)	1500.0	100.0
19	6.0	1300.00	100.0
19,5	4.0	1498.0	99.7
6,95	6.5	1480,3	59.3
20	116.0	1373.3	91.6
0.425	508.2	W(S, I	57.7
0.075	-445.6-	419.5	28.0

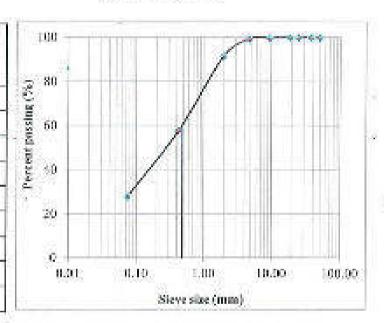


Table of percent of fine and course grained wil-

Type	Soil	Percent (%)
Fine	Clay and sit:	27.97
201 SECT 11	Sand	63.59
Coarse	Orașel	8.43

Remark:	
- Clay and Silt < 0.075mm	
= 0:075mm < Said < 2mm	
Gmwel ≥2	

2 Sep 2016

Tesed by

Calculated by



#226B, Street 42P, Sangkat Phnort Penh Thiney, Khan Sen Sak, Phnort Penh Limail: infess@magsh.com

M-P: 017-300-436 Website: www.mapkiy.com/

SPECIFIC GRAVITY

(ASTM D854-98):

Study Team

: KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant

: MERONG ADVANTECH GROUP CO., LTD. (MAG)

Project

I GROTECH NICAL SURVEY FOR AUTURE PROJECTION PROVINCIAL ROAD IMPROVINGENT PROJECT, PLASS III.

Location

PR30e-100, PR33, Koh Thorn, Kendul Province Offset

LHS 3.20 m

Tested date

: 50-Jug-2016 Pinished date: 10-Aug-2016 Coordinates

1 N =1350934 / E =424964

TP No. 112507 TP death full 0.79 m

Ž.	Test Number :	Ė	2	3.5
įs.	Pyanometer Number	C227	CH	0378
8	Mass of pythometer (g)	70.27	82.82	121.07
d	Mass of pycomoter and dry soil (g)	196.85	105.10	143.58
e e	Mass of oven-drice sed (g)	48.33	22,38	20.51
ľ	Mass of pyconmeter filled with water (g)	342.56	350.67	339.19
g .	Mass of pyconmeter filled with water and set (g)	372.24	344.86	352.19
h	Specific gravity $S(e^{+}(f,g))$	2.756	2.754	2.731
i	Average specific gravity		2.743	
i	Specific gravity at 28°c		2 737	

2-Sep-2016

Calculated by lessed by

Mr. Kheng Chinoe Mr. Heng Muyereng



4226B, Street 42P, Saugkat Phaem Perk Thracy, Klain Ser, Sek, Phaem Perk -Email: mfos@mapkh.com-M/P: 017-200-436; Website: www.magkh.com

MOISTURE CONTENT

(AASHTO T265)

: KOREA CONSULTANTS INTERNATIONAL (KCI) Study Team

Sub-consultant: MEKONG-ADVANTECH GROUP CO., LTD. (MAG):

Project :

GEOTECHNICAL SURVEY FOR FUTURE PROJECT DE PROVINCIAL 2040 IMPROVEMENT EXOLECT, PHASE III

Location

= PRO54000 PR1534, Teak Phys. Kumpany Chhrung - Officet

= RHS 2.00 m

Tested date ., 29-Aug-2016 Finished date .: 30-Aug-2016 Coordinates .: N=13535167 E 420907

TP No.

J. TP-08.

TP depth (ary), 0.79 or

	1000 11017 1000	And the second of the second o	
No	Description		
39	Can number:	116	65
2.	Mass of cars+west will (g)	39.13	109.46
30	Mass of centidey soil (3)	35.21	105.43
#3	Mass of carr(g)	22,53	22,60
2:	Mass of water (g)	2.94	4.03
6	Nias of dry sed (g)	69.55	82.83
30	Moisture contest (%)	34.62	4.07
K	Average meigure content (%)	- 4	04

2-Sep-2016

Tested by

Calculated by

Mr. Khoo, Carona

Mr. Hone, Mossrone

4226H, Street 42P, Sangkat Phnom Penh Thiney, Khan Sen Sek, Phnom Penh

Frank infraggragen cont. M65; 017-300-436 Website www.magkh.com

SIEVE ANALYSIS

(AASHTO T27):

Study Team : KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-roundfunt : MEKONG ADVANTECH GROUP CO., LTD. (MAG)

Project: 5 GEOTECHNICAL SURVEY FOR FUTURE PROJECT OF PROVINCIAL &CAD INDROVEMENT PROJECT, PHASICITY

Location : PK35 0000 PR4534 Took Phos. Kampong Chinang. Offset : R1/S 2.00 m

Tested date : 30-Aug 2016 Finished date : 36-Aug 2016 Coordinates : N=1333516.5E 420967

TP No. 1 19-28 TP depth (mr. 3.75 m.

Total mary of digestall.

1500.0 9

Serve size (mm)	Mass of rotaining a	Mass of passing (g)	Percent passing (%)
56	0.0	1500.0	100.0
237.50	0,0	150000	3000
2.5	71.7	1424.3	95.2
10	12.0	1396.3	93.1
9.5	481	1349.2	89.9
4.75	50.5	1292.7	86.2
23	23.6	3219.1	81.3
0.425	185.5	333/5	48.9
0.275	356.8	906.1	27.1

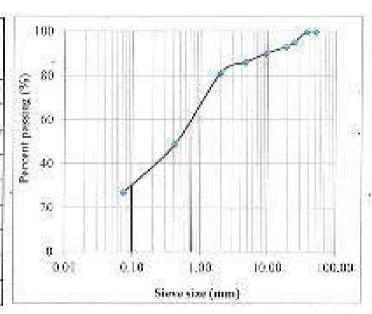


Table of percent of fine and everse grained soil

Type	Sol	Percent (%)
Fine	Clay and six	97.12
H-0383	Sand	54.15
Course	Gravel	38.73

Ramark:	
Clay and Bit ± 0.025mm	
0.075mm < Sand < 2mm	
Grand : 3	

2-Sep-2015

Total by Calculated by

Mr. Elving Cramer. Mr. Herg Muya eng.

#226B, Street 42P, Saugkat Planon Panh Thiney, Khan Sen Sok, Franom Penh Fmail: infespenagkh.com

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SPECIFIC GRAVITY

(ASUM D854-98).

Study Team

: KORRA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant

; MEKONG ADVANTECH GROUP COLLETO, (MAG):

Project.

. CEO (DOEMICAL SULVEY FOR EUTURE PROJECT OF PROVINCIAL ACAD (MIRETVICATES) PROJECT IN 6-3-11.

Lacation

PSJ2+100, rBJ894, Teak Phos. K45 Library Offset

22 RHS 200 m

Tested date

: 30-Aug-201) Finished date: 10-Aug-2016 Coordinates

SEP10508167 E-120697

TP No.

177-08

TP depth (m)

15:00.70 m

90	Test Samber		2	3.3
j)	Pycnometer Number	1064	0.50	C62
e:	Mass of pyonemeter (g)	\$2.65	73.35	86.25
130	Mass of pythometer and dry soil (g)	147.42	130.01	012025
1.6	Mass of even-dried soil (g)	× 64.77	26.66	95
T	Mass of pycnometer filled with water (g)	329.58	341.75	334.88
£	Mass of gyanometer filled with water and sail (g)	370.67	277.54	357.81
h	Specific gravity $\omega(e.t(f-g))$	2.733	2.715	2.720
15	Average specific gravity		2.717	
35	Specific gravity at 20°c		2.712	

2 Sep 2016

Tested by

Calculated by

Mr. Kheng Channe

Mr. Heng Muysreng.



h226D, Street 42P, Sangkat Phrtom Benh Thmey, Khan Sen Sok, Plinom Penh Email: infos⊠imagkh.com MrP: 017-300-436; Website: www.mngkh.com

MOISTURE CONTENT

(AASHIYO T265)

Study Team : KOREA CONSULTANTS INTERNATIONAL (KCt)

Sub-consultant: AIDKONG ADVANTECTI GROUP CO., LTD. (MAC)

Project S. GEORGIA SURVEY FOR FILTURE PROJECT OF 1500 PACIAL BIAD IMPROVEMENT MOUTHLY, PLASE (I

Location PK40+010-PR1534, TeacPiece Kompone Crimany Officer : LHS 2.50 m

Toxasi date = 29-Any-2016 | Unished date = 30-Any-2016 | Coordinates = 3 =1355243 / E =416139

TP No. TP 459 TP depth (m) : 0.70 m

No.	Description		
100	Communiscr	145	50
200	Mass of can two soil (g)	92.50	107.30
2	Mass of contary soil (p)	88.33	107.00
933	Mass of carrigi	2,49	22,51
2	Mass of Water (g)	4.57	430
5	Mesh of the will (a)	\$8.84	80.09
200	Moisture section (%)	532	5.34
37	Average moisture content (%)	3	33 20

24Sep 2016

Total by Calculated by

Mr. Kitung Chaine Mussmang

#226B; Street 42P, Sangket Phitom Penh Throcy, Kiton Sen Sck. Phitom Penh

Email: infos@megkh.com xt/P: 017-300-436 Website: www.mogkh.com

SIEVE ANALYSIS

(AASHDO 127)

Sub-condition : MEXONG ADVANTECH GROUP CO., LTD. (MAG)

Project GEOTECHNICAL SHEVEY FOR RUTHREPROJECT OF PROVISCIAL ROAD IMPROVIMENT PROJECT, PHASE II

Location : PK40+000, PR1534, Tank Place Kampony Caloung Officer : 1.HS 2.00 m.

Tested date : 30-Arg-2015 Pinished date : 30-Arg-2015 Coordinates : A =13557037 E =116189

TP No. 1 TP-06 TP depth (mr. 0.20 m

Total mary of dry roll

1500.0

And the same of th				
Sieve size (mm)	Mass of retaining (a)	Mass of passing (g)	Percent passing (%)	
50	D.O.	1500.0	100.0	
37.5	0.0	4500.0	100.5	
29	0.0	1500.0	100%	
19	QcD _{est}	25000	100.0	
9.5	5.0	1500.0	150.0	
4,75	0.2	1438.3	99.3	
2	101.6	(377.2	91.5	
0.425	3645.4	730.8	43.3	
0.075	329.3	410.5	27.4	

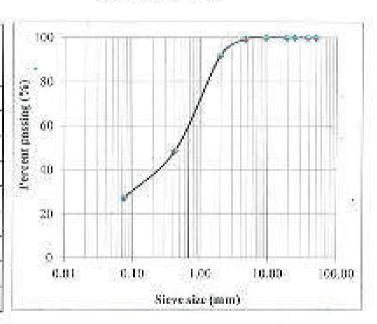


Table of persons of fine and course grained soil.

27.37
64.45
0.10

Remark:	
- Clay and Silt < 0.075mm	
= 0.075mm < Sand < Jum	
+ Gravel >2	

2-Sept 2016

Calculated by

Teast by

Mr. Kheng Channe

Mr. Ibong Moyarong



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SPECIFIC GRAVITY

(ASTM D854-98):

Study Team KOREA CONSULTANTS INTERNATIONAL (KCD)

Sub-consultant : MERONO ADVANTECTI GUOUP CO., LTD. (MAG)

Project — Берлистика, викусь вск интеревроковат со изрушера, комплению и городит, въздат

Execution : PK40-000, PKL534, Tank Phys.; K.P. Chrong Offset : 121S 2 00 m

Testral date : 35-20-p-2017 Finished date : 30-Aug-2006 Coordinates : N = 13557-3 / E = 118189

TP No. : TP-00 TP depth (m) : 0.79 m

(8)	Test Number	- 10	.2	3
38	Pyenometer Number	C28	CR	C13
(4)	Mass of pychometer (g)	69.93	315.45	83.92
30	Mass of pyenometer and dry sail (g)	138.10	132.59	105.34
é	Mass of oven direct soil (g)	68.38	17.34	21.42
f	Mass of pyanometer filled with water (g)	336.4	320.06	331.88
g	Mass of pycnometer filled with water and soil (g)	. 279.80	331.52	345.48
h	Specific gravity 8% (Fig.)).	2.737	2.745	2.730
	Average specific gravity.	2.742		
1	Specific gravity at 20°c	2.737		

2 Sep 2016

Tanted by Coford and by

Mr. Klieng Channe Mr. Heng Muya eng.



₹226B, Street 42P, Sangkat Photon Pauli Thungy, Khan Sen Suk, Phrom Perin

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MOISTURE CONTENT

(AASHTO T265)

Study Team ... ROREA CONSULTANTS INTERNATIONAL (RCI)

Sub-remailmer: MERONG ADVANTECH GROUP CO., LTD. (MAG).

Project: : GEOTECHNICAL SURVEY FOR FUTURE PROJECT OF PROVINCIAL BOAD MARKOVEMENT PROJECT, PETASE II

Location : PK45-000, PK1994, Tesk Plos, Europoing Chinary Offset : RHS 2.50 m

Tested date : 29-Aug-2016 Finished date : 30-Aug-2016 Coordinates : N 1358224 / E 411945

TP No. :: TP-10 TP depth (iii) :: 0:20 iii

2460	Descripcion		
35	Can number	(30)	87
7.	Mass of a universality)	107.85	84.75
1	Mass of cant dry roll (g)	104:15	92,16
88	Mass of can (a)	22.29	22,67
5	Mass of water (g)	350	2.59
600	Mass of cry soil (g)	51.85	59,49
22	Moisture content (%)	4.52	4,35
8	Average maisture content (%)	- 1	64

2-Sep-2016

Tested by Calabbra: by

Mr. Rheng Claime Ale, Heng Mayaning

A226D, Street 42P, Sangkat Phnoin Penh Thrney, Khan San Suk, Phnom Penh

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SIEVE ANALYSIS

(AASHTO T27)

Study Team.

; KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-rensultant

: MEKONG ADVANTECH GROUP CO., LTD. (MAG).

Project

GROTECHNICAL SURVEY FOR PUTUKE PROJECT OF PROVINCIAL READ INDICOVERIENT PROJECT; PLOSE II

Location

: PK451000, PR1534, Teak Phos. Kampung Chanang - Offset

RHS 2:20 m;

Tested date

c. 30-Aug-20161

Finished date 1 30-2019-2016 Coopdinates : N 338224 / E 411945 -

TP No.

TP-10.

Tir depth (m. 10.7% or

Total mass of dry soil

 $1500.0 \pm p$

Sleve size (mm)	Mass of refaining igl	Mass of passing (g)	Percent passing (%)
St	0.0	1505.01	100.0
37.5	0.0	1500.0	10000
25	0.0	1800.0	Jenin
19:	0.0	1500.0	10000
9.5	2.5	1497.5	99.3
4.75	49.3	1447.8	96.5
20.	339.5	1103.3	75.9
0.425	547.9	360.4	37.4
0.075	288.6	274.8	18.3

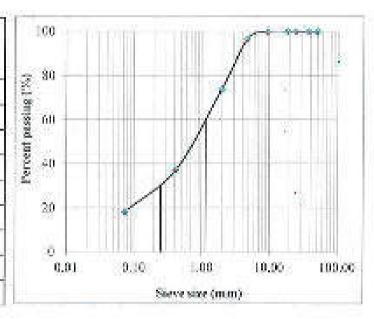


Table of percent of flue and course grained soil

Тура	Soft	Pasent (%)
Fine	Clay and sile.	18.72
20000	Sand	55.57
Coarse	Citated	26,11

Romarke	
Cky and Sit < 0.035mm	
= 0.075mm < Sand < 2mm	
- Greet >2	

2-Sep-2018.

Chiminted by:

Mr. Kheng Chaine

To sed by

Mr. Heng Mayareng

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Website: www.magkh.com

SPECIFIC GRAVITY

(ASTM D854-98)

Study Team

. KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant

: MEKONG ADVANTECH GROUP CO., LTD. (MAG)

Project

SBOTECHSKOVE SURVEY FOR BUTURE FROJECT OF PROVINCIAL ROAD IMPROVEMENT FROJECT, PHASE III.

Location

PK45+000, PR1534, Teak Phos., K.P. Chha. Offset.

... RHS 2.50 m

Tested date

Control of the Contro

: 30 Aug. 2016 Finished date : 16-Aug. 2016 Coordinates

:: N =1358224 / E =411945

TP No.

2 178 10

TP depth (in)

: 0.70 m (Sampling depth gownward)

ž.	Fest Number	L:	2	307
35	Pyanometer Number	C35	C12	C16
ic.	Mass of pycnometer (g)	70,77	99.17	89.3
d	Mass of pyenometer and dry soil (g)	129.34	117,03	123.74
ď	Mass of even-dried soil (g)	SB.57	17.86	34.34
ř ř	Mass of pyenometer filled with water (g)	381.76	336.76	336.92
e	Mass of pyenometer fitted with water and asit(g)	388.95	348.12	358.70
h	Specific gravity $S'(e+(3\cdot g))$	2.739	2,748	2.034
i	Average specific gravity		3.741	
i	Specific gravity at 20°c.	2.733		

2-Sep-2016.

Tesped by

Calculated by

Mr. Kheng Channa

Mr. Henry Mayaring



#226B, Street 42P, Songket Phesorn Penh Thunsy, Khan Sen Sok, Planorn Penh Emori: Inforightnockh.com

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MOISTURE CONTENT:

(AASHTO T265)

Study Team : KOREA CONSCITANTS INTERNATIONAL (KCI)

Sub-consultant: MEKONG ADVANTECH GROUP CO., LTD. BAACC

Project SCOTECHNICAL SURVEY FOR FUTURE PROJECT OF SCOVERCIAL YOAD IMPROVEMENT PROJECT, PLOSSE III

Lecotion : PS50+500, 991574, Teak Phos. Kampung Othrang : Offset : LHS 2.50 m

Tested date : 29-Aug-2016 Finished date : 30-Aug-2016 Coordinates : N=13614927 E=408197

TP No. : TP-11 TP depth (m) = 0.30 m

No	Description	- CONTRACTOR STORMAN	
100	Can number	- 55	73
2	Mass of contract so F(g)	85.46	106.42
30	Mass of cantidry soil (g)	91,50	100.85
53	Mass of car (g)	22.76	12.56
5	Mileson of Aceter (g)	3.66	5.17
6	Mass of day soil (g)	59.04	78.19
30	Moisture omtest (%).	6,20	6.81
8	Avarage meisture content (%)		d1

2-Sep-2016

Totally Calculated is

Mr. Khang Channe Mr. Hong Move on a



V226-B., Street 42P., Sangkat Phrom Penh Thinay, Khan Sen Sok, Phrom Penh

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SIEVE ANALYSIS

(AASHIO III7):

Study Team : KOREA CONST.

: KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultruit

: MESONG ADVANTECH GRUUP CO., LTD. (MAG)

Project

GLOTUC INICAL SURVEY FOR PUTERIC PRODUCT OF PROVINCIAL BOAD IMPROVEMENT PROJECT, PHASE II.

Location

: PK50+000, PR23, Koh Thom, Kandal Province:

Offset

3-1.418-2.30 m -

Tested date

: 30-Aug-2016

Finished date : 30-Aug-2016 Coordinates ; N=136(492 / E=408197)

TP No.

: TP-11

TP depth (m: 0.70 m

Found means of they world

1500.00 gr

Sieve sise (mm)	Mass of retaining (a)	Mass of passing (a)	Person passing (55)
50	0.0	0500.0	10070
37.3	0.0	1,900.0	100.0
25	0.9	1500.0	10000
19	0.0	1500.0	160.0
9.5	- 1931	1481.0	98.7
4.75	63-6	1417.4	94.5
2	177.00	1240.41	82.7
0.425	33.8	1206.6	\$0.4
0.075	269.0	937.6	62.5

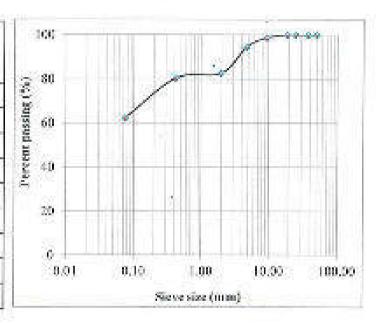


Table of percent of fine and course grained will

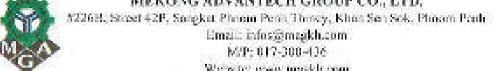
Type	Soi	Percent (%)
Flor	Oby- and silt	62,30
Coarse	Sand	20.79
	Gravel	17.31

Remark:	
Cky and Sit < 0.078mm	
+ 0.07 Smort < Sand < 2 mas	
· financi >2	

2-Sep-2016

Testal by

Calculated by



Email: infos@magkh.com M/P: 017-300-136 Website: www.modelr.com

SPECIFIC GRAVITY

(ASTM D854-98)

Study Team

FROREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant

MEXONG ADVANTECH GROUP CO., LTD. (MAG):

Project

GROTECHNICAL SURVEY FOR PUTURE PROJECT OF PROVINCIAL BOND INTROOPEMENT PROJECT, PHASE III.

Location

= PK50+000, PR 234, Teol/Phos, K.P. Chimna Officel

2. LHS 2.30 m.

Tested date

: 01-Sep-2016 Finished date: 01-Sep-2016 Coundinates

k N = 1361492 / E 408197

TP No.

STORES

TP death (m) 43. 30.70 mg

n.	Test Number	8d I	2	123
b	Pycnometer Number	C13	8	0.0
V.	Mass of pycnometer (g)	83,94	45.83	110.52
ď	Mass of pyenometer and dry soil (g)	1331	65.34	142.91
ě.	Mass of oven-dried soil (g)	49,06	19,51 -	32.39
ř	Mass of pyenometer lifted with water (e)	331/45	153.25	338.27
8	Mass of pyenometer filled with water and soil (g)	362.55	165.57	3.58.77
n	Specific growty e/(e+(f-g))	2,733	2.713	2,724
i.	Average specific gravity		2.719	
	Specific gravity at 20%	2713		

2-Sep-2016;

Tested by:

Calculated by

Mr. Khang Clamus

Mr. Heng Movering



#226B, Street 42P, Sangkat Phucen Penh Thiney, Khao Sen Sak, Phocus Penh

Email: infes@magkh.com M/P: 017-300-436; Website: www.magkh.com

MOISTURE CONTENT

(AASHTO 1265)

Study Team : KOREA CONSULTANTS IMTERNATIONAL (KCI)

Sub-resident: MEKONG ADVANTECH GROUP CD, LTD: (MAGE)

Project GEOTICE MICAL SURVEY CORE FITTURE PROJECTION PROVINCIAL ROAD INTERCALMENT PROJECT, PHASE U

Location : PKSS1000, PR1534, Kimber, Purset Province: Offset : RHS 1.50 m.

Tested date = 28 Aug 2016 Finished date = 10 Aug 2016 | Countinates = N =13649017E =404323

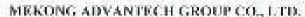
TP No. 1 TF-12 TP depth (m) 1 0.79 in

No	Description		
ti.	Can number	75	151
2	Mass of eartwes sail (g)	10 85.11	20.01
3	Mass of can (dry soir (g))	R1.75	\$5.01
4%	Nass of car (g)	32.96	22,53
8/	Mass of water (ig)	3.36	4,00
6	None of dry soil (g)	58.79	62,93
93	Moisture costem (%)	5.72	6.40
8	Average moisture content (%)	ů	06

2-Sep 2016

Tested by Calculated by

Mr. Khang Chaure Mr. Heng Mugsrenp





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ATTERBERG LIMITS

(AASHTO T89 and T90).

Study Team KOREA CONSCILIANTS INTERNATIONAL (KCI)

Sub-consultant ... MEXONG ADVANTECT/CROUP CO., LTD. (MAG):

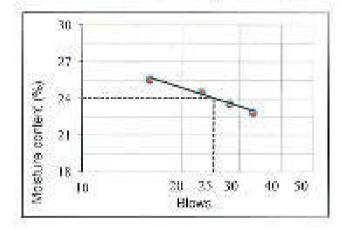
Project : 11 DELICAL SURVEY FOR BUTURG PARINCT DEPROVED ALROYS DEPROVED PROJECT, PRASE |

Location : PK55+000, PR1534, Kiokov, Pursut Province Officer : RHS 1.50 m

Tested date : 31-Atj-2016 Finished date: 1-Sep-2016 Coordinates : N = 136400174; = 403323

TP No. : 10-12 TP denth (no : 0.70 m

			(755)	e time			
Number of blows	80 8	33	28	23	16	Photi	2 Foot
Can comber		811	13	195	174	78	175
Mass of card world	(g)	15,72	36.56	33.33	38.22	31.49	30.00
Mass of carrely soil	fg2	13.23	34.00	34.46	18.08	30.21	28.97
Viss. of can	(9)	22.36	22,74	22,78	22.67	22.61	22.60
Mass of water	(8)	2.49	2,66	2.87	3,17	1.28	1.03
Mass of dry soil	(90)	10.87	11.26	11.88	12.3R	7.58	08,27
Moisture content	(%)	22.91	23.62	24.37	25.6	15.89	16.17
Average moisture content	(26)	22.91	23.62	24.57	23.61	338	33



Elquid finit (E.E.) N	24.06
Plastic limit (PL)%	16.53
Mastic index (PY)	7.53

Remarks:

PL - Plastic Limit LL - Liquid Limit:

Pl = Plastic Index.

AASHTO: American Association of State

Highway and Transport Officials

2-Sep-2016

Culculated by

Tested by

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SIEVE ANALYSIS

(AASHTO J27)

Study Team : KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-rossulton : MEKONG ADVANTECH GROUP CO., LTD. (MACC).

Project GEOTECHNICAL SURVEY FOR FUTURE PROJECT OF PROVINCIAL ROAD IMPROVEMENT PROJECT, PRASE II

Location : 98551000 PR0534 Review, Pursui Province Office : R118 1.20 m

Tested date : 30-Aug-2016 Finished date : 50-Aug-2016 Coordinates : N | 364501 / E | 404323

TP No. : TP-12 TP depth (nor 3.7% or

Total mars of dry soil 1500.0 g

Slave size (mm)	Mass of retaining fgl	Mass of passing (g) _o	Percent passing (%)	
90	0.0	1500.0	150.0 100.0	
37.5	0.0	1500.0		
25	g.p.g	1500.0	1000	
19	0.0 12.4	1500.0	100.0	
9.5		- 1487,6	99.2 97.8	
4.35	20.3	1467.2		
2.7	87.9	1379.4	92.0	
0.425	165.8	910.6	60.7	
0.075	346.7	563.9	37.6	

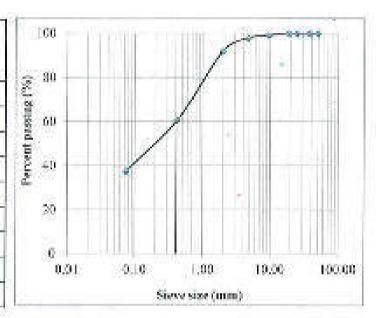


Table of percent of time and course grained soft

Тура	Soil	Percent (%)		
Fine: Chy and sit.		32.59		
Q2707031	Sord	5137		
Cooms	Cravel	3.04		

NOS.	
Day and Sit < 0.00 Smm	
0.075mm < Sand < 2mm	
Gavel >2	

2-5 cp-2016.

Calculated by

Tesed by

Mr. Kheng Channe -

Mr. Heng Mayoreng

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Website, www.magkh.com.

SPECIFIC GRAVITY

(ASTM D854-98).

Study Team

: KOREA CONSULTANTS INTERNACIONAL (ROD

Sub-consultant.

: MEKONG ABYANDOD GROUP COLLETE. (MAC) 1

Project

- SECTION PROVIDED FOR PRINTING PRODUCTION PROVINCIAL ROAD IMPROVIDED PROJECT PRESS, II.

Location.

PKS51000, PB1834, Krokur, Pursat Provinc Offset.

1. RHS 150 m.

Tissaed date

: 01-Sep-2015 Finished data: 01-Sep-2016 Coordinates

+ ... N = 1364801776 = 404323.

TP No.

SHT38120

TP depth (m):

m:00700m

3.	Test Number	1	2	3
ją.	Pyenemeter Number	530	93)	9.0
ė:	Mass of pychometer (g)	66,72	43.34	40.64
d.	Mass of pychameter and dry soil (g).	130.95	67.88	67.59
ë	Mass of even-direct soci (g)	54.23	24.64	26.95
f	Mass of pythometer filled with water (g)	346.67	142.11	140.09
ķ.	Mass of pyconmeter filled with water and scil (g)	187.48	157.77 -	157.20
h	Specific gravity $\phi(ef(f \cdot g))$	2.743	2.744	2.739
	Average specific gravity		2.741	
ĵ	Sperific gravity at 20°c		2,736	

2 Sec 2016

Tested by

Calculated by

Mr. Kheng Crasure

Mr. Heng Maysreng



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Email: intesjemagkh.com

M/P: 617-300-436; Website, www.mapkh.com.

MOISTURE CONTENT

(AASHTO T265)

Study Train : KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant; MEKONG ADVANTECTI GROUP CO., LTD. (MAG).

Project GEOGRAPHEAUSDRYRY FOR DELIGHBERGULT OF PROVINCIAL ROLD IMPROVEMENT PROBLEM PROSECT

Location : PK60+DB, PR1534, Kroker, Pursut Province Offset : LHS 2.50 m

Tested date 2 29-Aug-2016 Etnished date 2 39-Aug-2016 Coordinates 4 N =13671347 E =339952

TP No. 7 (P-13 TP depth (m) : 0.70 m

No.	Description		
T.	Connuder	N)	22
2	Mass of can twet soil (g)	97.61	103.43
3.	Mass of courtary soil (a)	85.38	93.69
<u>#8</u>	Miss of ion (g)	21.83	32.65
S	Mass of water (g)	9.25	9,74
6	Mass of dry ted (g)	66.73	21.04
70:	Moisture current (%)	13.85	:19:21
8	Average meisture content (%)	13	77

2-Sep-2016

Tested by Calculated by

Mr. Kheng Citanus Mr. Heng Muysreng





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ATTERBERG LIMITS

CAASHTO T89 and T90)

Study Team 2: KOREA CONSULTANTS INTERNATIONAL (ICC).

Sub-consultant : MEKONG ADVANTECTI GROUP CO., LTD. (MAC)

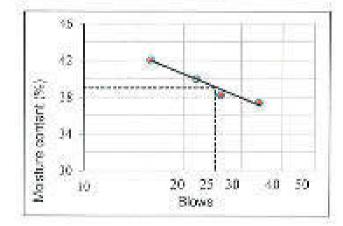
Project GOTTET PRICAL SURVEY FOR PLETURE PROJECT OF PROVIDENT ROAD IMPROVEMENT PROJECT, PERSEIT

Lansition PK50+000, PR1534, Kirdon, Pursat Province: Offige 2, LHS 2,50 m.

Tested date : F1-Aug-2016 | Mnished date : T-Sep-2016 | Coordinates : N = 13671347 E = 389952

TP No. 12-13 TP depth (m) : 0:70 m

Number of blows	This care		Liquid Emit			(Phote limit	
Number of Biows		34	28	22	16	CHOSE GEOL	
Connantser		170	- 8	52	193	120	178
Mass of con-wet soil	(g)	35,32	36.42	36.78	37.34	34.82	30.37
Mass of country soil	17.690	31.85	31.51	32.67	33,64	30.27	29.05
Mass of can	(3)	22.62	22.30	22.40	22,73	22.68	32,54
Massefwater	(6)	3.46	3.91	4.71	4.34	1.88	1,72
Mass of dry soil	(3)	0.24	10,21	10.27	10.21	7.59	0.51
Moisture content	(28)	37,45	34.30	40.02	42.10	20,42	20.28
Average moisture content	(56)	37,43	33.30	40.02	42.10	20	35



39.00		
20.36		
18.65		
	20.35	

Remarks

PL = Plastic Limit; LL = Liquid Limit;

PI = Plastic Index

AASHTU: American Association of State

Highway and Tomsport Officials

2-Sup-2016

Testol by Calculated by

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SIEVE ANALYSIS

(AASHTO T27)

Study Team KOREA CONSULTANTS INTERNATIONAL (RCI)

Sub-consultan MEKONG ADVANTECH GROUP CO., LTD. (MAG).

Project 060TECHNICA: SUBVEY FOR FUTURE PROJECT OF PROVINCIAL SOAD (SHEGVENTER) PROJECT, PLAST (I

Location : PK60 000, PR1554, Krobor, Pursat Prevince Offset LHS 2.50 m

Tested date : 30-Aug-2015 Finished date : 30-Aug-2016 Countinates : N=13621347E=199652

FP No. : TP-13 TP depth (m: 0.70 m

Yotal most of dry soil.

1500.0 8

Steve stee (2000)	Mass of retaining (2)	Mass of possing (2)	Percent passing (%)	
50	6.0	1800.0	100,0 100,0 100,0 100,0	
373	0.0	1500.0		
25	-0.0	1800.0		
19	6.0	1500.0		
9.5	5.7	1494.3	99.6	
4.75	15.4	1478.0	98.6	
20	106.0	1320.6	9430	
0,623	218.0	1152.0	76.9	
0.075	213.7	940.3	52,7	

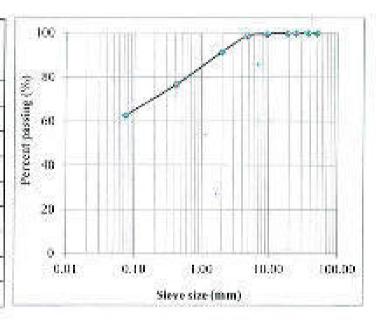


Table of percent of fine and course grained soil

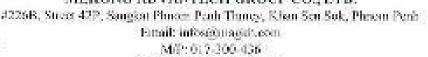
Type Soil		Person (%)	
Fine Clay and silf		02.69	
Coarse	Sand	28.69	
	Good	8.60	

Rewark.	
Clay and Silt < 0.075 mm	
$= 0.075 mm \leq Sand \leq 2mm$	
- Grayel >2	

2-Sep (2016)

Tiesed by Chile during by

Mr. Kheng Chame See Heng Mayering



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SPECIFIC GRAVITY

(ASTM D854-98)

Study Team

: KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant:

: MEKONG ADVANITICH GROUP COLLETTI: (MAG)

Project

FOR DOMECAL SOCKEY FOR FUTURE PROJECT OF PROVIDED ROAD IMPROVINGED PROJECT. PHARTO

Limition

, PK60+D00 PR1534, Knoker, Press Prezint Officet

1. LHS 2.80 m.

Tested date

: 01-Sep-2016 Finished date : 01-Sep-2016 Countinates -

N=13671347E=399983

TP No.

1. TP-13

TP depth (m)

0.70 m

a:	Test Number	Ú	2	3
b	Pyonometer Number	£19	C34	C13
K.	Mass of pycnometer (g)	7.033	78.08	83.92
d	Mass of pycnometer and dry soil (g)	122.84	133.67	112.01
W.	Mass of even-dried soil (g)	51.31	5139	28.09
Ť	Mass of pychometer filled with water (g)	319:77	245.67	331,88
5	Mass of generator filled with water and soil (g)	352.25	186.85	349.64
ñ	Specific gravity $\varphi(er(6g))$	2.725	2,724	2.719
1	Average specific gravity		2.721	
j.	Specific gravity at 20°c		2,716	

2-Sep-2016

Tested by

Calculated by

Mr. Khing Charne

Mr. Heng Mussreng



96

MEKONG ADVANTECH GROUP CO., LTD.

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M/P: 017-300-436; Website: www.magkh.com

MOISTURE CONTENT:

(AASHTO T265)

Study Term :: KOREA CONSULTANTS INTERNACIONAL (EC)

Sale-consultant: MEKONG ADVANTECH GROUP CO., LTD. (MAG)

Project SEDMECHNICAL SURVEY FOR THE REPRESENTATION OF BOARD INTEROCEMENT PROJECT, PHASE II.

Location > PK731000, PR1314, Kreker, Pursul Province: Offset + 1.118 2.20 m.

Tested date : 29-Aug-2010 Finished date : 30-Aug-2016 Coordinates : N=1280861.7E=387612

TP No. 1 TP-14 TP depth (m): 0.70 m

No	Description				
1	On number	189	581		
2	Mass of construct soil (g)	96,79	\$6.46		
30	Mass of surf dry soil (g)	92.18	94.19		
40	Mass of carr(g)	22.57	22.23		
6	Mips of water (g)	2.44	2.27		
6.	Mass of dry soil (g)	74.78	271.98		
7	Nicisture content (N/)	3,26	3.15		
6	Average moisture content (%)	3.	21		

2 Sep 2016

Tested by Calculated by

Mr. Kheng Channe Mr. Heng Mussreng





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Emeil: infos@magkl.com MP: 617-300-436 Wobsite: www.magkl.com

SIEVE ANALYSIS

(AASHTO T27)

Study Train KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-constituit : MEXCONG ADVANTECH GROUP, CO., LTD. (MAG)

Project GEOTECHNICAL SURVEY FOR FUTURE PROJECT OF PROVINCIAL ROAD IMPROVEMENT PROJECT, PHASE III

Lucation : PK75-000, PK1534, Krosser, Pursat Province Offset : LUS 2:20 m.

Tested date 1, 30 Aug 2015 Philished date 1, 30 Aug 2015 Coordinates 1, N = 1380861 / E = 387612

TP No. : TP-14 TP depth on: 0.20 m

Foral mark of dry sall-

 $1300.0 \, \text{s} \, \text{g}^{-1}$

Stave stop (mm)	Mass of retaining (g)	Muss of passing (g)	Percent passing (%)	
50	0.0	1500.0	(00.0)	
37.5	0.0	1500.70	100,0	
25	5.0	1500.0	100.0	
19	5.0	\$00.0	100.0	
- 93	6.4	1493.6	99,5	
4.75	3.7	1487.93	99.2	
2	21050	1366.4	97.8	
0.425	334.1	1132.3	75,3	
0.075	789.2	343.1	22.9	

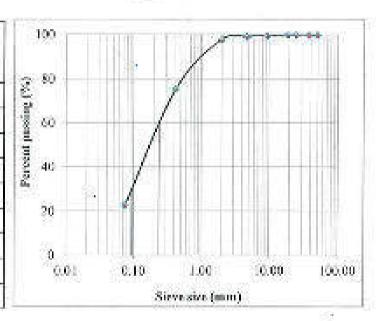


Table of percent of fine and coarse grained soil.

Гурс	Soil	Percent (%) 23.87	
Fine	Clay and all:		
Coarse	Sand	74.89	
	Ciravel	2,24	

Remark:	
Clay and Sik ≤ 0.075mm.	
0.035mm < Sand < 2mm	
Gravel >2	

2.325-2016

Tested by Calculated by

Mr. Heng Muyareng

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Website www.magkb.com

SPECIFIC GRAVITY

(ASEM D854-98)

Study Team : KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant : MEKONG ADVANTECH GROUP CO., LTD. (MAC) :

Репјат овопесника вокуму кон возика изовет от имомисов, кодо имикомимем иможет, дъзент

Location : PK75+009, PR1534, Kroker, Preset Provinc Offset 1 LHS 2.20 m

Twood date : 01-Sep-2015 Finished date : 01-Sep-2016 Coordinates : N - 1380851 / E - 387612

TP No. 1 TP-14 TP depth (m) 0.70 m

9.	Test Number	Ü	2	3.3
13.	Fyenometer Number	0.60	- 3	Al-
(2)	Mass of pychometer (g)	72.98	43.2	40.70
d	Mass of pycnomeser and dry soil (g)	129.02	65.47	65,37
e	Mass of over-dried soil (g)	56.34	22.27	23.67
f.	Mass of pycnomoter filled with water (g)	320.53	142.0	139.96
10	Mass of pychomoter filled with water and seil (g)	356,15	4 156 t8	154.93
h	Specific gravity $\phi(\mathrm{ef}(\beta g))$	2.719	2.716	2.721
j.	Average specific gravity		2.718	
J .	Specific gravity at 20°c		2.713	
	The state of the s			

2-Sep-2016

Tested by Calculated by

Mr. Kheng Channe

Wir. Heng Muysterg.



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MOISTURE CONTENT

(AASHTO T265)

Study Team : KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consultant: MEKONG ADVANTECH GROUP CO., LTD. (MAG):

Project

SPOTECHNICAL SURVEY FOR PUT THE PROJECT OF PROVINCIAL AGAIN (MEROVEMENT PROJECT, PHASE II

Lacotton

: PK901000, PR1534, Krokor, Pursat Province

RHS 0.5 m Office

Tested date

; 29 Aug 2016 Finished date : 50 Aug 2016 Coordinates | N=1383122 / E=387324

TP No.

x 17-15

TP depth (m) = 0.70 m

Mo.	Description		
1	Can rember	280	39
2	Mass of eact-wet soil (g)	87.90	102.50
3 6	(days of contdry with (g)	85.07	89.34
4	Mass of con (g)	22.49	22.68
8	Mass of water (g)	0.50	3.46
6	Mans of thy sod (g)	62.58	76.66
7	Moisture content (%)	4.03	4.12
8	Average moisture content (%)	a,	97

2-Sep-2016

Tested by

Cakabatad by

Mr. Khang Channe

Mr. Horg Maysrenge





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ATTERBERG LIMITS

(AASHTO T89 and T90)

Study Team : KOREA CONSULTANTS INTERNATIONAL (KET)

Sub-consultant : MEKONG ADVANTECH GROUP CO., LTD. (MAG)

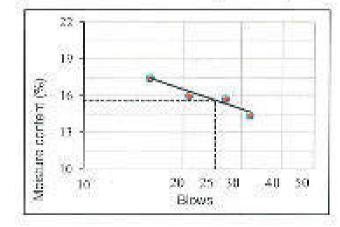
Project 0000 TOURICAL SUBJECT FOR BUT DICE PRODUCT OF PROVINCIAL ROAD IMPROVEMENT PROJECT PRESENT

Location PK30 C00, PRI534, Kroker, Phrsar Province Offset ; RHS 0.80 m

Tested date ... 11-Aug-2016 Finished date; 1-Sep-2016 Coordinates : N = \$38\$\$1227\$\mathbb{R} = 387324\$.

TP No. : TP-15 TP depth (m) : 0.70 m

Number of bloos	Liquid linit		ni.	Plastic limb			
ACTION ACTIONS		5) 2)	27	21	16	T RESCRIBE	
Cen maniser		23	3	98	3	28	11/
Vbio. of carried soil	(305)	3615	35.85	38.28	39.15	31.67	30031
Mars of can dry soil	(3)	31.43	35.74	36.12	36,70	30.17	29.74
Mass of can	(9)	22.67	22.30	22.67	23.66	22.42	22.63
States of Water	(2)	1.70	2,12	2:15	2.42	0.340	0.77
Mass of degracit	(2)	11.78	13.44	13.42	14.04	8.35	7.11
Moisture content	.0%	14.43	15.57	+ 16.06	19,45	10:28	10.83
Average moisture operent	$\mathcal{C}(N_i)$	14.43	15,37	16.06	17.45	10	30



Liquid limit (CC 7/6	15.65	
Plastic limit (PL)%	10,50	
Plastic index (PF)	4.85	

Remark:

Pl. - Placie Limit; LL - Liquid Limit;

PI - Plyatic Index

AASTUTO: American Association of State

Highway and Transport Officials.

2 Sep 2016

Calculated by

Tested by

Mr. Kheng Change

Mr. Heng Mayarang

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SIEVE ANALYSIS

(AASHED T27)

Study Team : KOREA CONSULTANTS INTERNATIONAL (KCI)

Sub-consident : MERONG ADVANTECH GROUP CO., LTD. (MAG)

Project GROTECUMICAL SURVEY FOR FUTURE PROJECT OF PROVINCIAL ROAD BARROWEMENT PROJECT, PLASE II

Location : PK804000, PK1534, Kroker, Pured Province Offset : RHS 0.8 or

Tested date : 30-Aug-2016 Finished date : 30-Aug-2016 Coordinates : N =1585122 / E =187624

TP No. : TP-15 TP depth (or: 0.70 m)

Total man of dry soil

4500.0 g

Sieve sizze (mm)	Mass of retaining fel _	Mass of passing let	Percent proving (%)
50	5.0	1500.0	100.0
37.5	0.0	98000	100.0
25:	0.0	1500.0	100.0
19	45.0	1453.0	97.0
9.5	- 83.7	1385.3	92.4
4.75	76.5	1309,8	87.3
(2)	70.2	1239.6	\$2,6
9.125	348.2	991.4	86.5
0.075	452.1	139.3	36.0

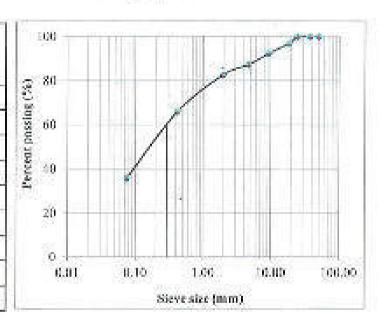


Table of persons of fine and course grained wil-

Туре	Sail	Posson (%)	
Fine	Clay and sit:	35.95	
Connac	Sand	48,60	
	Coavel	17.56	

Remorks	
+ Clay and Silt = 0.075 mm	
:: 0.075 mm = Sand < Zum	
· timbel >2	

2-369-2016

Total by

Mr. Khang Channe Mr. Fleng Mayanang



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Website: www.magkh.com

SPECIFIC GRAVITY

(ASTM D854-98) ...

Study Tenne

CKORSA CONSULTAMES INTERNATIONAL (KCI)

Sub-consulment

S MERONG AUVANTECH GROUP COLLETE, (MAG) ::

Project.

GROUDCHING ALL SORON YOUR RETURN PRODUCT FOR PROVINCIAL ROAD IMPROVINGING PROJECT THAS BIT.

Location

: PK801000, PR4S34, Kroker, Purset Provinc Offset

- RHS 0.50 m

Tested date

: 01-Sep-2016 Finished date : 01-Sep-2016 Coordinates

+ N=(338(22.)E=383224

TP No.

20 EP-15

TP depth (m):

 $\approx 0.30\,\mathrm{cm}$

3	Test Number	1	2	- 3		
ls.	Pyonometer Number	C8	C15	C6		
e.	Mass of pycnometer (g)	145.36	117.22	1.15.49		
d	Mass of pychometer and dry soil (g)	166.34	137.60	130,70		
e	Mass of over-tined soil (g)	30.98	20.38	15.21		
ř	Mass of pycnometer filled with water (g)	320.06	328.26	339,12		
8	Mass of pycnometer filled with water and soil (g)	352.58	241.22	348.76		
h	Specific gravity $\phi(v)(f\cdot g)$	2.762	2.747	2.731		
1	Average specific gravity	2,739				
3	Specific gravity at 20'e	2.733				

2-Sec-2016

The Land

Calculated by

Mr. Kheng Channe

Mr. Heng Muyareng

Provincial Roads Improvement Project ADB Loan No. 2839-CAM/8254-CAM

Feasibility Study on Second Provincial Roads Improvement Project

Appendix-II B

Table 2D-1 Summary of Additional Laboratory Test Results for PR 312 (Existing Subgrade/Subbase Below Base Course and for Base Course Materials)

APPENDIX-II B

Table 2-D-1 Summary of Additional Laboratory Tests Results for Samples Collected from Project Roads

Memoria Services				Sample from aciding subgrade/Subbases			Somple from cysting base counse			Sample from selecting 9-10 radio			Sample from existing catacle wearing		
	A days coased CBINSI at 80% MDD		83	æ	8	122	8	3		28	÷	- PP	e	8	
	Caso- calor adentic Mas		4	424	ę k	7:24	2.2.4	4 64	2,24	4.2.4	4.75	41.4	8-2-8	757	
suite	Adeta cinda AASHTOT 89 8,90	P. (%)	0.70	9	422	7.29	6. p	8-9	2:2	3	27.00	25 21 21	16.00	78.0	
/ Test results		(F)	8 Z	22.20	1825	08 -30 -30	97 93	62.00	0.81	8.03	9	18.80	27.20	24.40	
Laboratory	% present by weight (AASHTO T 22)	0.075mm	0	13.0	0/3	20	19.0	ç	N N	20.00	936	340	3	n N	
3		0,423 m m seksy	8	25.0	000	92	8	-80	î	0'08	655	0.00	98.0	() () ()	
811		20 mm	42.0	44.0	23.8	6 66 75	67.0	0.55	0.76	0.53	0.60	6.95	620	0.00 F	
	Raf)		8 2.3	20.00	2302	ф 19	27.78	857.5	2150	2143	1,883	2340	2,102		
	35 E		18.6	9.06	8.30	(S) (O)	7.46	8	15 15 15 15	057	31.85	188	67.8	9	
2 2 2			+	ou.	99	*	2	m	-	-04	20	æ	2	00	
	Offsetym: Tear Pit No.		Offscam UHS 1.5 UHS 1.5	UHSTIC	0.25148	70 90	0.035	RH8 1.5	 	S 1 840	21.392	UH8 1.0			
Pot No. Locadon (fcm)		5	000+0	154207	25+000	9+620	000161	000-93	000+9	45+303	- C000+08	00015	48.000	000+00	
		PR 342 (Ch : 27+100 or MR :	Charmin Sorder					PR 1634 (Tex- Phos at Ch	20 Sept of MRSS	Purson		262			

Date:

CBR Penetration Test (AASHTO T-193) Consultant Confractor: Contract Pkg No *** Road No.: PR312 Sample Date: 17-09-2016 Test Date 121-09-16. Sample Location: PK 5+000 LHS 1.0m PMSample No.: Lab No: PR312/004 Sample Description: Sub-base Material Depth: Borrow Pit Qiv = DATA SHEET CBR CALCULATIONS CBR (%) Corrected Unit Load/Ka/m²) 2.54mm 5.08mm 2:54mm 6.08mm No of Blows per layer 10 52.62 127.40 74.77 121.34 36 73.40 146.79 104.28 139,80 69 98.32 139.70 187.28 198.65 Corrected Unit Load/Standard Unit Load 1 100 70.36 Ke/em² Standard Unit Load at 2.54 mm penetration level -105 Kg/cm² Standard Unit Load at 5.08 mm penetration level -Summary For Lab Test Result of Base Course Material. Gradation. CBR LL MDD OMC PI. Soundness LAK Pasing Sieve in ram(%) at 95% (%) (96)(%): 1361 (g/cc) $(38)^{-1}$ Grade: of MDD 0.275 0.426 B 19.92 6.37 5.13 24.502.1366.50 96 LL = 25 Saccification Requirement 05 PLS 6 LAA ≥ 40 | CBR ≥ 80 Remarks Casultant: Contractor: Date Tested by: inspected by: Contractor's representative Checked by: Date:

Approved by:

Moisture-Density Relationship AASHTO T-180 for CBR Test. Consultant Contractor Contract Pkg.No.: Road No.: PR312 Sample Cate: 17 09-2016. Test Date 12 | 08 16 Sample Location: PK 5+000 LHS 1.0m. Pit/Sample No. Sample Description: Sub-base Material Lab No.: PR312/804 Deoth: Bonow Fit Qty + Weight of frammer__4.54 kg____ Free fat height = <u>457 mm</u>, with a flat discular face of dia; <u>50.6 mm</u> Determination of Density Trial No. 9 3 4 8 Witef wat compacted material findule. 12794 12037 12490 62534 ď. What Mould 7097 7597 7097 7597 1 What wet compacted materials (W₂-W₃) 4584.0 4797.0 4940.0 4893.0 ġ. Volume of Mould(by Illing water). 2186.70 2165.70 2195.70 œ. 2165.70 Wet Density = W₂ : V₂ 2.117 2.215 2.251 2.250 gloc Yest. Dry Density = $\gamma_{eq}/(1 + m_e/100)$. 2,060 2/115 2.120 2,080 9500 Determination of Mosture Content : Can Nos 141.00 151.00 132.05 149.00 Will of weight matrial # Canď. 145.00 124.70 138.60 Whol dry material + Can 137.80 9 3.40 6.00 10.40 7.30 Weight of water (menu). Ð. 35,00 10.00 17.20 18:00 Weight of can ä 122,50 127.00 107.50 20.60 Weight of dry material(m, m_g) 9 2.77 4.72 6.79 8.62 Moisture Content (m, mg) x100 Maisture Daneity Relationship 2.130 2.160 22.140 Ny Benefit, 900 2.120 2.135 g/ec · 2.100 2,060 2.000 2,040 200 300 400 500 0.00 7.00 300 8.00 10.00 11.00 200 Molistone sontent % Consuctor. Cosultant: Tested by: inspected by Date Contractor's representative: Cate Checked by: Approved by: Dele

Moisture-Density Relationship for Different Blows in CBR Test(T-193)

Consultant

Contractor

Contract Pkg.No.:

Read No.: PR312

Sample Date : 17 09 2016 Sample Location; PK 5+000 EHS 1.0m.

Test Date 21-09-16 PidSemble No.:

Sample Description: Sub-base Material Lab No: PR312/004

Liepth:

DETERMINATION OF DENSITY

No. of Blows per layer		10 Blows	30. Blows	66 Blows	
Mould No.	301	A2	Α3		
Wt. of compacted wet materials Would	9	12166	12674	12934	
Wit of Mould	9	7832	8085	8118	
VA, of wer compacted materials in mould	Ø	4333	4639	4818	
Volume of Would	00	2060.3	2124	2112.7	
Wet Density = What wel compacted materials/vocume of mould	g/cc	2,113	2.184	2,280	
Moisture Content	78	6.20	6.88	8.64	
Bry Density=Wet Density\(\)1+m/160(g/cc	1.990	2.048	2.138	

MOISTURE DETERMINATION:

No. of blows per keyer		9	0	30	0		35
Moisture Can No.		E1	67	A23	A24	A21.	A33
Wet of Can+Wet Materials	9	159.00	173.00	148.00	128,00	147.00	144.00
Whof can I Dry Materials	9	150.80	184.00	140.00	119.00	139.00	136 00
VM of Moisture	9	8.40	9.00	8.00	7.00	8.00	8.00
Wt of can	g	18.10	18.00	18.00	17.00	18.00	18.00
Wt of dry meterials	3	124.50	146.00	124.00	102.00	123,00	118.00
Molshine content	- 56	6.25	6.10	5.45	6.86	6.50	6.78
Average Micistum Coment	156	9.60	20	9.6	6	.6.	64

Nobec

MDO = 2.136 g/cc | 6MC = 6.60 %

Contrastor:	Cosullare			
	Inspected by:	Date:		
Contractor's representative:	Checked by:	Date:		
	Approved by:	Date:		

Consultant

Confractor:

Contract Pkg No.:

Road No.: PR312

Sample Date : 17-09-2016

Test Date : 21 09 15

Sample Location: PK 5+000 LRS 1.0m.

Ph/Sample No.

Sample Description, Sub-base, Material.

Leo No. PR312/004

Depth :

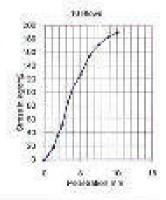
Borrow Pit Oty =

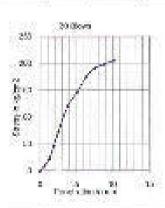
CBR Test (T193): Swell and Pennetration Data

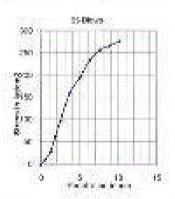
Surchaine.	Well-kning at 1	4,594 8	
Committee of the Commit		2007/2007	4

SAMELY IN	1.0				S-nucusadio y sedime:	9,000	M	
Dete	Time	Semanke	Mid.New 1 (1)mm(=	137	Mid.No.F2 (10mm) =	117	Markers Horm:=	117
1.004	2000	Sentance	Feeding in into	2w212	Reading it mo	SAME N	Bleading in mor-	Swd1%
19400416	4.4	Start	2.73	0	4.31	0.	5,800	0
	245		2.02	0.25	4,02	0.19	6.925	0.10
	405		3.45	0.80	4.60	0.26	5,990	0.16
	724	Contraction of	3.20	0.40	4.61	0.26	5.000	0.16
22900998	981	Endet	0.20	0.40	460	0.26	5,995	##(e)

Personal	200			9 63	Proving Bi	ng Pesading	und Steepe		25000 A CD	
CHARGESTA	131	Treversor-	(10.8tpws	Company of	10000	-135-Ektw.	0.00	1000000	95 Blows	de la constante
ech.	ing	(but Rending	south 98	Carpes in Parton	(Sa) Founding	coodings.	. Streen in kyrom ²	Florest leg	Loomions	Street in Agricult
0.000	0.53	1	0.230	10000	2	0.0000	0,000		0.0001	0,000
0.005	0.64	6	1,570	8,300	197	1,8404	5,6794	2	2,3807	12,463
5.665	1,87	18	3.418	18.000	10.	4.2062	22 157	211	1 (641)	28.641
\$ 875	1.4	- 26	6,336	36,395	024	6,9353	47.034	46	12,0943	53,752
0.100	2,42	XX.	0.000	ACC ALCOS	60	100,00000	230,096	21	1800072	94 223
0.150	2001	0.750	(40,400)	101002	07:00	22,3740	193,483	357.00	30,7640	162,095
0.500	6.08	102	24 189	127,424	106	27,860%	149.781	142	87,8848	106,646
0.050	6.96	712	28.447	165,120	197	20,3900	125,020	70	44,6664	200,450
0.900	7.82	24	22 532	171.718	139	38,8486	102.47	1886	48,5021	257,527
0,250	6 607	1507	- 16245	182 297	104	37,0006	189.115	(90)	50.7438	767.971
0.400	10.16	097	36,120	109.721	145	30,1751	229,229	200	52,5540	270,000







Contractor	Cosultant.	
Tested by	Inspected by:	(Inter
Contractor's representative:	Officker by:	Date.
	Apuroved by:	Dalo:

Determination of California Bearing Ratio(CBR) (AASHTO T 193)

Consultant:

Confuscion

Contract Psy. No.:

Food No.: PF312

Sample Cate: 17-00-2016

Test Date 321-09-18

Sample Location: PK 5+000 LHS 1.0m.

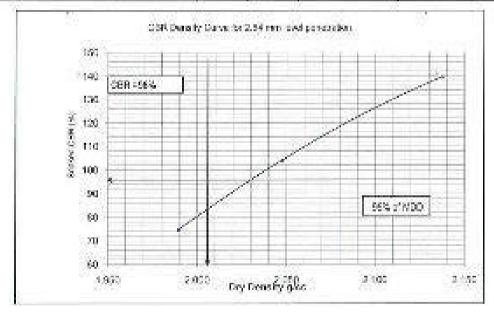
Lab No. PR812/804

Sample Description: Sub-base Material

CBH Calculation :	10 Blows	30 Blows	65 Blows
	Street of 2 Starres \$2,023 92567	37644 at 2.54mm = 75,12575 32507	Stead at 2.54 mm* 15,325 kg/on ²
CISIS Carabrians For cornaded	GBR = 74.77 %	CBS = 104.20 %	COST = 129,722 h
cad / alress	Spess of 6.06mm — polyge. kg/ss/	Stress at 5 00mm = 446 791 \$55.07	Stress of 5 Dimm* Had out Parint
	GSR = 121.34 %	GSR: 180.50 %	OBR = 167.86 %
			- 10

Most are Bankiy Date from sheet "CSR WE"	hio of trioves	10.	93	96
Resulting Datienty Color Half wheat Color No.	Dry Pensity 1, p./ oc	1.000	2,048	2.188
Corresponding CBR from 2.54mm penetration level	Corrected CBR (14)	24.27	104.28	139.70

Proffing value for \$0% of Maximum Dry Dennity (MDD)	1.820	green.	CBR Result (%)
Plotting value for \$5% of Maximum Dry Density (MDD)	2.029	girt	95



Contractor	Securitary .		
Tesled by	Inspected by:	Cate	
Contractor's representative	Checked by:	Date	
	Approved by:	Cale	

Sleve Analysis of Fine and Coarse Aggregate Consultant Contractors Contract Pkg.No.: Road No.: PR312 Test Date : 21 08 16 Sample Date: 17-09-2016 Sample Location: PK 5+000 LFS 1,0m 0 Pit/Sample No.: Sample Description: Subbase Material Lat No.: PR312/004 Depth: Test Method : AASHTO T27/T88 Borrow Pt. Otym Weight of dry soil + weight of care Weight of Can: 0 Weight of dry soil: 4663.00 n Weight Cumulative Passing Percentage (%) ASTM Completive. Size (mm) Retained wieght Specification Steva. retained (%) Observation Report retained(g) (0)72. 50.00 0.00 n. 0.00 100,00 100 100 41 25.00 532,00 532.00 11.43 88.57 80 75-85 3(8) 10.00 1049.00 1581-00 33,98 66 02 38 40-75 8.10 2.000 1117.00 2898.00 57.98 42.02 42 20-45 8.00 0.425 1003.00 3731.00 80.15 19.82 15-30 20 # 200 0.076 635,00 4366.00 93.83 3.17 6 6-20 0.076 Pan 287.00 Grade B 100 Passing 20 80 X 70 60. 50 40 30 20 10 0

<u>Contractor</u>	Consollant	
Tested by	Inspected by:	Cate:
Contractor's representative	Checked by:	Dale;
	Approved by:	Date:

1.00

10.00

Grain Size

6.10

0.01

Plasticity Index Test AASHTO T-89 and T-90

Consultant Contractor: Contract Pkg, No.:

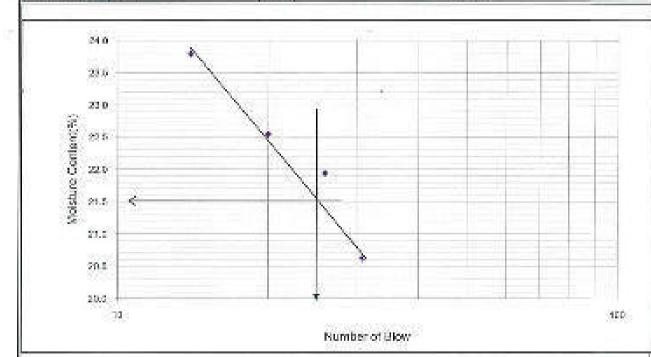
Road No.: PR314B, NR13 Sample Date : 17 09 2016 Test Date : 21 06 16

Sample Location: PK 6+900 LHS 1.0m PMSample No.:

Sample Description: Base Course Material Lab No: PR312/004 Depth :

Boorow Fill City + Data Sheet

	Liquit	Limit	(LL)		925	00 00		100	to Umit (%)
Nambe	imber of blows			20	26	31	36	0.04.004	ear, water a group
San N	umber		N/A	4 N5	Nt	N2		N3	NG
971	Weight of can = Wet soil	10	25.70	26.40	25.10	25.30		30.00	30.60
1772	Weight of can + Dry soli	8	22.70	23,40	22,40	22.70		27.30	27.60
17/3	Weight of can	2	10.10	10.40	10,10	10,10		10.20	9.90
194	Weight of water = (W1-W2)	g	3.00	3.00	2.70	2.60		2.70	3.00
495	Weight of dry soil = (W2-W3)	2	12.60	13:39	12,38	12.60		17.10	17.70
We	Malature contain: -(VV4/VV5r100)	86	23.81	22,59	21.95	20.63		15.78	16 95
LL	Liquit (mt (from graph)	%	153		21.60				16,37
PI	Plastic Index	34		5.13			01	100000000	



Contractor	Considere				
Fested by	Inspected by:	Date			
ested by ontrector's representative	Checked by:	Cate:			
	Approved by:	Date			

CBR Penetration Test (AASHTO T-193)

Consultant

Contractor:

Contract Pkg No.:

Road No.: PR312

Sample Date : 17-08-2018

Test Date 19-09-15

Sample Location. PK 15+000 RHS 2m

Sample Description: Sub-basee Material Lab Not: PR312/002

Pit/Sample No.:
Depth:

Borrow Pit Oty =

DATA SHEET

CRE	477 611	277 F 181	A 1815	CONTRACTOR OF THE PARTY.

	Corrected Uni	it Load(Kg/m²)	CBR (%)		
No.of Blows per layer	2.54mm	5.00mm	2.64mm	5.08mm	
10	18.00	55.39	25.58	52.78	
30	58.16	98.32	82 84	93.64	
65	70.63	109.40	100.35	104.19	

Corrected Unit Load/Standard Unit Load * 100

Standard Unit Load at 2:54 mm genetration level -

70,36 Kg/cm²

Standard Unit Load at 5.08 mm penetration level =

105 Kg/cm²

Summary For Lab Test Result of Base Course Material.

Oradetic		Contraction of the Contraction o	700	EEE	MDO	250,000	Service of	LAA	CBR
Grade Pssing Sleve in mm(%)			PI (%)			TO SUPPLIES THE CONTRACTOR		124A	80, 95.75
CS abe	0.425	0.075	200	3,000	, in	3559	2000	200	of MDO
В	25.34	14.88	8.18	22.20	2.164	8.08		- 5	74
Speci	lication Regu	rement	O≤ P1 ≤ 6	LL = 25	13-36	Car		LAA = 40	OBR ≥ 8

Remarks

Contractor	Cosultant				
Tasted by	inspected by:	Date			
Contractor's representative:	Checked by:	Date:			
	Approved by:	Date:			

Moisture-Density Relationship AASHTO T-180 for CBR Test. Consultant Contractor Contract Pkg No.: Read No.: PR312 Sample Date: 17:09-2016 Test Date : 19 08 15 Sample Location: PK 10+000 RHS 2m Pit/Sample No. Sample Description: Sub-basee Material Las No: PR342/002 Depth : Borrow Pil Oly w Weight of Rammer: 4,54 kg ____Free fall height = 457 mm, with a flat circular tace of dia: 50.8 mm. Determination of Density Trial No. 2 4 8 What was comparted material mouto-12150 12470 120052 12028 Ġ. We. Whol Moule 2 7097 7597 7597 7597 Whof wet comparted materials (WAW) ď. 4593.0 4031.0 5065.0 5032.0 Volume of Moularby filling waters 2165.70 2165.70 2165.70 2155.70 V_{m} éc. Wet Density ... = Work Vm. 2.121 2.231 2.339 2.323 glébi Yest. 2.087 2,104 2.164 741 Dry Density = $\gamma_{eq}/(1 \pm m_e/100)$. 2,099 Determination of Moisture Content : Can Nos. 150.00 154.00 189.00 161.00 What weight maticals Clan- π 145,50 150.90 157.80 147.00 Mr. wit of dry material + Caru-9 5.45 3.10 13.40 14.00 Weight of water (manu) Ħ 17.20 15.90 16/10 16.60 May. Weight of can 9 131.40 135.00 141.50 131.00 Weight of dry materialim, m₂: May. ij. 6,00 8.05 10.69 4.11 Melsture Content (my /mg) of 00 16 Makana Danelly Relationable 2 220 1,200 2 100. 2.180 2 140 2 120 2,100 2,060. 2.164 0100 2,000 2.046 OMC -8.08 2,000 2,000 1.660 1.682 245 831 400 500 640 700 800 030 50011.0012.00 Moisture contract %. Cosultant Computeror Tested by: inspected by: Dala Contractor's representative: Checked by: Date: Date Approved by:

Moisture-Density Relationship for Different Blows in CBR Test(T-193)

Consultant

Contractor

Contract Pkg.No.

Boad No.: PR312

Sample Date : 17-09-2016

Test Date : 19-09-16

Sample Location - PK 15-000 RHS 2m.

Pit/Sample No.:

Sample Description: Sub-basee Material Lab Nov. PR312/002

Cepth

DETERMINATION OF DENSITY.

No. of Brows per layer		10 Blows	30. Blows	65 Blows	
Mould No.		£f	E2	F3	
Wt. of compacted wet materials +Would	8	12704	12939	13246	
Wt of Mould	s	6144	8163	8354	
Wit of wet compacted materials in mould	0	4660	4745	4892	
Valume of Mould	60	2409	2111.1	2114.7	
Wet Density = Whof well compacted materials/volume of mould	g/cn	2.182	2.249	2,313	
Moisture Content	%	8.34	8.47	8.13	
Dry Density=Wet CensityX(1+m/100)	o/co	1.995	2.073	2,139	

MUISTURE DETERMINATION:

No. of blows per layer		3	10	26	30		55
Woishire Can No	0.0	A2	A20	Ac	ES	E3	AS
Wet of Can+Wet Materials	9	181.00	181.00	164.90	159.00	159.00	149.00
Wt of can +Dry Materials	9	150.00	150,00	162.40	148,10	149.40	139.00
Wt of Moisture	9	11.00	11,00	11.50	10.50	13,60	10.00
Wt of can	g	18.20	18.00	17.90	17.00	15.10	17.20
Whof dry materials	0	131.80	132.00	134.50	131,10	132.30	121,10
Moisture content	90	8.35	5.33	8.62	8.31	8.01	8.28
Average Maisture Content	56	8.	34	3.4	7	8.	13

Note:

MDD = 2.164 g/cc , GMC = 8.88 %

Contractor	Cosultant	White Ite	
Tested by	Inspected by:	Cele:	
Contractor's representative:	Checked by:	Deta:	
	Approved by:	Date:	

Consultanti

Confractor:

Contract Fkg No :

Bond Bol: PR312

Sample Cate: 17-09-2016

Test Date : 19-09-16

Ph/Sample No.:

Sample Location: PK 15+000 (845 2m Sample Description: Sub-casee Material

Lab No.: PR012/002

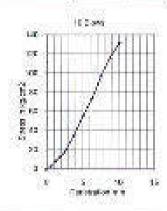
Depth:

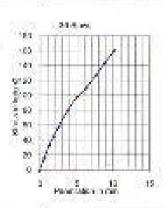
Borrow Pit City -

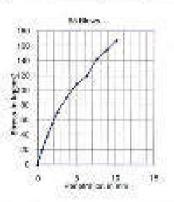
CESS Took	JE1900:	Swell and	Pleaning extracts out	Distant.

SWELL BA				and the same	Sandraga Weights:	4,551	kg	53 F - 1
Date	Time	Commeter	Mid.No.51 H(mm) =	5117	Mid.No.F2 Himmy -	3337	MisuNouES Harring -	23.97
2462		DOMESTICAL	Foresting is non-	SAMES	Reading to min	Swell %	Fooding in min	SAM 28
19/08/19	0	3000	2.73	48	4,30	0	6.500	3,40
	246		1.02	0.25	4.53	0.19	5.500	0.10
	460		3.15	0.00	4,61	0.26	5.100	0.46
	72h		3.20	0.40	4.51	0.26	5.500	0.18
22/09/16	906	Exclud	3.20	0.80	4.01	0.26	5,000	0.16

Perceion	498		Proving Ring Reading and Steess									
COLOR SHOT		(10 Blows)				(80 Blows		(96 SkrAs)				
irch	7.0	Diel Bosoning	oacinsk	Shapir sport ³	City Reading	Load a kst	Shirzan spicini	Dial Moscory	Loadin shi	Subjective in		
0.000	0.00	1	0.000	0.000	0	0.0000	0.000	- 4	0.0000	0,000		
0.035	0.68	201	(0.50%)	2,400	72	1.000	90,638	139	3,9456	30.772		
0.000	1.27		1.570	0.309	24	6.3101	33 336	20	7.3648	20,776		
0.000	151	7.5	2,996	12.491	. 30	3.664	45 9.99	(24)	10,5168	55,325		
0.000	2.54	- 15	20400	10.010	762	11.0436	50,165	31	10.4009	70,681		
0.100	3.91	250	6,673	34.020	99	15.2404	90.120	68	17,3527	99,356		
1200	6.63	40	10.517	\$5,395	71	13 3970	90.323	76	20,7707	109,001		
0.260	6.15	53	13.735	73,396	80	21,2356	110.795	87	22,5740	120,400		
4 202	7.00	0.0	1180800	360000	961	20,1000	12/405	VODE	27,0000	144(60)		
0.250	0.49	64	22.005	110.325	134	27.3457	144 022	112	257470	155,100		
0.400	11.16	19	24.977	121.556	100	91,000	193.500	621	31.8152	187,684		







Contractor	Cooutant		
Tesned by	Inspected by:	Date:	
Contractor's representative:	Checked by:	Date:	
	Approved by	Date:	

Determination of California Bearing Ratio(CBR) (AASHTO T 193).

Consultant:

Contractors

Confract Pkg No.:

Road No.: FR342

Sample Cate : 17-09-2016 ...

Text Date : 19-09-16.

Sample Location - PK 15 (C00 JUIS 2m

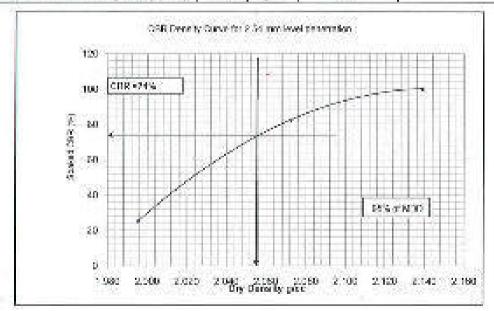
196 No. PR312/002

Sample Descriptors Sub-bases Material

COR Calculation:	10 Blowc	30 Bkras	65 Blows	
	Stress at 2 64mm in a con lighter	Stress of 2.04mm - 66 16266 kg/sm²	Bress at 2.64 mm – ye aga kp/cm²	
CSR Caculations from corrected	OBR = 29.58 %	OB9 = 83,64 %	GSR = 191 280 %	
kad / stines	Single of a Decrete 199,999 Agreed	Stress of 5 08 ran = 95,322 kg/cm ²	Shear at 5 Darins 19546) kg/ar/	
	CESR = 32.76 %	C293 = 23354 %	C2512 + 104.10 %	

Moisture Density Data from sheet 1 CBR MD1	Mu of brown	10	30	65
moretine delicité tout autre autre : 2005 mile.	Dry-Dansity , p./ oc	1,990	2 073	2 139
Corresponding CBS from 2 54mm penetration level	Corrected CBN (%)	26.51	32.64	100.05

Plotting value for 95% of Maximum Dry Density (VIDD)	1.935	9/00	OBS Result (%)
Plotting value for 95% at Maximum Bry Density (MDD)	2,055	9/00	74



Contractor	Cost-banf:				
Tested by	Inspected by L	Date			
Contractor's representative:	Chacked by:	Date:			
	Approved by	Dale:			

Sieve Analysis of Fine and Coarse Aggregate

Consultant

Contractor

Contract Pkg No.:

Road Not: PB312

Sample Date: 17-09-2016

Test Date : 19-09-19

30

Sample Location: PK 15±000 RH5 2m 0 Sample Description: Subbase Material

Lab No. PR312/002

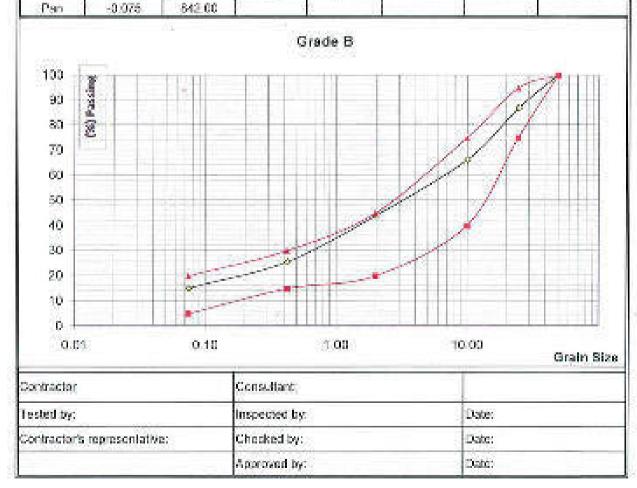
Pit/Sample No.:

Depth I.

Test Method : AASHTO T27/T88

Borrow Pri Dig - --

Weight of a	try soil + weigh	for can:		g	Weight of Care		9
Weight of	dry soil:		5659.00	g	Section Management		
ASTM	ALCOHOLOGICA CONTRACTOR	Weight	Comulative	Cumulativa	Passing Pero	entage (%)	Charlest Adams Co.
Sleve	Size (mm)	Retained (g)	wieght retained(g)	retained (%)	Observation	Report	Specification
27	50,00	8,90	.0	0.00	100,00	100	100
17	25.00	752.00	762.00	13.28	36.71	-57	70.66
3/9"	10.00	1171.00	1923:00	23.98	66.02	-66	40-75
¥ 10	2.000	1257.00	3180.00	96.19	42.91	44	20-45
# 40	0.425	1045.00	4225.00	74.66	29.34	25	15-30
¥ 200	0.078	592.00	4817.00	85.12	14.88	15	5-20
-	4						



Plasticity Index Test AASHTO T-89 and T-90

Consultant: Contractor: Contract Pkg.No.:

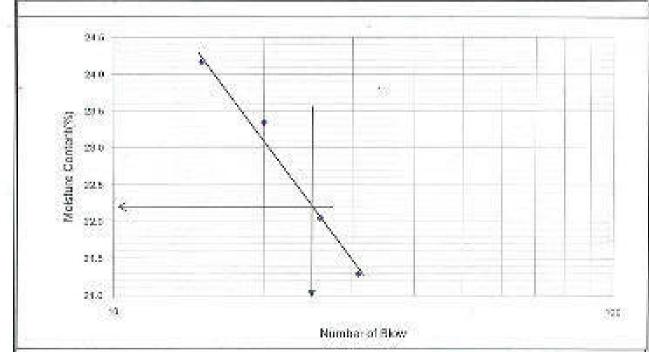
Road No.: PR314D, NR13 Sample Bale Tast Date

Sample Location: 15±000 RHS 2.0m PtySample No.:

Sample Description - Subbase Course Material Lab No. PR312/002 Depth |

Borrow Pit City =: Data Sheet

Liquit Limit (LL)							P.P.S.	lie Cinit (%):	
Number of blows Can Number		lumber of blows		20	26	31	36	201200	Berlin Berliner
		AG	G7	NI	144		C10	C11	
77/1	Weight of can + Wet soil	9	29.10	26,90	26.60	30.50		29.90	25.60
1772	Weight of can - Dry soil	0	25.40	23.70	23.60	26.90		27.40	26.40
W3	Weight of can	9	10.10	10.00	10.00	10.00		10.20	10.10
1/14	Weight of water = (W1-W2)	9	3.70	3.20	3.00	3.60		2.50	2.20
W5	Weight of dry soil = (W2-W3)	9	15.30	13.70	13.66	16.90		17.20	16.30
706	Moisture content =(VM7/V6*100)	%	24.18	23.35	22.08	21.30		14.63	13.50
LL	Liquit Imit (from graph)	%			22.20				14.02
PI	Plastic Index	%			A Description	8.1	18		0.0000.0



Contractor.	Cosultano	
Tested by	Inspected by	Date:
Contractor's representative:	Checked by:	F ata:
	Approved by:	Diate:

Daber

Date:

CBR Penetration Test (AASHTO T-193) Consultant. Contractor: Contract Pkg.No... Road No.: PR312 Sample Date : 17-09-2016 Test Date : 21-09-16 Sample Location: PK 25+000 LHS 2.0m Pit/Sample No.: Sample Description: Sub Base Malerial Leb No: PR312/006 Depth: Borrow Pit Oily -DATA SHEET OBRIGATIONS GBR (%) Corrected Unit Load/Ka/m*t. 2.54mm 5.08mm 2.54mm 5.08mm No of Blows per lever 10 69.24 109.40 38.38 104-19 30: 92.08 109.40 130.65 104.19 85 105.25 173:10 149.54 184.86 Corrected Unit Load/Standard Unit Load * 100 Standard Unit Load at 2.54 mm penetration level = 70.36 Kg/cm² 106 Kg/cm² Standard Unit Load at 5.06 mm penetration level = Summary For Lab Test Result of Base Course Material. Gracution. CBR MDE OMC 131 CH Soundness: LAA Pasing Sieve in mm(%) at 95% (%) (58) (20)(%)1965 Grade. fa/cct of MED 0.425 0.025 4.22 A 10.07 4.60 19.25 6,50 2.302. 133 Specification Requirement **CBR 5 80** 06 PHS 51 LL 8 25 LAX 8/40 Ramarks: Contractor Cosultant Tested by inspected by: Date:

Checked by:

Approved by:

Contractor's representative:

Moisture-Density Relationship AASHTO T-180 for CBR Test.

Consultant

Contractor

Contract Pkg.No.:

Road No.: PR312

Sample Date: 17 09 2016

Test Date : 21-09-16 PibSample No.:

Sample Location: PK 26+000 LHS 2,0m Sample Description: Sub-Base Material

Lab No: PR912/000

Depth:

Borrow Pti Qty +

only through the

633

Weight of Rammer 4.54 kg. Free fall height = 457 mm, with a fall ordular face of dia: 50.8 mm.

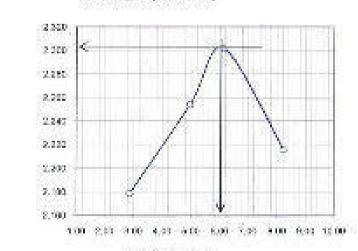
DECEMBER 1	the second second	and the second second	2 4	Jensily
100				THE RESERVE OF THE PARTY OF THE

	Trial No.	- 60	30)	2	3	142	- 5
W ₁	Wt of wat compacted material moute	9	12453	12723	12590	12793	
Mr.	Whof Model	4	7697	7597	7097	7697	
W.	Wit of wet compassed materials (VI, VV ₂)	4	4898.0	5126.0	5253.0	5196.0	
$V_{\mu}.$	Volume of Mould(by Hling water)	Co:	2165.70	2165,70	2186,70	2185.70	
Test.	Wet Density -= W ₂ / V ₂	gree	2(242	2.367	2.444	2.398	
Test.	Dry Density = $\gamma_{ad}/(1 + \epsilon t_a t/100)$	gfec	2,179	2.265	2,302	2,216	

Determination of Mosture Content:

	Can Nos.						
m	Kellof weight matrials. Can	9	175.00	160.00	201.00	244.00	
m_{α}	Witefiely material + Can	9	170,50	453.20	190.40	226.70	
sia.	Meight of water (m-m.)	9	9.50	6.70	10.00	47,30	188
m _a	Weight of can	a	15.00	10.70	18,00	17,00	
m _a	Weight of dry material (my mg)	9	156,50	134,50	172.40	259.70	
m,	Moisture Content (my Arry) v100	85	2,80	4.98	6.15	8.25	

Moisture Density Relationship



MDD = 2,302 g/cc

OMC - 0.50 %

Moisture contain. %

Contractor	Cosultano	su fanc			
Tested by:	Inspecied by:	Uste			
Contractor's representative:	Checked by:	Date:			
	Approved by	Date:			

Moisture-Density Relationship for Different Blows in CBR Test(T-193)

Consultant

Contractor:

Contract Pkg.No.:

Ficad No. -PB312

Sample Date 17-09-2618

Test Date: :21-09-16 Bit/Sample No.:

Sample Location: PK 251000 Lhts 2.0m

Sample Description: Sub Base Material

Lab No: FR012/006

Depth:

DETERMINATION OF DENSITY

No. of Blows per layer		10 Blows	30. Blows	65 Blows	
Mould No.	S	D11	02	U3	
Wt. of compacted wet materials +Mould	9	12510	12959	13176	
Wt of Mould	Э	7975	9071	8000	
Whof wer compacted materials in mount	9	4535	4888	5176	
Volume of Mould	00	2115.9	2111.8	231%3	
Wet Density = Wt.of wet compacted materials/volume of mould	gioc	2.143	2,316	2.452	
Meiatura Carrient	%	6.27	6.43	6.45	
Dry Density=Wet Density/(1+m/100)	gen	2.017	2.175	2.303	

MOISTURE DETERMINATION

No. of blows per layer		1	10		30		35
Moisture Carr No.		A20	//2	E7	7.4	8.5	A32
Wat of Cen+Wet Materials	9	196,00	195.00	178.00	187.00	202.00	181.00
Whof can #Dry Materials	9	185.00	185.00	168.00	177,00	191.00	171,00
VVI of Moisture	9	11.00	10.00	10,00	10,00	11.00	10.00
Walef can	9	17,00	18.00	15,80	18.00	18.00	18.00
Wt of dry materials		168.00	187,00	152.40	159.00	173.00	153,00
Moisture bontent	95	0.55	5,99	8.58	6.29	8.38	6.64
Average Moisture Content	1%	6.	27	.6.4	3	6.	45

Note:

MDD = 2.002 g/co, CMC = 6.60 %

Contractor:	Cosultant					
Tested by	Inspected by:	Dete:				
Contractor's representative	Checked by:	Este				
	Approved by:	Date:				

Consultant: Contractor: Contract Plog No.: Road No.: PR012 Sample Date : 17 09 2016 Test Date : 21-09-18 Sample Location: PK 26+000 LHS 2.0m. Pis'Sample No.: Lab No. PR312/006 Sample Description: Sub Base Malerial Death: Borrow Pit Ote + CBR Test (T193): Swell and Pennetration Bata. SMIELL DATA Surchange Weights: 4,555,100 MetMath I (filmin) = Mic. 46.42 [19mm] * Mid.No.E3 (Amm) = 112 117 117 Dote: Lane Acres 939 Bessling a room Reading in mm Reading in mon-Switt % Swell No. Shired No. 2.98 2.84 22/08/19 Start Ø. 4,300 6 0 3.02 2.75 345 0.03 0.084 4,330 8,02 4.400 3.09 0.00 2.72 0.07 2,025 425 735 8.12 21.12 2.84 0.17 4,4000 1.93 25109116 951 Ended. 3.42 0.12 2.04 0.13 4,490 2.19 Proving Ring Reading and Stress Percuration. 110 Blowst (30 Ekrose) (60 Blows) Charge to CIMAL IN Title 4 6.0 Charges by ach) Local intelly book in his Lought MA cons Blacky kerend. Randing Sugar. Rending butterio) COUR 0.00 9 0.000 0.000 à. elocet. 0.000 4 Creat. dingle 2.065 61794 1.3460 0.604 15 3.5438 20,772 5.5310 22.001 100 2.002 134 16 4.3807 20, 157 35 8 (12.1) 44,014 2.0 7.8866 41,545 2.07% 1251 27 20,728 51,259 60 1301480 69,244 22 14,9004 70.435 0.100 350 20 34 340 600.201 94.5 17,4842 600,000 22 19,0819 105.247 10,1360 2.64 69 0.341 95,853 72 19,1930 13 1 192 87 55 5632 134308 0.200 6.00 265701 103.401 75 20,3707 220.400 22/5550 178,103 79. 126 0.250 2.35 117.710 20.5 54.9533 115,450 141 35 22,346 97 87:17 195,260 0.000 7.82 97 26,505 134, 138 20.5 22.5213 23,940 180 41,7155 216,035 6,550 883 48.7 50,010 101 200 90 53 65 57 190,000 100 65.7450 200 (99) 0.400 10.18 28,024 952,554 25:1959 130,254 48,3775 254,000 112 25.5 YO DESCRIPTION 30 Blown 65 3 544 185 140 300 143 120 260 120 3 m egolog g (950 . 9₆₀ 2 20 C (1) (A) (A) 5 8 8 5 50 40 20 20 1 200 S. 10 Project a Jacob a car 100 45 Complete to the control Paradicini pri prof. Contractor: Cosultant Deter leaded by Inspected by: Contractor's representative: Detec Chacked by: Date Approved by:

Determination of California Bearing Ratio(CBR) (AASHTO T 193)

Conso tent:

Contractor:

Contract Pkg No.:

Road No.: PH312

Sample Date: 17-09-2016

Test Oate 121-09-16

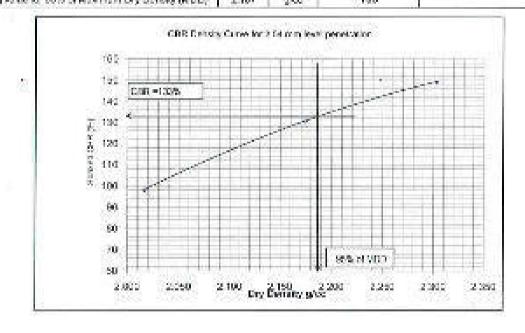
Sample Locations, PK 25/000 LHS 2 Cm.

3 No. 1413127006

Sample Description: Sub Base Material

CBR Calculation :	10 Block	30 Bloses	PS Disease			
CORR Card lateral from conversed load Authoriza	Shope of 2.54mm - means Refer	Stress at 2.64mm =	68,09067 kg/m/	Sycsaut	254 100-	108,247 kg/bm²
	CBR - 98.58 %	CBR = 190 85	3	GSR =	49.54	84
	Sires at 5.35 fem + 105.451 Agree ⁴	Since of 5.05mm/s	100.401 89/201	Sirepo, at	5.03mm=	173,103 AgAin
	CBR = 104:39 %	ESER * 104.19	46	con-	164.06	%
oregonia in respective	- W4 2054	Nevel blows	1346.2.7.3	20	22362	
Morehondly Date from steel * CBR, MIT		CONTRACTOR OF THE PARTY OF THE		Action Control	90	
		Dry-Darrally grice	2.017	2 176	2.903	
Comesponding Clark from 2:54mm	Convented CBFC (%)	38.08	120.85	149.64		

	2000		
Plotting value of Maximum Dry Density (MDD)	MOD	g.400	CER Recut (%)
District on the foreign of Manager to Day Constitutions.	9.467	Service .	4.33



Confredo	Cognitions					
Tested by	Inspected by:	Liene				
Contractor's representative:	Checked by:	Date				
	Approved by:	Date				

Sieve Analysis of Fine and Coarse Aggregate

Consultant

Contractor

Contract Pkg No.:

Road No.: PR312

Sample Date : 17-09-2016.

Test Date : 21-09-16

Sample Location, PK 25, 000 LHS 2 or 0

Pit/Sample No.:

Sample Description: Subbase Material

Lab No.: PR312/006

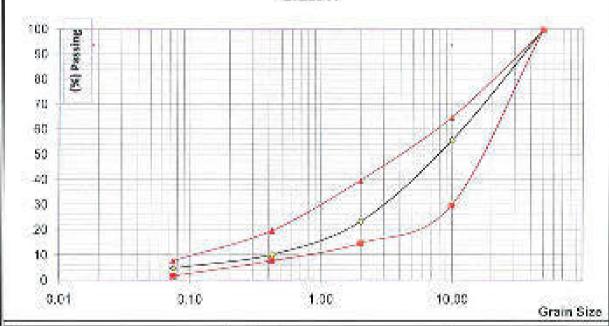
Depth:

Test Method : AASHTO T27/T88

Borrow Pil Cry n

Weight of a	Velght of dry soil + weight of can:		of dry sot + weight of can: g			9	Weight of Can:	g	
Weight of c	lry soit:		5929.00	9	1152 0 11		30		
ASTM		Weight	Cumulative	Cumulative	Passing Pero	entage (%)			
Slove	Size (mm)	Relained (g)	wteght retained(g)	retained (%)	Observation	Report	Specification		
21	50.00	0.00	0	0.00	100.00	100	::100		
17	25.00	966.00	966.00	16.29	83.71	84			
3/8*	10.00	1669,00	2635.00	44.44	55.56	56	30-66		
A 10	2,000	1920,00	4566,00	76.83	23.17	23	15-40		
0.40	0.425	777.00	5332.00	89.90	10.07	10	9 26		
# 200	0.975	324.00	5608,00	95.40	4.60	6	2.8		
Pan	0.075	273:00							

Grade A



Contractor	Consultant	
Tested by:	Inspected by:	Date
Contractor's representative:	Checked by:	Date
	Approved by:	Date

 \mathcal{H}

iii

Plasticity Index Test AASHTO T-89 and T-90

Consultant

Contractor:

Confrant Pkg No.:

Road No.: PR314D, NR13

Sample Date : 17-09-2015

Test Date - 21-09-16

Sample Location: PK 25+000 LHS 2.0m

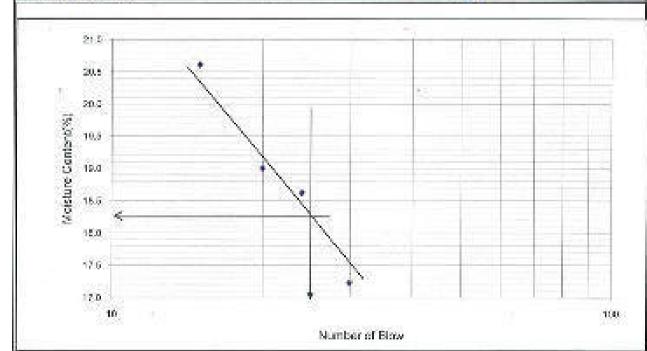
Ph/Sample No.:

Sample Description: Subbase Course Material Lab No: PR312/006 -

Cepth

Borrow Pit Qty = Data Sheet

	Liquit Limit (LL)							Plot	Platic Limit (%)	
Mumbe	Number of blows		15	20	24	30	36	/(849	10.1.0001.7307	
San Number		C10	No	N/3	U11	C11	. N1	-012		
991	Weight of can + Wet soil	2	29.10	27.00	29.30	27,10		27,40	28,40	
102	Weight of can + Dry soil	6	25,60	24,30	25.30	24.50		26.20	26.20	
W3	Weight of can	9	9.80	10.10	10.20	10.10		10.00	18.00	
3034	Weight of water = (W1-W2)	9	3.30	2.70	3,00	2.50		2.20	2.20	
W5	Weight of dry soil = (WZ:W3)	9	16.00	14.20	15.10	14.50		16.20	16.20	
708	Moisture content =(W4/W5*100)	34	20.63	19.01	18.63	17.24		14.47	13.50	
LL	Liquit limit (from graph)	36	18.25			14.03				
PL	Plastic Index	%			2 LOSSONIA	4.3	22		1000000000	



Contractor	Cosultant:				
Tested by	inspected by	Oate:			
Contractor's representative:	Checked by:	Date:			
71 V	Approved by:	Date:			

CBR Penetration Test (AASHTO T-193) Consultant Congractors Contract Pkg. No.:: Sample Date 17-09-2016 Boad No.: PR312 Test Date : 21-09-15 Sample Eccation: PK 5+000 LHS 1.0m PibSample No.: Sample Description: Base Course Material Lab No: PR312/003 Depth Borrow Pit Oty = DATA SHEET CBR CALCULATIONS CBR (%) Corrected Unit Load (Kg/m²). 2.54mm 5.08mmt 2.54mm. 5.08mm Ng.of Blows per layer. 10 55.09 141.25 92.48 134.53 30 87.24 168.95 123.96 150.90 65 101.09 156.49 143.64 149.03 Corrected Unit Load/Standard Unit Load * 100: 70.36 Ka/cm² Standard Unit Load at 2.54 mm congration level = 105 Kg/cm² Standard Unit Load at 5.08 mm penetration level = Summary For Lab Test Result of Base Course Material. Gradation: CER 11: MEN OMC Soundness DAAG Pasing Sieve in mm(%) 41.95% (98)(%) (%) 1361 (p/cc) $(96)^{\circ}$ Grade. **GEWIDD** 0.425 0.075 17.33 21.50 B 6.11 7.28 2.191 6.50 122 Specification Requirement LAA 540 | CBR 280 08 PFS 6 11.525Remarks: Cosultant: Contractor. Tested by Inspected by: Date:

Checked by:

Approved by:

Date:

Date:

Contractor's representative:

Moisture-Density Relationship for Different Blows in CBR Test(T-193)

Consultant:

Contractor

Contract Pkg No.:

Road No.: PR312 Sample Date : 17-09-2016

Test Date : 21-09-15

Sample Location: PK 5+000 LHS 1.0m

Pit/Sample No.:

Sample Description: Sees Course Material Lab No. PR312/003

Depth

DETERMINATION OF DENSITY

No. of Blows per layer		10 Blows	30. Blows	65 Blows
Maula Na.		B.1	62	83
WI, of compacted well materials + Mould	9	12513	12855	12106
WI of Would	9	9115	U151	7191
Wt of wet compacted materials in mould	9	.4998	4704	4916
Volume of Mould	CC:	2099.3	2116.2	2111.7
Wor Density - What wet compacted materials/volume of mould	g/oc	2.090	2.223	2:328
Moisture Content	95	6.68	6.28	6.28
Ory Density=Wet Density/(14m/100)	g/ac	1.964	2,091	2.190

MOISTURE DETERMINATION

No. of blows per layer Moisture Can No.		1	10		30		66	
		W30	A14	0.5	A35	748	E3	
Wet of Can+Wet Materials	9	157.00	151.90	169.00	162.00	165.00	182,00	
Wit of can +Dry Materials	g	148,00	142.00	100.00	162,50	159.00	153.50	
VVI of Molsture	g	9.00	8.00	9.00	8.50	9.00	8.50	
Wt of can	9	18.00	18.70	17.00	18.00	17,90	16.10	
Whof cry materials	9	130.00	124.30	143,03	135.50	147 10	137.40	
Moisture content	- %	6.92	8,44	6.29	8.27	6.38	6.19	
Average Woisture Content	*	6.	63	8.5	28	6.	28	

Note:

MOD = 2.191 g/cd , OMC = 6.50

Contractor	Cos.dan;	
Tested by	Inspected by:	Date
Contractor's representative:	Checked by	Date:
	Approved by:	Date:

Consultant.

Contractor

Contract (Pkg. No.)

Broad So: PRO12

Sample Date: 17-09-2016

Test Cate 1:21-09-16

Pit/Sample No.:

Sample Location - FK:540001.EES-1.Cm Sample Description: Base Course Materia

Lab Not PR312/003

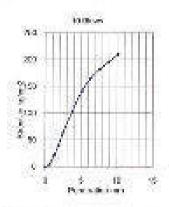
Depth

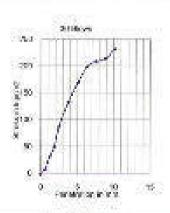
Borrow Pft City =

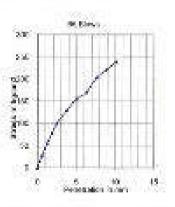
CBR Test (T193): Swell and Permethetion Gets

SWELL DA	DA.		CBR Test (1)	93): Swel	Fand Pennetration (Surcharge Wagnts:	1964 4,581	Rg.	
Dele	Time	Remarks	Mid.No.Ft Himmor:	2177	Mid No F2 . Farmy -	117	Mid.Mo.F3 (H)(100) +	1277
A MORRES	3,000	DOMESTICA	Seeding in time	Seed %	Personal transport	Swell %	Fooding to rem	Sect 5.
19/09/10:	$\{a_i,b_i\}$	8197	2.70	- 0	4.50	0	6,800	.0
	240		3.02	0,25	4.53	0.19	5,920	0:10
	455		3,16	238	4.52	0.26	5.190	0.16
	725		3.20	4.1(40	4.91	0.26	6,990	0.16
23903/16	306	Dated	3.20	0.40	4.01	0.26	5,900	0.10

Penelocian		Proving Ring Reading and Street.								
77.77		Townson.	(10.8 beat		S	(20.8lows	9		195 Blows	1
ndh.	oran	Dist Recording	cardin thi	Shorton i Sgrani	Dist. Reading	Load in to	Shuayan Ispican	Dist. Powersty	Load to sol	King as in Lington
0,000	2.07	0.00	2.722	0.000	0	0.0000	0,000	- 10	0,0000	1.000
0.065	2.54	4 to 1	0.052	5,500	100	1.5656	8.30,07	25	6,6018	200,081
2.065	1.27	16	4,207	22 (57	25	6.0472	35,851	40	10.5100	50,000
0.075	1,91	199	7,60%	30.393	384	9.4661	43.994	907	14,9994	78,985
9.199	2.54	47	12,357	05,007	65	16,5040	97,344	55	19/1902	101,162
0.193	831		19,779	102,882	190	25.2405	122,543	24	24,7145	130,174
0,200	5.00	- 02	35,115	141,550	12.7	32,3700	100 549	7130	29/7/00	106,000
0.000	6.36	120	31,590	100 170	144	37,8605	122.415	124	30,6001	171.716
0.300	7.66	100	34,705	100.707	5/0	29.7000	209.109	167	28.6682	208,660
0.360	8.80	344	97,335	195,345	55	40,7532	2 M 348	160	42,0672	221.573
0.400	1 (ca)(d) c	269	119,900	2100403	2800	34,17641-	2.12.651	1./2	44,4862	239,625







Contradur	Cosulani:				
Tested by	Inspected by	Date:			
Contractor's representative;	Checked by:	Dote:			
	Approved by:	Date:			

Determination of California Bearing Ratio(CBR) (AASHTO T 193):

Complant.

Contractor

Contract Pkg No.

Roge No. PR312

Sample Date (17-09-2018)

Test Date - 91-00-16

Sample Location | PK 5+000 LHS 1 0m

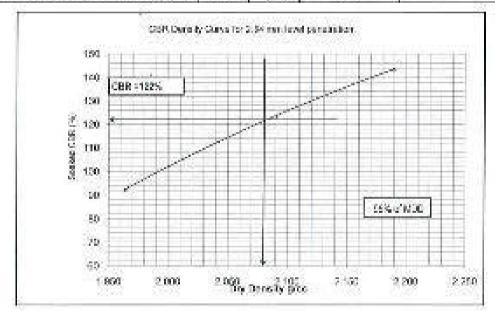
Lab No. PR3124003

Sample Description: Base Course Material

CBR Calculation :	10 Blows	30 Bloks	65 Bloyes
,	Street of 2.5-Street \$5.137 Sport ²	Street at 2.54 mm - 187 garges kg/cm²	Sawar at 2.54 mm* 454 666 kg/cm ²
CBR Cacolations from consider	CRR = SEMARS	CBR = 123.91 %	GRR = 162636 %
cod/siess	Stress at 5 Dimmer Hardage kg/km²	Streets at 5.00 mm (160 949) IQAm?	Stress of 6 06mm; use our legion
	CBR - 184.55 %	C334 160.90 %	GSR + 149.15 %

Projection of the Control of the Con	hio of blows	10	30	55
Models-Dataly Data from steet 1083 MD1	Dry Density 1, g / cc	1.154	2.091	2,190
Corresponding CBR from 2 semm penetration level:	Corrected CBR (1%)	502.48	1229.08	343,64

Philling value of Maximum Cry Density	MDO	gáta	CBB Regult (St
Platting value for \$5% of Maximum Dry Density (MDD)	7.031	9/60	122



Connacion	Cosultant:			
Tested by	Inspected by	Dalex		
Contractor's representative;	Checked by:	Date:		
	Approved by	Date:		

Moisture-Density Relationship AASHTO T-180 for CBR Test...

Consultant

Confractor

Contract Pkg.No.:

Road No.: PR312

Sample Date: 17 09 2018

Test Bate : 21-09-15

Sample Location; PK 6+000 LHS 1.0m

Pit/Sample No.:

Sample Description: Base Course Material Lap No: PR012/003

Debth :

Bornow Pit Qty -

Dry Danaby, 9'bz.

Weight of Barriner 4.54 kg. Free fall height = 457 mm, with a fat circular face of disc. 40.0 mm.

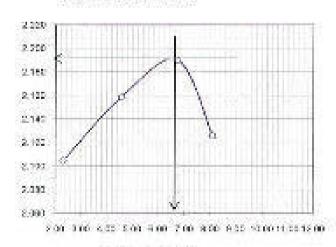
Determination of Density

6611 V	Trial No.	- 6	No.	2	3	5386	- 35%
w_{1}	Whof wat compacted material-modifi-	19	17262	12460	12650	12573	
W ₂	Wild Mode	9	7097	7597	7597	7597	
W _C	Whof well compacted materials/W _F W _S)	9	4665,0	4891.0	5063.0	4978.0	
V_{n}	Valume of Mould(by Filing Water)	00	2165.70	2165.70	2165.70	2185.70	
Tea	Wet Density = W ₃ 3 V _m	gles	2.154	2.258	2.338	2.288	
70.W	Dry Density = $q_{-4}/(1 + m_e / 100)$	9/00	2.105	2 159	2.191	2.126	

Determination of Mossture Content:

	Can Nos.						
10.	Wit of weight reactifile Cart	5	157.00	147.00	143.00	188,00	
101	Wit of dry material + Can	9	155,80	141.30	125.00	154.80	
$m_{\rm I}$	- Weight of water (m-m.)	9	3.20	5.70	8.90	11,10	
m,	Weight of can	2	16.00	17.00	16.00	18.00	=57
\mathbf{m}_{e}	Weight of dry material (m, mg)	9.0	137.50	124.30	119.00	136,00	
m _c	Moisture Content (m _s /m _d) x100	*	2.32	4.99,	6.72	8.11	

Moteture Consity Robot one hip-



MOD o/cc

OMC +

Maisture content %

Confractor	Cosultant				
Testes by:	Inspected by:	Date:			
Contractor's representative:	Checked by	Date:			
	Approved by:	Dece;			

Steve Analysis of Fine and Coarse Aggregate

Consultant

Contractor

Contract Pag No.1

Weight of Can:

Road No.: PR312

Sample Cate: 17-09-2016

Test Oate : 21-09-19

я.

Sample Location: PK 5-000 LHS 1.0m

Pit/Sample No.:

Sample Description: Base Course Material

Lab No: PR312/003

Depth ::

Test Method : AASHTO T27/T88

Borrow Pt Cry =

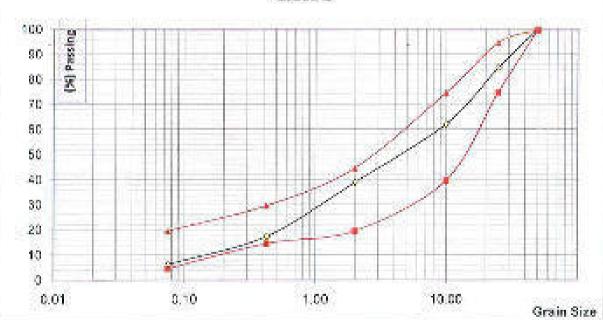
Machine of decision	 weight of pair: 	

ilor.	de de	Code.	-77

Weight of d	ry solo	2550-000	7198700	g	0.700	55 30000		
ASTM	PETER SV	Weight	Gumulative	Completive	Passing Perc	Passing Percentage (%)		
Sieve	Stze (mm)	Retained (g)	wieght retained(g)	retained (%)	Observation	Report	Specification	
20	50.00	0.08	0	0.00	180.00	100	100	
du	25,00	1114.00	1114.00	15.48	84.52	85	76-95	
3/8"	10.00	1610.00	2724.00	37.85	62.15	62	40-75	
#10	2,000	1670,00	4394.00	61.06	38.94	39	20-45	
0.40	0.425	1555.00	5949.00	62.67	17.93	17	15-80	
# 200	0.075	807.00	6766.00	93 89	6.11	8	5-20	
Fan	0.075	440,00						

q ·





Contractor	Consultant)	
Tested by:	inspected by:	Date:
Contractor's representative:	Checked by	Date
H-MINISTER MANAGEMENT AND MANAGEMENT	Approved by:	Date

Plasticity Index Test AASHTO T-89 and T-90

Consultant:

Contractor

Contract Pkg No.:

Road No.: PR314D, NR13.

HII.

Sample Date : 17-09-2018

Test Date : 21-09-19

Sample Location: PK 5+000 LHS 1 0m.

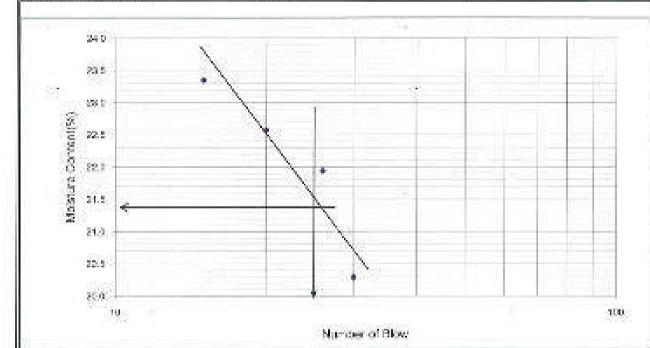
PiySamale No.

Sample Description: Base Course Material Lab No: PR312/003

Depth:

Borrow Pit Oty = Data Sheet

	Liquit	Limit	(11)	900		an expense	Territorial Control	2000	ic Limit (%)
Numbe	st of blows	0.000000	15	20	26	20	36	10.30	assistant rest
Can Number			47	A2	0.4	2/0		8.3	A1
37/1	Weight of can + Wei soil	9	35,60	38.90	33,30	33.80		38.80	34.00
W2	Weight of can + Dry sea	g	32.40	33.40	30,60	31.50		34.30	22.00
W3.	Weight of dea	9	16.70	47.90	10.33	17.00		17.90	18.10
W4.	Weight of water = (W1-W2)	9	0.20	3.50	2.70	2.70		2.30	2.00
W5.	Weight of thy soil = (W2-W3)	9	13.70	15.50	12.30	13.36		16,40	13.90
WG	Moistyre content #(VV4/VV5*100)	%	23.36	22,58	21.95	20.30		14.02	14.39
LL	Liquit limit (from graph)	%			21,50	0000	0.000		14.21
PI	Plastic Index	1%			204066	7.3	29		0.00



Contractor	Cosultant:	v	
Tested by	inspected by:	Date	
Contractor's representative:	Checked by:	Date:	
	Approved by:	Date	

23

Date:

CBR Penetration Test (AASHTO T-193) Consultant Contractor Contract Pkg.No... Road No.: PR312 Sample Date: 17-09-2016 Test Date : 19.09-16 Sample Location: PK 15+000 RHS 2m Pt/Sample No. Sample Description: Base Course Material Lab No: PR312/001 Deoth : Borrow Pit Oty = DATA SHEET CBR CALCULATIONS CBR (%) Corrected Unit Load(Kg/m²) 2.54mm 5.08mm 2.54mm 5.08mm No of Blows per layer 10 33.24 55.33 47.22 52.78 30 83.70 90.61 125.29 131.56 65 74.78 131.58 103.25 (25.29) Corrected Unit Load/Standard Unit Load * 100-Standard Unit Load at 2.64 mm penetration level = 70.36 Kp/cm² 106 Kg/cm² Standard Unit Load at 5.08 mm penetration level = Summary For Lab Test Result of Base Course Material. Gradation COR PU MDD OMC 110 Soundness LAKE Pssing Sieve in mm(%) 41.95% (95)(35) (36) faloct. (%) (%) Cirecte: STMDD 0.425 0.075 27.82 18.51 8.13. 22.50 7.46 2.178 90 Specification Requirement. LAAE 40 CBR 5.80 0s PI s 6 11.825Remarks Contractor: Cosultant Tested by Inspected by: Date: Contractor's representative: Checked by: Darte:

Approved by:

Moisture-Density Relationship for Different Blows in CBR Test(T-193)

Consultant:

Contractor:

Contract Pkg No.:

Road No.: PR312

Sample Date : 17-09-2016

Test Date : 19-09-16

Sample Location: PK 15+000 RHS 2m

Pit/Sample No.:

and the resemble of the second second

Depth

Sample Description: Base Course Material | Lab No: PR312/001

DETERMINATION OF DENSITY

No. at Blows per layer	10 Blows	30. Blows	65 Blows	
Mould No.		E1.	E2	63
WL of comparted wet materials +Mount	9	12354	12588	13032
Whol Mould	9	7899	7842	8200
Whof wet compacted traterials in mould	9	4488	4724	4832
Volume of Mould	60	2094.6	2117	2102.5
Wet Density = What wet compacted materials/volume of mould	g/bc	2.148	2.231	2.298
Moisture Content	1%	7,96	7.79	7.85
Dry Density=Wet Density/("+m/100)	groc	1.985	2.072	2.135

MOISTURE DETERMINATION:

No. of blows per layer		.10		30		65	
Moisture Can No.	- 20 -	A23	A35	A20	E4	A14	A1
Wet of Carri Wet Materials	00	156 00	153.00	162.00	158,00	154.00	183.00
Wit of can + Dry Materials	9	146.00	144.80	152.90	149.30	145.10	172.00
Wit of Moisture	9	10.00	8.10	9.10	9.70	8.90	11.00
Wilof can	9	31,50	32.10	31.10	27.10	27.38	30.00
Wt of cry materials	9	114.50	112.90	121.00	122.20	117.93	142.00
Moissure coment	- %	8.73	7.18	7.47	7.94	7.65	7.75
Average Moisture Content	95	7.	96	7.7	0	7	66

Note

MDO = 2.14 g/cc., OMC = 8.38 %.

Contractor:	Cosultant:				
Lested by	Inspected by:	Date:			
Contractor's representative	Checked by:	Date			
	Approved by:	Deter			

Consultance Contract Picc. No.: Contractor Board No.: PR312 Semple Date : 17-59-2016 Test Date :: 19-09-16 Sample Uscaling PK 15/000 RHS 2m Pulikample Volt Sample Description, Base Course Majorial. Lab No. 1983(2000). Cepth Borrow Pit City = CBR Test (T193): Swell and Pennetration Data. SWELL DATA Surpriarge Weights 4.681 40. Alid No E2 | Hilton) = MM No.E3 H(mm) = Mid No Et L'Hjimmi e 110 117 Date Time Postparks. Reading to notice Specific. Reading termin Select USA Reading in order Swall % Start 5.20 ō. 3.90 0 4 550 Ō. 15003708 q. 6.20 n.cc. 2.96 0.04 4,650 0.00 241 3.56 4.060 6.35 0.03 0.25 0 ps 40h 3.30 0.13 3.56 0.05 4,580 0.03 721 2108/15 5900 Erabal 6.30 D.03 3.96 0.05 4.000 0.08 Proving Ring Reading and Stress thereenshore. (10 Blows): 630 Blood (bb Blows) Services in Course le Charles by Load in NA Load in RM Load in 64. and an 200 Enade 64/610 Reading Nation? Danding Karen? 0.000 500 18 p-000 2100 1 01000 2 6 3 7 0.0000 property. 0.025 0.64 8. 1245 0.504 2/40085 14,000 4.7336 24/927 0 Section 122 2,288 12,463 4 4 9 9 9 23,642 0.7842 30,463 12 0.076 134 160 4.502 22:157 34 0.4505 45,500 39 9.9910 10000 0.100 2.64 24 6.340 33,238 42 12,0942 62,502 34 14.1074 74,784 0.150 234 4.474 45,000 73 16.1635 1017090 22 13 6302 60,700 18 0.200 55,255 10.513 53 24.5274 131,586 28.5774 151,555 40 46 5,03 0.250 8.28 28 2530 106,466 123 196,662 260 12,009 60 110 115 45 2008 0.200 7.12 13,400 70.650 124 20,802 179,718 154 40,4007 213,263 100 0.350 204,342 3.83 SERRE 189-061 665 14 48.1 29,785 136 162 22.69000 0,400 HORE 15:008 44.474 142 37.5376 196,026 45,2222 200,100 64 The Robert CS DISAR 30 Blown 60 300 3.50 60 252 70 500 State union 60 Morros mesos がいのかが \$ 20 10 90 01 Proposition in the second 100 100 Construitor in term Cochectos Countient Tested by: Inspected by: Dece Owner Checked by Contractor's representative. Date Approved by:

Determination of California Bearing Ratio(CBR) (AASHTO T 193).

Consultant

Contractor:

Contract Pkg No.:

Road No.: PR312

Sample Date : 17-09-2016

Text Date :: 19-09-16

Sample Location: China kach Caurry.

Lab Not BC-01 Philiample No.

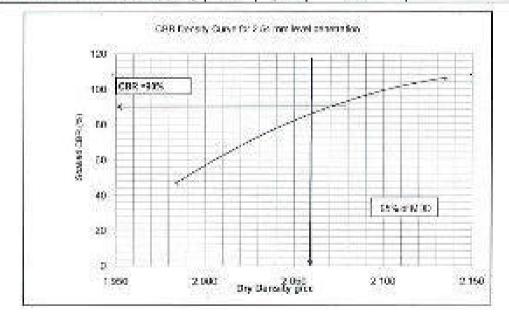
Sample Rescription Base Course Malenal

	п		

CRR Calculation :	10 D per	31 Ekwis	KS B DAS
	Special 2.54/mm - parasi kg/cm/	Stiess at 2 Genomic 68,79166 kg/kan ²	Spece at 2.04 mm = 24 764 ag 6 m ²
CBR Oggalations from corrected	CBR - 47,221%	GSR = 90.91 %	GBR = 198,289 %
load / diress	Entop at 5.05 rate \$5,000 to \$5,000	Shear at 5.08mm - 181,568 kg/cm/	Shopa of 5.35mm - 191 sea kgcm²
	GBB = 52.76 %	GSR = 105.00 %	GSR = 125.24 N

Marie Land December Planta Associate and CORD 1470	Nu of blows	10	30	2.5	
Maisture-Dansity Data from sheet," CBR: MD*	Dry-Daroity , p / co	1.905	2.072	2:135	1
Corresponding CDR from 2.54mm penetration level	Corpoded COR (S.)	47.72	90.5	100.25	300

Mortaing value for 90% of Maximum Dry Density (MDD)	1.026	9/00	Chris Result (%)
Profing value for 95% of Maximum Bry Density (MBD)	2,090	0/06	90



Contractor	Costifacti			
Texted by	inadected by:	Date		
Contractor's representative	Chacked by:	Date:		
	Approved by:	Date		

Sieve Analysis of Fine and Coarse Aggregate Consultant Contractor: Contract Pkg.No.: Road No.: PR312 Sample Date: 17-09-2016 Test Bate : 19 09-16 Sample Location: PK 15+000 RHS 2m Ph/Sample No.: Sample Description: Base Course Material Leb Not PB312/001 Depth: Test Method: AASHTO T27/T88 Borrow Pit Oly --Weight of dry soil it weight of can: Weight of Card Ġ. Weight of dry soil: 6201.001 Weight Passing Percentage (%). Comulative: ASTW Cumulative: Size (mm). Retained wieght Specification retained (%) Sieve Observation Report retained(g) 100 50,00 0.00 0.0 0.00 100 001 100 100 25,00 979,00 84 75-95 970.90 15.84 84.38 3/81 10.00 1019300 1909:00 32.08 67.92 65 40-75 1000.00 20,45 # 10 2,000 3299.00 63.84 46.95 47 # 40 0.4251187,00 4476.00 72.18 27.82 28 16-30 **¥200** 0.076 577.00 81.49 18.51 6-20 5053.00 19 Pan 20.075 1148:00 Grade B 100 90 80 蜜 70 69 50 40 20 20 10 Ď. 1.00 210,00 0.01 0.10 Grain Stze. Consultant: Contractor inspected by: Date: Tested by: Date: Contractor's representative: Checked by: Cate: Approved by:

Consul	Sept	Plasticit Contract		x Test /	ASHT	The second second	and T-90 J Pkg No				
	CONTRACTOR OF	14D, NR13 Sample (William .				Tes, Da				
	- Locatio		90256	Pit/Sample No.							
1000000000		etion. Base Course Materi	Lab No	PROG	WORDS	Depth:		No.			
ALC: UNKNOWN	Pil City		503	5170.0520	30.3150	1000	.555034				
		Liqui	l Limit		u.e.	Mark Cons	000000	2000	- PIE	tic Limit (2557
Mumbe	ir of blow	84		16	20	26	31	36	3.50		year.
Can No	ımber	-000 - 000 HADELY		04	я3	CS	Kt		010	9.2	
971	Weight	of can = Wet soil	9	26.90	25.80	29.20	30.30		27.50	20.40	
W/2	Weight	or can - Dry soil	9	23.80	22.80	24.80	28.90		25.20	27.90	
W3	Weight	of can	0	5.90	9.90	9.90	9.50		9.90	9.90	
194	Weight	of water = (W1-W2)	S.	2.20	3.00	3.40	3.70		2.30	2.50	
W5		of dry soil = (W2-W3)	0	13.70	12.90	14.90	17.10		15,40	18.10	
1995	Moistur	re content =(W4AVS*190)	, %	24.09	23.26	22.82	21,64		14.94	13.81	170
LL		mit (from graph)	%	22.50					14.37		
Pi	Plastic	Index	76			SW SW CO	8.	13		40000000	
	24.9 Washe Content (%) 22.0 22.6			\	\						
		10		No.	imberol	Blow					100
Contrac	rion			Cosulla	4						
Tested by					Inspected by:				Date:		
Contrac	же я гер	resentative:		Checked by:					Date:		
				Approve	ed by:				Dehe:		

Moisture-Density Relationship AASHTO T-180 for CBR Test.

Consultant

Contractor

Contract Psg.No.:

Road No.: PR312

Sample Date : 17-00-2016

Test Date 19-00-16

Sample Location: PK 15+000 RHS 2m

Pivšampie No:

Sample Description: Base Course Material

Lab No.: PR312/001

Depth:

Borrow Pit Oly =

Day Desirably, give

Weight of Kammer: 4.54 kg. Free fall height = 467 mm, with a flat grouter face of dia 60.8 mm

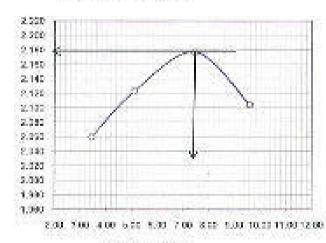
Determination of Density

	Trial No.		163	92	3)	4	25
W ₁	Whof wall compacted material function	4	12214	12430	12065	12099	
W_{i}	WhatMould	9	7997	7997	7697	7697	
W	With well compacted materials (#4,-4%)	9	4617.0	4533,0	5068.0	4996.0	
y_{i}^{-}	Volume of Mould(by filing water)	100	2185.70	2165.70	2165.70	1105.70	
Year	Wet Density = W ₀ / V ₀	9400	: 7,132	2 202	2,340	2,302	
Year	- Dry Density = $\gamma_{sd}/(1 + m_s/100)$	g/cc	2,051	2,123	2.178	2.105	

Determination of Moisture Content:

	Can Nos.					nota nom souch	
10.	Wit of weight matrial» Can	9	176.00	150.00	165.00	189.00	
$-m_{\rm th}$	Wholely material + Can	2	120.70	142.00	154.00	174,00	
m ₂	Weight of water (m-m.)	95	5.30	6.40	10.20	15.00	
my	Weight of can		17.20	15,00	18.00	18,00	
m_{σ}	Weight of dry material many	0	153.60	125,60	136.80	156.00	
m_{ν}	Moisture Cornert (ins Anglix100	× :	3.46	5.10	7.48	9.82	

Moisture Donalty Relationship



MDD = 2.178 g/ca

OMC = 7.46 %

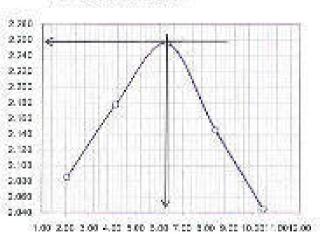
Workhard contact %

Contractor	Cosultero				
Tested by:	Inspected by:	Date			
Contractor's representative:	Unecked by:	Date:			
	Approved by	Date			

			BR Pend	etration 3	est (AAS	SHTO T-1	93)				
Sample C Borrow P	: PR312 ocalion: PK Description: B it Oty =	25+000 LH	0.00	sio 17-09-	505(5)20	Contract I Test Date Pit/Sampl	: 21 09 16				
DATA SH	IEET CULATIONS	5									
CBN CAL	Cacynolys		rrected Uni	e it was all the A-	2,	1	3088	2.1963.2			
No of Bio	wa per layer	2.54		A STATE OF THE PARTY OF THE PAR	ary Smrn	2.3	54mm	ROYOLCHUOL.	9mm		
	10	77		12	3.25	4 10	10 15	117.38			
	30	108			4.79	1	49 54		5.95		
	65	109			0.03		56.44		1:45		
Grade	Gradation Pssing Sieve 0.425	s in mm(%) 0,075 4,04	(%) (%)	(59) 18 70	MDD (g/cc)	OMC (59)	Soundness (%)	LAA (%).	CBR at 19% of 400		
1335	387	(A)	35000	2000000	5335	1 2000		Lawrence Law	1988		
Specil	lostion Requi	rement	0s P s 5	LL 2 25	-	353		LAA 5:40	CBR ≥ 80		
Remarks: Confracto	D.				Cosullant			o Laure			
Tested by					Inspected by			Date:			
Contracto	Contractor's representative:					Checked by			Date:		
					Approved	by:		Date:			

Moisture-Density Relationship AASHTO T-180 for CBR Test. Consultant Contractor. Contract Pkg No.1 Road No.: PR312 Sample Oate : 17-08-2016. Test Date : 21-09-16 Sample Location: PK 25+000 LHS 2:0m. PuSample No. Sample Description: Base Course Meterial 1 ab No. FR312/005 Death: Borrow Pit Oty = Weight of Rammer: 4,54 kg Free fall height = 467 mm, with a flat circular face of dia: 50.8 mm. Determination of Density Trial No. 4 8 Wholf well comparated material emould. 12208 12606 127.02 12635 3 12400 7567 WoolfWoold 7597 7507 7597 THEFT 8 What well compacted materials(W)-4Wa). 10, 4611/0 4911.0 5495.0 50300 4093.0 4 V. Volume of Mould(by Fling water) 2165.70 oc. 2105.70 2105.70 2106.70 2165.70 Wet Density = Well Van 9/00 2,129 2.268 2,099 2,326 2.259 Yes Dry Density $-\gamma_{ed}/(1 \pm m_e/100)$. 2,006 2.175 2.256 2 145 2.045 gloc Determination of Moisture Content : Can Nos. 162.00 165.00 144,00 159.60 10 150.00 virt of weight matrial+.Cait. \mathbf{g}^{\dagger} 159.00 160.00 136.90 157.20 137.50 87. What dry material + Can. H. 12.50 3.00 6,00 7.50 11.80 m_k Weight of water (mirrs) ø 15.00 15.00 18.00 17.20 18.00 2017 Weight of can. 9 144,000 118.90 119,20 $\Pi_{\mathcal{A}}$ Weight of thy material (mileny). 145.00 140.00 ø 2.05 4.14 6.33 4.43 90.46 m Moisture Coment (m; /m/) x100 8 Morsture Density, Metalloriship. 2.760 2,300 2.340 2,330 2,353

the Density, 611



MDD = 2.258 gree OMC = 6.60 %

Mistature content %

Contructor	Cosultant				
Tested by:	Inspected by:	Date;			
Contraction's representatives	Checked by	Date:			
	Approved by:	Date:			

Moisture-Density Relationship for Different Blows in CBR Test(T-193)

Consultantes

Contractor

Contract Pkg:No::

Road No.: PR312

Sample Date : 17:09-2016

Test Oate 1:21-09-16.

Sample Location: PK 26+000 LHS 2.0m

Pit/Sample No.:

Sample Description: Base Course Material | Lab No: PR312/005

Depth

DETERMINATION OF DENSITY

No. of Blows per layer	10 Blows	30. Blows	65 Blows	
Mould No.		01	52	C3
WL of compacted wet materials +Mould	9	13310	13659	13476
WF of Vould	g	8670	8732	8475
Wt of wet compacted materials in mould	а	4840	4627	5001
Volume of Mould	60	2109.5	2107.6	2120.3
Wet Density = What wet compacted materials/volume of mound	g/cc	2,199	2.290	2,359
Moisture Content	96	6.01	8,23	637
Dry Density-Wet Density((1+m/100))	g/pc	2.075	2.156	2.217

MOISTURE DETERMINATION

No. of blows per layer		3	10		30		35
Moisture Can No		E4	A22	EB	At	A3	A5
Wet of Cam Wet Materials	0	160.00	194.00	210.00	182.00	157.00	179.00
Wt of can +Dry Materials	9	151.00	185.00	199.00	172.00	149.00	169.00
Wt of Moisture	9	9.00	9.00	11.00	10.00	8.00	10.00
W) of can	g	15.90	17.20	15.90	17.00	1820	17.90
Wi of dry majorials	9	135.40	167.80	163,30	165.00	130.80	161.10
Moisture content	W.	6.66	5.36	6.04	6.45	6.12	6.62
Average Moisture Content	V.	6.	01	6.2	23	5	37

Moter:

MDD = 2.256 g/cc. GMC = 6.50 %

Dontractor:	Cosultant:				
Tested by	Inspected by:	Date:			
Contractor's representative:	Checked by:	Date:			
	Approved by	Date:			

Consultant

Contractors

Contract Pkg.No.:

Road No.: PR812

Sample Date: 17-99-2016

Test Date : 21,69-16

Dooth:

Sample Location, PK 25+000 1HS 2.0m

PWSample No.:

Sample Description: Base Course Material

Lab No. PR312/005

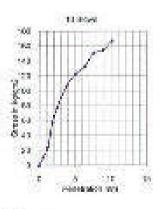
Comew. Pit. City =

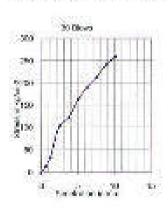
CBR Test (T193): Swell and Pennetration Sata

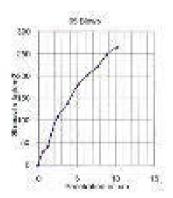
SWELL DA	TA			1000		Suncharge Weights:	9.554	20	and the same of
Cale Tone	Remerks	Min.No. 1	H(mm) =		Miskat2 mmn -	113	Miss 45.1.3 (Hours) =	105	
	e mamarca	Feading	Feating norm 8		Reading in men	- Swell %	Beading himm	Swc13:	
10/02/16	4	Star	2.9	66	- 0	2.64	3	4.280	0
	245	777	3.0	2	0.03	2.75	1.09	4.360	0.02
	408		3.0	8	0.09	2.72	9.97	4.400	0.08
	725		3.1	2	0.12	2.84	0.47	4,425	0.06
90.6000000	4600	Extend.	7.1	8	0.49	7.34	0.42	3.407	0.44

ъ.	
er.	

Parente	933		Proving Ring Heating and Stress								
CALL STATE OF THE			110 Blons			(30 Blows			(85 840W)	d	
inh	0.0	[Sat Founding	courro las	Street in 120002	Cut Seading	Load in Wil	Stream in greats ²	fical Street ng	Loodings	States in legitors ¹	
0.000	0.00	2	0.000	0.000	- 4	0.5000	0.000	2.0	0.0000	0.000	
0.006	0.84	8	2,103	11,370	111	2,5921	15.237	Z	6,7842	30,466	
0.000	126	DK:	4,700	244 92Y	25	6,5790	94100	-20	F-1005	42 901	
10/6	1,0	42	11,040	50,160	54	14.1377	74,781	40	19,9123	64.703	
0.100	2.54	66	14734	77.550	90	23,0406	109.247	391	200,77009	1000401	
0.190	5.01	377	20,545	109 532	90	23/9520	134.634	101	26,5545	135,667	
0.500	6,08	88	23,400	123 243	379	31,2866	184.794	790	24.0788	1800.007	
0.250	6.46	ka.	25,240	102.940	139	36.5400	192.481	N.T	DOMAGE	903,564	
0.990	Y.62	100	20,000	150,546	159	40.7928	234.545	1(0)	42,0672	221,522	
0.350	6389	112	36.667	185 490	5.70%	60,0010	\$40,044	:01	47.5689	200,000	
0.400	10.16	121	51,613	167,954	138	49,4250	250.347	150	60,4606	200,000	







Commetted	Cosultant.				
Descripting	Inspected by	Dates			
Contractor's representative	Chadted by:	Deta:			
	Approved by:	Dote:			

Determination of California Bearing Ratio(CBR) (AASHTO T 193)

Consultanti

18

Confractors

Contract Pkg.No.:

Road No.: PT312

Sample Date : 17-09-2016

Test Date : 21-09-15

Sample Location: PK 25-000 LHS 2001

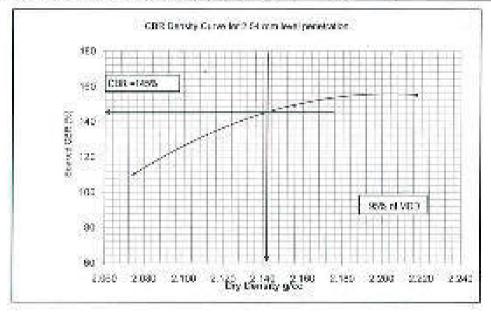
Alab No. PHS12/905

Sample Description: Base Course Material

CISR Calculation :	10 these	30 Blows	RS III care.
1001 701 374300-1	Shoos of 2 (4mm* 1977,640 kg/cm²	Shoos at 2 Gemmi 106,2467 Righan ²	Strass at 2.64 min- increase in spanie.
DBB Caculations from connected fisal / streets	CBR : 110.19 %	OSR - 149.54 S	CBR+ 199,444 %
	89056-315,03mm- 122,045 kg/bm ¹	86 cm al 5 05 mm - 184,784 - 1847 m²	Black of Subbrane 180,027 Fg. Nach
	DBH = 11728 %	COR = 158.35 %	CBD = 171.45 %

Mosture-Density Data from sheet 1 COR MOT	Novel blows	10	700	2.247	
CARCOLOGICAL CONTROL CONTROL CONTROL	Dry-Density . g / co	2.075	2.156		
Corresponding CBRs from 2.84 rom perioristion level	Corrected Cisit (%)	110.19	149,54	165.44	

Plotting value of Waximum Dry Density (MDD)	MOD	9400	COR Recubics)
Plotting value for 96% of Maximum Dry Density (MDD)	2.143	0,400	145



Cottrado	Creatiant:				
Tosled by	naported by:	Date:			
Contractor's representative	Checked by	Date			
	Approved by:	Date			

Sieve Analysis of Fine and Coarse Aggregate

Consultanti

Contractor:

Contract Pkg.No.:

Rose No.: PR312

Sample Date : 17 09 2016

Test Date 1:21-09-15

Sample Location: PK 25+000 EHS 2.0r 0

PIVSample No.:

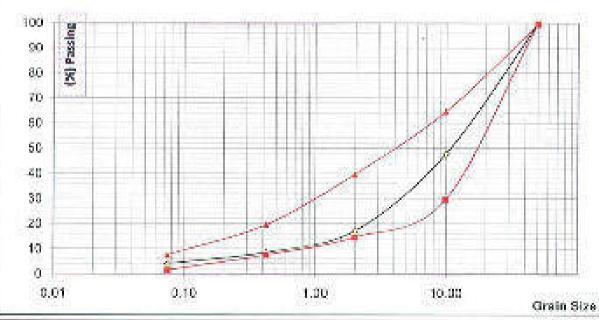
Sample Description: Base Course Material Lab No: PR312/005

Depth::

Test Method : AASHTO 127/188 Borrow Pir Cty =

Weight of dry soil + weight of can:				9	Weight of Can		0
Weight of a	dry sod:	secessors respective	5243.00	Я	ALOROS LITOROS	anana areas	
ASTM	SE W W	Weight	Comulative	Cumulative	Passing Ferd	entage (%)	1000000000
Sheve		wieght retained(g)	200 Carrier 1987	Observation	Report	Specification	
2*	50.00	0.00		0.00	100.00	100	100
199	25.00	1237.00	1237,00	23.59	26.41	78	
3/8"	10.00	1494.00	2731.00	52.09	47.91	49	30.65
W 10	2,000	1615.00	4346.00	82.88	17.11	17	15-40
W 40	0.425	451.00	4797.00	01,49	8.51	1.9	8-20
N 200	0.076	234.00	5031.00	95.95	4.04	4:	2-8
Pan	-0.076	212.00					

Grade A



Contractor	Consultant:			
Tested by	Inspected by:	Date		
Contractor's representative;	Checked by:	Date:		
	Approved by:	Date:		

Plasticity Index Test AASHTO T-89 and T-90

Consultant

Contractor:

Contract Pkg No.:

Road No. PR\$14D, NR13

Sample Date : 17 09 2018

Test Date : 21-69-16

Sample Location: PK 25-000 LHS 2.0m.

Pit/Sample No.:

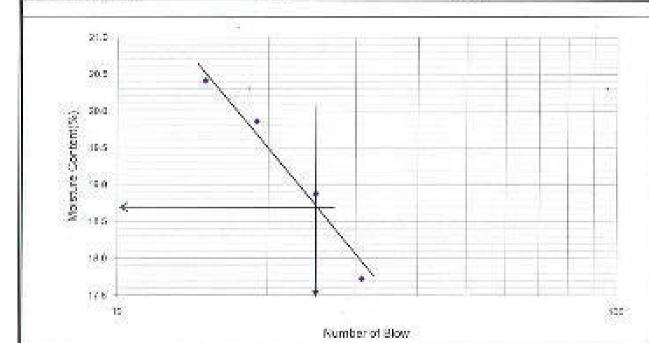
Sample Description: Base Course Material

Lab No: PR312/005

Eapth :

Borrow Pil Diy = Data Sheet

	Liquit Limit (나)									
Aurober of blows			15 C19	19 A2		31	36	2,010	Platic Limit (%)	
Can Number		K1				MA		G7		
VV1	Weight of can + Wet soil	9	27.00	27.30	26.90	26.90		26.50	27.80	
W2	Weight of can + Dry soil	9	24.10	24,40	24.20	24.00		24.50	26.00	
W3	Weight of can	9	9.90	9.80	9.90	9,90		10.00	10,00	
304	Weight of water = (W1-W2)	9	2.90	2.90	2.70	2.50		2.00	1.80	
W5	Weight of dry soil = (W2-W3)	g	14.20	14.00	24,30	14.10		14.50	16.00	
77/6	Moisture content =(W4/W5*100)	96	20 42	19.86	18.88	17.73		13,79	11.25	
LL	Liquit limit (from graph)	1%		18.70				12.52		
PI	Plastic Index	26		6.18						



Contractor	Cosulant					
Tested by	Inspected by:	Date				
Contractor's representative;	Checked by:	Date:				
	Approved by:	Date				

Provincial Roads Improvement Project ADB Loan No. 2839-CAM/8254-CAM

Feasibility Study on Second Provincial Roads Improvement Project

Appendix-II B

Table 2D-1 Summary of Additional Laboratory Test Results for PR 1534 (Existing Subgrade/Below Lateritic Wearing Course and for Lateritic Wearing Course Materials)

Provincial Roads improvement Project ADB Loan No. 2839 CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

	CBR Penetration Test	(AASHTÓ T/193): Result S	ummerv	
Confrat No.:	ODIV FORGULARINE 1001	And opening the section of the control of the contr	Road No: PR	
Contractivo.; Lab. No		Contractor: Sampled No.: S-01	Hoad Not PR Date Test:	.1534 20 69 16
Location 05±000 LHS	150	Date Sample: 17-09-16	Borrow Pit 1	20,09,16
Description: Existing Ro	- C-170-1011	Sampled By: ME	Beeth: 0.0 - 0	0.40000
Seeking started on	20-00-16	CBR Testing Date	24 09 16	150
GUERT & SON NOT OF L			FESTER 1988	2200
	MDD(g/cc): 2.340	g/ec OMC(%):	5.75	26
DATA SHEKT				
OBE CALCULATIONS	900 00%	(2001-200-2002	1 10	131600
No of Rimers not losser to		Unit Lose(Kg/cm²)	10.0	R (%)
	2.54mm	5.06mm	2.54mm	5.08mn
10	15.01	51.67	21,33	49.21
30	94.64	81.11	49.21	77.24
65	92,14	86.28	59.88	94,56
CBR Reporting	14	.08 mm penetration level = 106		\$6
CBR Reporting CBR (%	104 104 207 1044	.05 mm penetration level = 105 Stof Specified Dry Density (AASHTO T-193)	Moiatore C	contact (MC) rding (M)
	104 104 207 1044	N of Specified Dry Density	Moisture C at Mos	Sorted (MC)
CBR (%	104 104 207 1044	S of Specified Dry Density (AASHTO T-193)	Moisture 6 at Mou	Contest (MC) rding (%)
CBR (%	104 104 207 1044	S of Specified Cry Density (AASHTO T-193)	Moisture 6 at Mou	Contact (MC) rains (%)
CBR (%	104 104 207 1044	S of Specified Dry Density (AASHTO T-193) 90 95	Moisture 6 at Mou	Contact (MC) rains (%)
80.00	104 104 207 1044	S of Specified Dry Density (AASHTO T-193) 90 95	Moisture 6 at Mou	Contact (MC) rains (%)
CBR (% \$0.00 47.00	(A)	S of Specified Dry Density (AASHTO T-193) 90 95 96 100	Moisture 6 at Mou	Contact (MC) rdng (M) 891
CBR (% S0.00 47.00 47.00 Tested by Contractor Saing Valha	What	S of Specified Cry Density (AASHTO T-193) 90 95 96 100 sseed by Consultant	Moistone Cat Mos 5 Checked by Ca	Contact (MC) rding (M) 291 391 costollant
CBR (% \$0.00 47.00 47.00 Tested by Contractor	What	S of Specified Dry Density (AASHTO T-193) 90 95 96 100 seed by Consultant Sophanny	Moistone 6 at Mou	Contact (MC) rding (M) 291 391 answillent

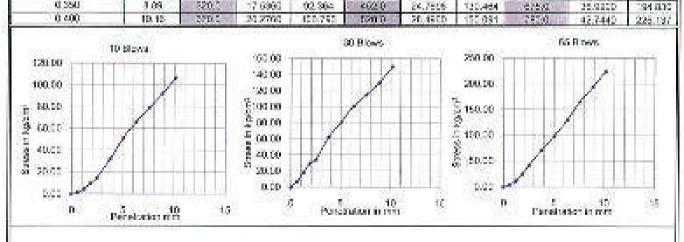
Korea Consultant International

Moisture-Density Rela-	donship	a ror iban	erent bi	ows in c	BK lest	[1-12-1]			
Contrat No.: Lab (No.: Location (Io-(00) HS_1 am Description: Existing Road (Laterite)		Contracto Sampled I Date Samp Sampled I	No.: 8-01 ic: 17-09-16		Road No. PR 1534 Data Tast : 20-08-16 Bornew Pt 1 Depth: 0.0 - 0.18m				
DETERMINATION OF DEVSITY									
No. of Blows per layer	10 8	lowa	30 E	llows	65 Blows				
Mould No.	C	1		02	c	3			
WL of compacted wet materials + Mould	S	33	115	- 53	906	1,2	095		
WLof Mould+Base Plat	9	67	715	::88	13.7	67	47		
Whol wel compacted materials in mould	0	46	44	្ន	188	5.9	48		
Volume of Would	co	321	36	S21	20	23	33		
Wet Density = Whof wet compacted materials/volume of mould	g/cc	g/os 2.172		2.362		2.607			
Moisture Content	%	5.74		6.10		5,88			
Dry Density-Wet Density/(1+m _c /100)	g/pc	2.054		2.245		2.368			
MOISTURE DETERMINATION									
No. of blows per layer		10 Blows		30 Blows		66 Blows			
Moisture Cen No.		811	137	B19	B12	B21	830		
Wet of Can+Wet Motorials	90	415.50	3813 70	307.80	26020	-364.40	392.80		
WLof can +Cry Materials	9	394,50	374.30	847.90	342.00	345.90	372,40		
WI of Moisture		21.00	18,40	19.50	18.70	18.90	20.40		
Wilofloan	0	.33.15	32.62	25.19	32,64	35.07	126.57		
Aft of dry materials	- 9	301.61	244.06	322.71	109.45	312.53	947.63		
Moisture content	36	5.87	5005	K.17	2.04	5.91	5.66		
rage Mohture Content %		6.74		5.10		5.89			

Project Management Unit 3:

ADB Loan No. 8254-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project Determination of California Bearing Ratio(CBR) (AASHTO T-183) Contrati No.: Road Not PR 1534 Contractor Lab No. Sampled No.: 8-01 Date Test: 20-09-16 Legation: 05+000 LHS 1.6m Date Samplet 17-09-16 Borrow Fit 1 Description: Existing Road (Laterile) Depth: 0.0 - 0.18m Sampled By: ME: Soaking started ord, 20-09-19. CBR Teating Date: 24-09-18 MDD/g/eer; 2,340 OMC(%): 5.75 CBR Test (T193): Swell and Penetration Data SWELL DAYA Surcharge Weights: 4,581 10 Mid No. 1 | Etterni) -9665 Mid No. 2 | Homen! -061525 Mid No. 3 | Entremit # Case Time. Remarks Reading in mitt. Reading in mm 84013 Reading in remi Swell Se Seed S. 20-08-16 4,300 Start 381 D ñ. 21 09 16 8.00 203 0.02 0.00 8 0.00 72-09-16 8300 264 0.03 0.00 0.00 23.09.16 8,00 294 0.03 0.0000.00 24-09-16 Ended 8.00 364 0.03 0.00 0.00 Proving Bling Reading and Street Perenation. Mould No.G1 (10 Blows) Mould No G2 (30 Blows) Mould No.CS (85 Blows): 0441 Stower in Out Stressin Since in note Load to kN Food in 89. Dial Breading mm. seed only Bouches. 80/002 Hasakoo kg/cm² kg/tin²: 0000 0.00 0.0000 DINGER 0.0 OD. 0.000 CO. 0.2000 0.0000 0.000 0.025 0.2740 1.4245 0.0765 0.64 1.44% 7,505 15.0 4.640 2.050 0.6766 4.33 < 646 40.00 100.0 3,4524 9.194 2,3016 2 123 40.0 2.075 34.4 1.91 1,88302 412.0 2 6444 29 (730) 4.0224 40.516 32.0 25,400 0.100 2,6490 146.0 2.54 52.0 15,009 4200.00 6.6763 34,6390 3.0003 42.140 0.1602.41 112.06.4376 13/3/27 270 11 EP16 62 634 25000 18,7100 72.1900.200 5.00 9,5092 15, 3068 81 107 16,8542 99,291 175.0 51,688 284.6 344.0 700 D 62 (20g) 639 12 0000 66,266 101,022 200 0 19,1800 24,6500 120,887 0.200 1.802 15,0700 79.375 40010 24,9200 115,435 TOTAL 34-5420 165,065 125.1 0.350 3.09 220 17 6000 02,364 462.0 34 1130 35,9200



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Saing Vallis Lab Technician Date:

Lab Technician Date

Meas Sophanny

Chuon Sokcheak Material Engineer Date

Provincel Roads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

	10,000,00	nination of California Be	aring Ratio(CBR)	AASHT	O T-193)				
Lab N Local	al No.: (o.: (on: 65+600 LHS_1.5m (boon: Existing Road (Le	storite)	Contractor Sampled No.: S-01 Data Sample: 17-0 Sampled By, ME		Road No: PR.1534 Date Feat: 26-09-16 Borrow Pit 1 Depth: 9.0 - 9.18m				
that they all year.	Seen committee		AASHTO T-193)		acompany of the	239.00200			
	CBR Calculation :	10 Blows	30 Blows			65 Blows			
	COR CONTRACTOR	Streak at 2.54mm= 15.01	Stress at 2 Simmer	34.54	Strong of	2.54 mm=	42.14		
		sg/cm ²	A 100 CO	kg/cm²			kgran		
oad i s	aculations from corrected these of Form No. 6A	CBR - 21.38 K Stass at 5.08 nm - 61.67	CBR = 45.21 Street at 5.00mm	A.	CBR =	09.05	PE MANAGE		
greiche		Straso at 5.08 mm= 61.97 kg/cm ²	Shoos at 5 homme	.61,11 kg/cm²	Strees at	D.A.Brinstin	98.25 kg/cm		
		CBR = 40.21 %	CBR - 77.24	%	CHR =	94,56	8		
da komo	ie Censily Data from a rect	reg un	343.9	290.5	272.7	85			
			327.2	2,054	2.245	2.968	8		
Comerc	periding CBR from 2.54 ms	n penetration level	Corrected CBR (192)	21.33	49.25	59.80			
Souked CISP (%)	65.00 60.00 66.00 50.00 40.00 25.00 25.00 25.00 25.00	CBR = 47.00%	95 % of	MOO		•			
	15.00		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	and the state of			114		
	10.00	90 % of MDD							
	1.00			4					
	2 820 2 348 2 060 2 3	50 2,100 2,120 2,140 2,165 2,180 2.	200 2 220 2 240 2 250 2 5 ry Denaity gloc	93 2 300 3.	320 2.240 3.36	0 2 300 2 40	0 2.420		
Teste	ed by Contractor	Witnessed by	Company of the Compan		Checked by				
100 Car	g Vatha Fechnician	100000000000000000000000000000000000000	Maas Sopherny Lab Technician Dale:			Chuon Sokoheak Vaterial Engineer Oass			

Korea Consultant International

Sonnal.	No	Costra	orbor.		o calculation and	Sood No. PS	4604
ab No			ed No. (8-01)		Date Test : 20-09-16		
	n: 05+000 UHS 1.5m	4.000,000,415	ample: 17 0	5 45	3	Borrow Pit 1	10.20
	tion Existing Roset (Laterile)	10000000	ec By: WE			Depth 0.0 - 0	d Days C
	of Rammar, 4,581 kg , Free felt height - 447 r			on which was	S cores	COLUMN TO C	3800
The second second	ination of Density	DOOR PROCESSO	arranta ta		0.111111		
MILLOON	Trial No.			Harris I		(9	W.
W	TWt of wet compacted material-mould	-1	9850.0	1062000	10500.0	10835.0	10450.0
W.	Whof Mould+Base Plat	9	5024.0	5624.0	2624.0	5624.0	5624.0
Ny ,	Wt of wet compacted materials (W ₄ -W ₄)	9	4226	4905	6266	6266	4829
V	Volume of Mould(by filling water)	CO.	2138.00	2138.00	2138.00	2138.00	2135.0
Test.	Wet Density = W ₁ /V ₂	gioc	1,977	2.295	2.458	2.458	2.257
Yes	Dry Density = $\gamma_{eq}/(1 + m_e/100)$	groc	1.949	2.224	2.336	2.291	2,067
	ination of Moisture Content:	[8:44]	1-47-	1.447	2.000	1	2,000
	Can Nos.		86	B10	B36	B25	B7
76	Wtof weight material+ Can	1.9	408.40	420.30	374.10	376 CD	412.50
2016	What dry material + Can	g	403.20	408.40	356 80	352.60	280.40
Bly	Weight of water = (m-m _i)	9	5.20	11.00	17.20	23.40	37 10
m	Weight of can	0	31.01	35.11	25.29	34.30	32.52
m	Waight of dry material - (m _i -m _i)	0	372.18	375.29	331.61	321.30	347.78
m	Moisture Content = (m. /m.) x100	16	1,40	3,17	6.22	7.28	9.23
2 (8) 2 (3) 2 (2) 2 (2) 2 (4) 2 (4) 2 (4) 2 (5) 1 (5) 1 (6) 1 (6) 1 (6) 1 (6)	60 60 60 60 60 60 60 60				MDD =	TOTALE:	g/esc %.
1.32 Taste	3.00 1.00 2.00 3.00 4.00 5.00 6. Workland con			10.29 11.00	Checked by	Consultant	

Meas Sopharmy

Lab Technician

Date:

Saing Velha

Date:

Lab Technician

Chuon Sokcheak

Material Engineer

Date

Provincial Roads Improvement Project ABB Loan No. 2839 CAM (SF) ABB Loan No. 8254-CAM

Korea Consultant International

		Sleve A	nalyala of Fi	ne and Coarse	Aggregate :	-00		
Contract No				Contractor:		Road No. Pi	3,1624	
ab. No.:			34	Sampled No.:	5/01	Date Tesh:2	3-09-16	
newton: 0	5+000 LHS	Ser		Date Samure	12.00.10	Borrow Pl01 Depth: 0.0 - 0.18m		
	: Existing Roa			Sampled By: N				
			£3	paragraphy by R	15			
	od : AASHTO					That: 01		
Weight of a	rry soil + weigh	nt of cam:	6806.6	9	Weight of can	100.5	9	
Watche of t	nett of decision		6706.0	3	Test Method:			
ASTM	EWW DA	Weight	Cumulative	Cumulative	Passing Pa	rearrage (%)	Confirm	
Steve	Size (mm)	Retained(g)	wieght retained (g)	ratained (%)	Observation	Report	Specification Grade	
37-	76.00							
2"	60.00	2			VIII			
11/2	37.60							
1"	25.00				8			
3/4	19.00		-	- CO		-		
3/8"	10.00	815.3	615.3	12.16	27.64	- 35		
9.4 9.4	478	utad	010.0	1410	67.01	1 00		
84			-		-			
4.8	2380							
9.10	2,000	2882.40	3497,70	52.17	47.93	48		
W 18	1.160	1387/073	The Carlot Action	And the same	1031800	0.000		
V 30	0.600		V es entre sentin	A STANDARD	700,0000			
# 40	0.426	1370.1	4872.50	72.67	27.38	27		
¥ 50	0.000	20 - AMULTOVO	7,860.04	15 000500	200000	10.000		
W 00	0.180							
#100 #200	0.150	895.4	5768.20	88.03	13.07	10		
Pan	0.075	0.0	3136.20	80.80	13.01	23.49		
CAN ROLL	100000	1000	221703	Analysis	7	16		
95	222 6 100 1	1110	3,000	/maryers		- 17771113		
05	2				12			
76	Pasking (%)				1			
155	8			1	8			
56	8							
900	153187						2.554	
75								
36								
25								
15					1 .			
3.1					12	3 wind the from 1		
a c		5.8	-	1	45			
Tested by	Contractor		Witnessed	by Consultant		Checked by	Consultant	
Saing Val	CORP.		Mesa Sopt	00000000		Chuon Sokor	67/05/05/1	
Lab Tech	niciam		Lab Techni	ician.	838	Material Engl	neer	
Date:			Diaper			Date:		

Provincial Roads Improvement Project 408 Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

Plasticity Index Test AASHTO T-89 and T-90

Contract No.:

55

Contractor:

Hoad No: PR 1534

Lan No.:

Sampled No.: 5-01

Date Test:23-09-16

Bonow Pit 1

Location: 05+000 LHS_1.5m

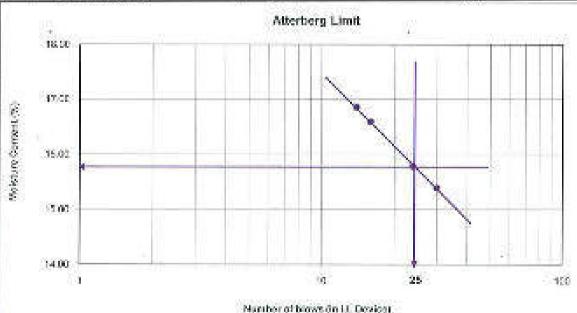
Date Sample: 17-09-16

Depth: 0.0 - 0.18m

Description: Existing Road (Laterite) Test Method : AASHTO T-89 and T-90 Sampled By: ME:

Data Sheet

	Liquid Limit (LL)								
Symbol	Description	No of blows	14	16	24	30	Plastic Limit (PL)		
- Cyrina		Min Max	\$30	\$36	S18	524	58	833	
96	Weight of can + Wet soil	19	\$1.10	31.45	20.17	20.09	1294.50	24.24	
W ₃	Weight of can + Dry soil	9	26.85	26.32	25.24	27.73	23,52	23:32	
W ₂	Weight of can	9	15.79	10,25	15.02	. 15.00	16.58	15,88	
W ₄	Weight of water = (W _F -W _c)	9	2.21	2.17	1.50	3030	0.00	0.92	
Wy	Weight of dry soil = (W ₁ -W ₂)	9	18.40	13.07	12:22	11.76	7.003	7.44	
W_{ij}	Maisture content =(W _a /W ₃ *100)	25	15.97	16.00	19.70	10.40	12,52	12.87	
1.17	Liquid Limit (from graph)	90	15:80				12.44		
PI	Plastic Index	95.	3:36						



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Chuon Sokoheak

Saing Valha: Lab Technician Wess Supharing

Lab Technician

Material Engineer

Date:

Date:

Dete:

Provinciat Roads, Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8284-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project

	Sun	mary of t	est R	esul	t (Emban	kment	Mat	erial)	
1.Description									
Consultant	KGLEn MEC	gineering Co C/SBK/S/(W)	Lie / AC		Contractor			GUMKAN	e-vsc JV
Late No.		183-54		Date of sampling		05-01-2015		-2015	
Sample No.		5.125	Oats completed of testing		of leading 25-01-2015		lesting 25-01-2015		
Description		Silty Clayey &Sand For Embankmet Materials		Location		Borrow Pit PK: 184500/BHS_6 PR_160B-W,Size[60x50x3.3			
2. Test Result		0			720				
	1.Sieve (%)	2.5	Atterbe	ng Lim	út I	4.P MDD (g/sc)		ctor	5.CBR (%)
Hem	€ 0.075mm	EL (%)	PL (8.)	p ₁			OMC (%)	(90% of MDD)
Test Result	13.97	15.80	12/	44	3,36	2.340		5,75	30.00
Specification	14	(EV	82		8	5529		5555	24
Decision	9.5	89.0	38		8	(6-1			Аспоря
3. Engineer's C	omment								
							_		
l. Cartification									
ten	Ne	me		Po:	sition		De	te	Signature
Tested By			91	Lab Technician					
Checked By			M	aterial	Engineer				
Raviewed By			alota	Water	al Engneer				
Approved By	è		Re	sident	Engineer				

100

Provincial Roads Improvement Project ADB Loan No. 2839-CAM (SF) - ADB Loan No. 8254-CAM

Korea Consultant International

	CBR Penetration	on Test	(AASHTO T	-193): Result Su	ummary	
Contrat No.: Lab. No.: Lecation: 45+000 RHS Description: Existing Re Spaking started on	CONTROL OF THE PROPERTY OF THE PARTY OF THE		Contractor: Sampled N Date Samp Sampled 0 CBR Teatin	lo. de: 17-09-16 y: ME	Road No: PR Date Test: Becrow Pit Depth: 0.0 - 0 24-09-16	20-09-18
	MDD(g/ec); Ta shert		g/ec	OMC(%):	9.30	%
DATA SHERT						
CBR CALCULATIONS						
No of Blows per layer	A contract of the contract of		init Load(Kg/		The second secon	IR (%)
A IN THE PERSONNEL PROPERTY OF THE PERSONNEL	2 94mm		100000000	5.08mm	2.54mm	5.08mm
				22.80	.22.56	21.72
30 38.08 65 86.23			58 02 101 60		54.54 92.69	66.25
-85	Standard Unit Lo Standard Unit L	ed at 2.5 oad at 6.1	vi Load/Stank 4 mm penelo	dard Unit Load 111 agen level = 70.36 ration level = 105	i 00 Kejam²	96,73
CBR Reporting:	CER≑ Con Standard Unit Lo Standard Unit L	ad at 0.0	VI Load/Stand 4 mm penelo 08 mm penel 6 of Specified	dard Unit Load 111 ation level = 70.36 ration level = 105 (Bry Danally	00 Kg/cm² Kg/cm² Mosture	Corteo((MC)
	CER≑ Con Standard Unit Lo Standard Unit L	ad at 0.0	VI Load/Stand 4 mm peneln 08 mm penel	dard Unit Load 111 ation level = 70.36 ration level = 105 (Bry Danally	00 Kg/cm² Kg/cm² Mosture	92 33
CBR Reporting:	CER≑ Con Standard Unit Lo Standard Unit L	ad at 0.0	VI Load/Stand 4 mm penelo 08 mm penel 6 of Specified	dard Unit Load 111 ation level = 70.36 ration level = 105 (Bry Danally	Kg/om ² Kg/om ² Mostjura at Mo	Corteo((MC)
CBR Reporting: CBR (%	CER≑ Con Standard Unit Lo Standard Unit L	ad at 0.0	vi Load/Stand 4 mm peneli 08 mm penel 6 of Specified (AASHTO	dard Unit Load 111 ation level = 70.36 ration level = 105 (Bry Danally	Mosijura	Content (MC)
CBR Reporting: CBR (2 30.00	CER≑ Con Standard Unit Lo Standard Unit L	ad at 0.0	VI Load/Stand 4 mm penelo 08 mm penel 6 of Speniled (AASHTO	dard Unit Load 111 ation level = 70.36 ration level = 105 (Bry Danally	Mosijura	Content (MC) Foing (Ys)
CBR Reporting: CBR (% 30.00	CER≑ Con Standard Unit Lo Standard Unit L	ad at 0.0	9) Load/Stand 4 mm penel 08 mm penel 5 of Specified (AASHTO 90	dard Unit Load 111 adon level = 70.38 retion level = 105 (Bry Density T-193)	Mosijura	Content (MC) Foing (Ys)

Saing Valha Lab Technician Date

Meas Sophanny Lab Technician Dister

Chuan Sokcheak Material Engineer

Date:

Kingdom of Cambodis Ministry of Public Works and Transportation Project Management Unit 3 Provincial Roads Improvement Project ADB Loan No. 2539 CAM (SF) ABB Loan No. 8264 -CAM

Korea Consultant International

Moisture-Density Rela	uvinanii	O LOST CARL	erent or	ows in c	BR Test	(1-185)		
Contrat No Lab. No.: Lecation: 45+000_RHS_1.5m Description: Existing Road (Latente)		Sample: Date Sample: 17-09-16 Box			Date Test Borrow Pi	oed No. PR.1534 ate Tast : 20-09-16 erow Pil: epth: 0.0 - 0.07m		
DETERMINATION OF DENSITY			1000000					
No. of Blows per layer		10 Blovas		30 B	llows	65 B	lows	
Mould No		В	11	E	32	SE	3	
VI. of compacted wet materials +Mould	9	11235		139	665	12	025	
Wrof Mould (Base Plat	g	67	83	88	123	70	05	
All of wat compacted materials in mould			172	47	42	50	20	
Volume of Would	dic.	21	44	21	41	21	31	
Net Density = WA.of wet compacted materials Volume of mould	g/cc	2.0	186	2.3	215	23	S66	
Voisture Content	%	9	22	9.	27	9	17	
Dry Density=Wet Density/(1+m,/100)	gloc	93	310	2.0)27	2.5	68	
MOISTURE DETERMINATION								
No. of blows per layer		10 B	lows	30 B	lows	65 B	lows	
Moisture Can No.	707	B22	B2	86	B23	B33	BB	
Wet of Can+Wet Meterials	9	261 00	340.00	304.50	125.40	138.70	207.50	
At of can +Dry Materials	9	334.00	318.90	309.30	299.90	300390	312,20	
At of Moisture	- 9	2700	28,50	25:20	29.50	25,60	25,90	
At of can	9	22,65	26.38	3121	30.97	24.71	32,97	
At of dry materials	9	201.25	280.61	270,09	261 93	270.18	201.23	
Moisture content	%	9.32	2(9)0622	9/05	9.46	9.34	9,00	
Average Maisture Content	- %	9.	22	9.	27	9.	17	

Kingdom of Cambodia Ministry of Public Works and Transportation Project Management Unit 3 Provincial Roads Improvement Project : ADD Loan No. 2539-CAM (SF) ADB Loan No. 8264-CAM

Korea Consultant International

Moisture-Density Relat	iidenoii	o for Diff	lerent Bl	ows in C	The second second	The second second	
Contrat No Lab. No.; Location: 45+000: RHS_1.5m Description: Existing-Road (Latente)	+	Contracto Sampled Date Samp Sampled	No.: (c: 17 09 16	6	Road No Date Test Berrow Pi Depth; 0.0	; 20-09-16 t:	
DETERMINATION OF DEASITY							7
No. of Blows per layer		10 B	llows	30 E	ikriwa	65 B	licres
Mould No.		В	11	E	32	⊕E	33
Wit of compacted wet materials +Mould	9	33	235	1.1	535	12	025
Wtof Mould+Base Plat	я	67	183	88	28	70	05
Wt of wet compacted materials in mould	9	44	172	47	42	50	20
Volume of Mould	ec.	21	44	21	41	21	31
Wet Density = Whot wet compacted materials/volume of mould	g/oc	2.0	166	23	215	23	G6
Moisture Content	9%	9.	22	9	27	9	17
Dry Density=Wet Density/(14m,/100)	g/oc	1.5	910	20	27	2.5	168
MOISTURE DETERMINATION	70	-					
No, of blows per layer		10 8	lows	30 B	lows	65 B	lows
Molature Can No.		B22	B2	86	B23	B33	BB
Wet of Can+Wet Materials	. 0	381.00	045.00	334,85	325.40	120.70	337.50
Wt of san +Cry Materials	0	504.00	315,90	300.33	259.50	- 1900.90	312.20
WLpf Moisture	G	27,00	26.50	25.20	25.90	26.80	25,30
WI of can	g	32.66	26.38	31,21	30.97	24.71	90.97
Wt of dry materials	5	294.35	283.55	275,09	250.90	276 19	201,22
Moisture content	%	0.27	39.16	2005	0.45	9.36	9:00
Avorage Moisture Content	34	9.	22	9.	27	9.	17

Contrat No:

Apr. No.

Provincial Roads Improvement Project: ARB Loan No. 2839-CAM (SE) ADB Lean No. 8254-CAM.

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

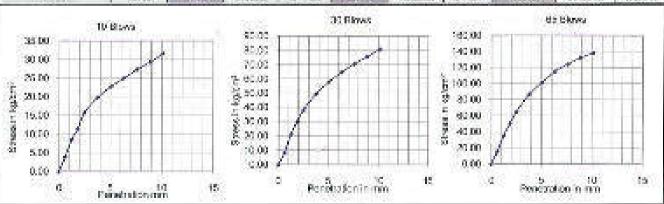
Determination of California Bearing Ratio(CBR) (AASHTO T-193) Road No: PR.1534 Contractor Date Test: 20 09-16 Sampled No.: Location: 45-000 RHS 1.5m Date Sample: 17-09-16 Borrow Pit Depth: 0.0 - 0.07m; Description: Existing Road (Laterite) Sampled By: ME. Scaking started on: 20-09-16 CBR Testing Date: 24-09-18. MDD(g/cc): 2.151 OMC7%E 930

CBR Test (T195): Swell and Penetration Data

ALCOHOLOGICA SPECIALIS		The second second second
SWELL DATA	Surchange Weights	4.591 %;

	The state of	Town or work of	Mid No.1 Hi(mm) =	9686	Mid.No.2 Hi)mm; =	9686	Mic.No.3 Htmm) -	9885
Date	Time	Remarks	Feeding minim	Swell %	Reading in min	Swell %	Reading nimm	Swell %
20409-18	3.45	Start	2 (3 - 10)	0	Committee of the committee of	= 0	50 man (190 man)	0
21-09-16	8,00		T1100019	0.18	152	0.18	(70	0.10
22409-18	8.00		20	0.19	13	0.18	170	0.10
23-09-16	8.00		20	0.19	19	0.20	170	0(10)
24,09,15	0.00	Ended	20	0.19	19	0.70	170	0.10

Periotrati	ore			and the state of	Proving I	ling Reading	and Street	8			
T. M. LANGESTO		Would No R1 (10 Blows)			Mould	No.82 (301	Blows)	Mould N	Mould No B3 (65 Blows)		
(non-	200	Old Booking	Coac in MY	Stress in kp/am*	Dial Reading	Losed in kill	Sirena in kg/t m	Red Reading	Loud in RM	Sintes in regions	
5,000	0.00	0.0	0.0000	0.000	0.0	0.0000	0.000	D.C	0.4000	9.000	
0.025	0,64	14.25%	0.7972	4,541	30.0	1.5440	8.550	720	3,0540	15,575	
0.050	4.77	30.0	1,8440	0.059	7/ 0	4,0552	24.78%	120.0	6,7404	126,552	
0.075	1.93	40.2	2,1920	13,545	125.2	5.7540	20,307	1/80	0.6445	80,800	
0.100	2.54	85,0	3.0640	15.975	430.0	7,7864	33,399	200.0	12,3848	86,233	
0.100	3.83	85/0	3.7872	12,906	142.5	0.4258	40,640	201.0	18.4040	10,440	
0.200	5.08	72.0	4,3290	22 602	201.0	221 0148	58,016	350.0	19.2698	101,500	
0.260	0.35	82.0	4.7576	25 (14	22.5.0	22,7000	64.950	(00.0	21,6200	415,456	
0.300	7.82	2500	5,2060	27.425	24±30	18.4260	(0.718)	430.0	2/3/67/38	124,691	
0.550	3.09	102.0	5.5696	29.445	263.0	14/4134	75.912	450.7	26,2060	182,778	
0.400	10.15	110.5	6,0080	-31,750	2841.0	15.33881	31.107	480/0	25,2040	420,546	



Tested by Contractor

Witnessed by Consultant ...

Checked by Consultant

Saing Vatha Lab Technician. Date:

Meas Sophermy Lab Technician Date:

Chuon Sokoneak Material Engineer Dale:

Saing Vatha

Date:

Lab Technician

Provincial Reads improvement Project ADB Loan No. 2839-CAM (SF) -ADB Loan No. 8254-CAM

Chuon Sokuheak

Material Engineer

Date:

Korea Consultant International

	Detern	nination of Califor	nia Bea	ring Ratio(CBR) (AASHT	O T-193)		
	000 RHS 1.5m Disting Road (La	(erife)		Contractor: Sampled No. Date Sample: 17-00 Sampled By: MC	9-16	Road No: Date Test Borrow Pit Depth; 0:0	20-09-16	5 A
			Test (A	ASHTO T-193)				
CBRÓ	alculation :	10 Blows	100000000000000000000000000000000000000	30 Blows			65 Blows	
		Stress at 2.04mmh	15.05 kg/am²	Stress at 2,54mm=	38.39 19/an²	Stress at	2.54 mm= :	65.23 kg/am
DR Caculatio	rs from corrected From Sur 96	GBR = 22.55	36	GBR = 54.54	%	CBR	82.69	
grapeis	1 3 11 3 11 3 1	Stress at 5 05mmn	27,60 kg/cm²	Stress at 0.00mm;	55.02 kg/cm²	Siress at	6,65m;π=	101.60 kg/om²
		CBR # 21/2	8	098 = 55.25	%	CORP	90,70	*
N-Cycle Persons	ears oo subahan waxa	Commonwood		343.9	269.5	270.7	1 200	-
Abisture-Densi	ty Data from sheet	CORIMO	- 1	29.2	1.910	2,027	2.158	
ansessandine	CBR from 2.54 mit	concretion level		Comeded CBR (%)	22.56	0.027	92.68	
			- 1		1			-
		Dry Denaty (MDD)			1	937	39/00	1
hotting value fr	or 95% of Massmurt	- Dry Dennity (MDD)			3	:044	9/60	
71586504		CBR Density Co	inna for t	2.54 mm level pene	teation			
100,00	F	000000000000000000000000000000000000000		TO THE REAL PROPERTY.				1000
56,00 50,00							4	
85.00			+					
10.00 26.00					1			
70,00		CBR = 59.00%						H.E. 1
8 65,00		VALUE - NEW YOR						
E 55.00	1		1					
\$ 51.00 \$ 51.00 \$ 42.00			1					##
3 40,00		4 4		100				
35.00	CBR = 30.0	0%		95 %	of MDD			100
30.00 25.00	K		1000					-
20.00		80 % of I	MDD					
15.00								EL I
10.00	eso 1,090 1,000 1	920 1.940 1.000 1.90		2 020 2:040 2:060 2:0 y Dansity gibt:	12 2.400	2,193 2,140	2 160 2,133	2.800
			Parallel I	1987		S200000 - 22	V. 2. V.	

Meas Sophanny

Lab Technician

Date:

Korea Consultant International

Louces	Moisture	-Density Rela	attonsh	IP AASHT	O T-180 fo	or CBR Tee	d i	NAME OF THE PARTY
Cortuet		9.5	Confid	otor:			Road No. PR	4534
ab: No	X		Samp	od Mo.;			Date Test 2	0-09-16
ocation	n 45 000 RHS_1.5m		Date 5	ample: 17:08	9-16		Barrow Pic	
Yesering:	for Existing Road (Laterity)		Samp	of By: ME			Depth: 0.0 - 0	.07m
Molght.	of Rammer: <u>4.581 kg</u> , Free fail i	height = <u>447 min</u>	, with a B	et choulen lac	ce of dia: 50	1.4 mm	183	
heterm	imation of Density			THE RESERVE OF THE PARTY OF THE		2017/10/2	-00 777	
and the second	Trial No.		76	10.0	- 1000	1 10	TV	- 10
W.	Willof wet compatited mater	hal+mould	9	10125.0	10460.0	1000000	506300	19450 (
West	Whot Would+Base Plat		9	5624.0	:5624.0	5024.0	5024,0	5624.0
W	Who! wet compacted mater	ials(W-W-)	9	4504	4036	5036	4976	4826
1	Volume of Moukliby filling v	Anten)	00	2108.00	2138.00	2138.00	2138.00	2138.00
Test	Wet Density I = W, / V,		9/00	2.105	2,262	2,395	2,327	2.257
70.0	Dry Bensity = $\gamma_{ad}/(1 + m_a)$:	000	0/00	2.001	2.109	2.151	2.087	1,994
	ination of Moisture Content:		11.4.777.1	7740-7140		I control of		
	Can Nos.			83	B13_	829	B40	B34
m	Wt of weight material+ Can		9	340.40	344.00	299.50	278.30	380.20
10.	Whof dry material + Car-		9	323.20	323.10	276.20	253.00	206,50
100	Weight of water = (m, m,)		9	15.20	21.20	23.30	25.35	34.70
104	Weight of can		9	33.04	31.30	30.86	33.34	33.24
m,	Weight of dry material = (m.	ems)	9	292.18	281.60	245.35	218/06	262.29
m	Meistury Content = (m, /m,)		14	6.20	7.27	9.60	11.52	13.23
2.10 2.00 2.00 2.00 2.00 2.00 1.30 1.30 1.30	80 80 80 80 20 16 80 90					MDD =		g/ee %.
1,97	20							
1.90	03	*	100					
Tests	4.00 5.00 6.00 7.00 6.0 id by Contractor	Nosture conte	0.%	1002 - 1382	14.00 16.00		/ Consultant	
100	; Vatha Technicien	Weas So Lab Tech Date:	0.000,000,000			Chuan Sek Water at En Date:	STATE AND ADDRESS OF THE PARTY	

Provincial Roads Improvement Project ADB Loan No. 2826 CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

Contract Name		Sieve A	nalysis of Fir	ne and Coarse	Aggregate :	error of tour	New-order Commission	
Contrat No	75 T			Contractor	100,000	Road No. Ph	1.1534	
ab. No.:	177			Sampled No.:		One Test 2	3-09-16	
poation: 4	5+000 RHS	1.Sm	536	Date Sample:	17.00.1e	Borrow Fit:		
	n Existing Box	201 C S		Sampled By: k				
			10	Same and Dy, K				
	od: AASHTO	A STATE OF THE STA		a.c.	2006/03/03/03/03/03	Trial: 04	30 1	
Committee of the Commit	ary soll + weig	hi of cars	4845.5	8	Weight of can:	100.5	9	
Veight of a	cry soil		4745.0	g	Test Method:			
ASTM		Weight	Cumulativa	Comutative	Passing Per	oemage (%)	Confirm	
Sleve	Size (mm)	Retained(g)	wieght retained (g)	retained (%)	Observation	Report	Specification Grade	
3	75 00	1						
2'	50 00			17				
11/2	37,50							
1	25.00							
39"	1800		_	-	<u> </u>			
3/8*	12.50	113.1	113.1	2.36	87.62	98		
8.4	475	2137	110	25,300	87.02	20		
24	100					-		
7.6	2.260	DESCRIPTION	Element of the Control	Di secono		Marine S		
2.10	2,000	2148 80	2261.90	47.67	02.33	62		
# 16	1.180			A 1000 5 7 100		0.550		
# 30	0.600	500000	(Nestowness)	9 seesses.	0.000	1/8000 3		
2.40	0.429	819.7	3078.60	64.88	35.12	- 35		
A 50	0.300			300000	0,000,000			
# 80°	0.188							
A 100	0.150			1 - 100		1000		
A 200	0.075	462	3540.90	74.82	25,38	25		
Рет	-0.075	0.0	500	100000000000000000000000000000000000000			1	
23000			Sleen	Analysis				
56	[E]							
200								
et.	E							
76	gines of a			1 2	9111			
68	K.							
59				1			and the same of the sale.	
45				No.				
30			1000	and the second				
77								
26		-			100	to in the county		
3.0		Advertise to			1111 112			
0.	54	0.1	9.0		10			
			14.4					
rested by	y Contractor		yelinessed	by Consultant		Checked by 9	Johsunam	
Saing Va	lina .		Meas Soph	ianny		Chaon Sokol	leak.	
Lab Tech	mazn		Lab Techn	can		Material Eng	neer	
Dete:			Date:	20200		Date		

Kingdom of Cambodia. Ministry of Public Works and Transportation Project Management Unit 3

Provincial Reads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

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Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

Plasticity Index Test AASHTO T 69 and T-90

ContractNess

80.

Lab. No.:

Locadon: 45+000_RHS_1.6m

Description: Existing Road (Laterite). Test Method: AASHTO T-89 and T-90

Data Sheet

Contractor

Sampled No.:

Data Sample: 17-09-16

Sampled By: ME

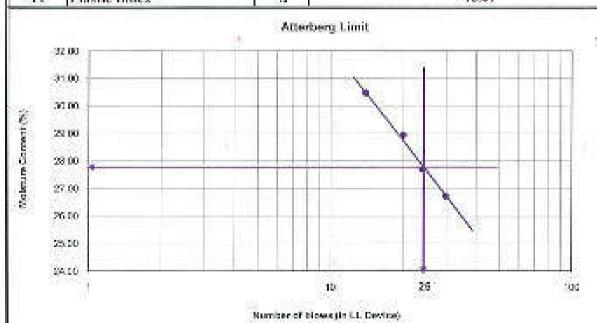
Borrow Pit.

Depth: 0.0 - 0.07 m

Read No: PR 1534

Date Test 23-09-16

	Liquid	Limit (L.L.)-					COMMISSION NOT THE RESIDENCE		
Combat	Description	No of blows	14	20	24	30	Plast	ie Limit	(PL)	
Symbol	Description	Vin No.	S23	S13	529	828	\$32	95		
W ₁	Weight of can + Wet soil	В	29077	29.46	29,74	20.67	24.46	- 24.47		
W ₂	Weight of can it Dry soil	9	26.02	26.39	96.78	02.74;	23.32	20,25		
W,	Weight of can	0	18.00	15,79	15.21	16.78	18.78	18,25	7	
W ₄	Weight of water = (W ₁ -W ₂)	9	3.16	3.07	2.08	2.58	1.34	2017		
547	Weight of dry soil = $(W_2 \cdot W_3)$	8	10.23	10.60	10.57	10.96	0.06	6.36		
Ψ_{ϵ}	Moisture content #(W _e /W _a *100)	- %	20.40	26.95	27.72	20.71	107.25	12.40		
1.1	Liquid Limit (from graph)	- %		27	.80		(== 11	17.39		
0.00	Plastic Index	**		al pay beau	0.00	10.41				



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Saing Valhar

Lab Technician

Date:

Meas Sophanny Lab Technician

Date:

Chuon Sekshaak Material Engineer

Date:

Provincial Roads Improvement Project ADS Loan No. 2039 CAM (SF) ADS Loan No. 5254-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project

	Sur	nmary of t	best F	tesu	it (Embar	kment	Material)	
1.Description			- 10					
Consultant	KCI Er VEC	gineering Co C/SBK/SAW	CLM / PAC		Contracto	ř	GUMKAI	NG-VSC JV
Lab No		T53-54		Date of sampling		06-0	1-2015	
Sample No.		S.125	- 00	Date	completed o	f lesting	25.0	1-2015
Description.	Silty Emb	Clayey &Sand ankmet Mater	For inka		Location			18+500/RHS 650m, coe(60x50x3.3jm
2. Test Result	2							
llem	1 Slave (%)	2.	Atteroe	argillin	i)		4.Procke	5.08R (%)
llem	# 0.075mm	LL (N)	PLO	W .)	Pl	MDD (g/o:		(90% of MDD)
Test Result	26.38	27.80	.80 17.39 10.41		2.152	9.30	30.00	
Specification	St	7:5	88		(E)	LSE:		2.4
Decision	1 15		182		3 1	5245	7525	Accept
Engineer's C Gertification.								
Bare	N	ame		Po	eition		Date	Signature
Tested By			1 99	Lab Te	admician			
Checked By			M	lalena	Engreer			
Reviewed B	y .		int	.Mater	lat Enghaer			
Approved By			FR	esiden	c Engineer			

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

	CBR Penetration	on Test	(AASHTO	f-193): Result St	immary	
Contrat No.:			Contractor	S	Road No: Pf	R.1534
Lab. No.			Sampled N	lo.: S-01	Date Feat:	20-02-16
Location 801000 LH	S_1.5m		Date Samp	de 17-09-16	Bonow Pit:1	1000 PM 1000 00
Description: Existing 8	Road (Laterite)		Sampled E	y: ME	Depth: 0.0+0	0.10m
Scaking started on	20-09-16		CBR Teeti	ng Data I	24-09-16	200000000
	MDD(g/ec):	2.160	g/ee	OMC(%):	8.80	9%

Marrie Braum and bases	Corrected Un	COR (%)		
No of Brows per layer	2.540.01	5.08mm	2.54mm	5.08mm
10	30.60	50.51	43.47	48.11
30	37.52	57.17	93.31	83.02
65	40.41	88.03	57:42	83.84

CBR= Corrected Unit Load/Standard Unit Load * 100 Standard Unit Load at 2.54 mm penetration level = 70.38 Kg/cm² Standard Unit Load at 5.08 mm penetration level = 405 Kg/cm²

CSR Reporting:

CBR (%)	At % of Specified Dry Density (AASHTO T-193)	Moisture Confert (MC at Moulding (%)		
44.00	90	8.35		
60.02	95	8,35		
	95			
	100			

885

Remarks:

Tested by Contractor	Witnessed by Consultant	Checked by Consultant
Saing Varna	Meas Sophanny Lao Technican	Chuen Soscheas Malerial Engineer
Lab Technician		

Kingdom of Cambodia Ministry of Public Works and Transportation Project Management Unit 3 Provincial Roads Improvement Project ADS Loan No. 2839-CAM (SF) ADS Loan No. 8254-CAM

Korea Consultant International

Moisture-Density Relat	tionshi	p for Diff	erent Bl	ows in C				
Contrat No.: Lab. No.: Locarbo:: 60-000 THS_1.5m Description: Existing Road (Laterite)		Contracto Sampled I Data Samp Sampled I	Vo: S-01 e 17-09-18	Ý	Road No. PR. 1634 Date Test : 20-08-16 Forrow Pib1 Depth: 0.0 - 0.18m			
DETERMINATION OF DENSITY		V-	***		4)			
No. of Blows per layer		10 Blows		30 Blaws		65 E	llows.	
Moute No.	,	d	,	.2	1 69	13		
Wit of compacted wat materials.+Mould	9	44	366	133	720	11	850	
Whot Mourd+Base Plat	g	08	66	68	61	60	IJC.	
Wt of wet compacted materials in mould	g	44	84	48	59	50	20	
Volume of Mould	cc	2	37	21	29	21	30	
Wet Density - Woof wet compacted materials/volume of mould	gless	2.0	50	2.292		2.357		
Voisture Content	4.	8.41		8.37		6,28		
Dry Density-Wet Density () +m;/100)	9/00	4.935		2,106		2.177		
MOISTURE DETERMINATION	W.							
No. of blows per layer		10 B	lows	30 B	lows	65 B	lows	
Maisture Can No		B17	B37	B1	B28	B16	B9	
Wet of Car+Wet Materials	A	951.70	367.60	945.00	355.00	348.50	386.60	
Wt of can +Dry Materials	ä	926.40	202.70	325.00	0.30.70	324,40	324,80	
M of Maisture	9	25,30	24.00	24.83	24, 20	24.40	21.70	
Milof dan	9	21.14	32.30	\$1.23	53.13	31.18	32.78	
What dry materials	9	295.29	300.31	289.47	207.57	258.22	289,02	
Moisture content	98	9.67	6,250	8.67	9.17	8.32	3.20	
Average Moisture Content	95	8.41		8.37		8.26		

Provincial Roads Improvement Project ADB Loan No. 2839-CAM (SF): ADB Loan No. 8254 CAM

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

Determination of California Bearing Ratio(CBR) (AASHTO T-193).

Contrat No.:

Contractors

Road No: PR:1634

Lab. No.:

Sampled No.: 5-01

Date Test 20-09-16

Location 80+000 LHS 1.5m.

Soaking started on: 20-09-16

Date Sample: 17-09-16

Somew Pib1.

Description: Existing Road (Laterita).

Sampled By ME:

Depth: 0.0 - 0.18m

MDD(g/ee): 2,160 OMC7563; 8,80

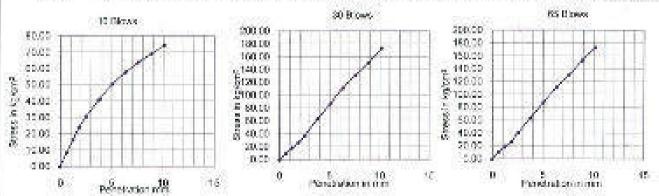
CBR Testing Date: 24-09-16 CBR Test (T193): Swell and Prostration Bata

SWELL DATA

Surcharge Weights: 4,581 kg

Darke	Time	Remarks	Mid.No.1 Hijmint -	2885	Mid No 2 Hijmini =	9585	Mkt.No.3 Ht(mm) =	2655
LARGE.	14000	Francisco.	Reading in mm	Swell %	Reading in mm	Swot %	Reading in mm	Seed S
20 09 15	2.60	Start	The state of the s	0	many divinery in	- 0		- 9
21-02-18	8.00	1	20 -00	0.02	MARKET A SECTION	0.03	3	0,001
22-09-16	9.00		2	0.02		0.84	3	0.04
23-00-16	8.00		Ž	0.02	MILES AT STATE	0.04	4	0.0%
24-02-16	5.00	Ended	2.00	0.02	2	0.04	4	0.04

Panelosti					Browing R	ing Reading	and Stree	D		
WI HI SH	116	Mould	No.41 (10	Blows)	Mould No. A2 (30 Blows)			Mould No.A3 (95 Blows)		
inds.	rono	Dies Poseding	Load in KN	Street in Agrana ²	Chail Menching	bear in kM	Stress in Agron ²	Olal Reading	Lord hisk	Special harding
0.000	0.000	0.0	0.0000	0.000	0.0	0.0000	0.000	0.00	0.0000	0.000
0.026	0.64	30.00	1.6440	5,652	24.0	1 88612	2,814	210	2.1372	11,257
0.050	1.27	57.01	8,1226	10.402	64.5	3 6072	18.473	03.0	0.7264	29/827
0.076	1.93	34.0	4,6032	24.246	98.0	3 08864	25,843	94 D	5.1517	27 132
0.100	2.54	90500	5,8056	30,596	120.0	7.1240	37,823	140.0	7.6720	40.400
0.150	3.04-	142.0	7.7815	40,006	22 0	12,1100	53.78P	272,0	12,7204	-04266
0.200	6.00	78.0	5,5222	50.511	309.0	15,5455	87,158	305.0	15.7140	186 CC4
0.250	0.36	200(5)	10.9600	67,727	366.0	21,0980	111.126	2075.0	21,0960	1111,125
0.300	7,832	100.0	12 1186	54.000	45510	_34.934D	131 330	485.0	224,9240	1434,330
0.150	8.89	24000	18.1520	89,278	529.0	25,6604	160.957	682.00	2500440	152,974
0.400	10,90	256.0	14/1304/2	74,406	200.0	32,4300	173 102	600.0	32,8300	173,182



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Saing Vatha Lab Technician

Date

Meas Sophanny Lab Fechnician

Chuon Sokaheak Material Engineer

Deper

Dale:

Provincial Roads improvement Project ADB Loan No. 2839-GAM (SF) ADB Loan No. 8254-GAM

Korea Consultant International

400		ination of California Be		L. C. COLOT II				
	at No.:		Contractor:		Road No:	100 March 1997		
ab. I			Sampled No. 8-01		Date Test	- CO TO TO THE PARTY OF THE PAR	3	
	inh: 50+000 LHS_1.5m	Š.	Date Samplé 17-0					
Descri	iption: Existing Road (La	terite)	Sampled By: ME		Depth: 0.0	- 0.18m		
-		CBR Test (AASHTO T-193)		The House of	-		
	CBR Calculation :	10 Diows	30 Blows		65 Blows			
		Stress at 2.54mm1 30,00	Stress at 2,54mm; 37,62		Stress at	2.54 mm=	40.4	
		karen	4	luo(em²			kowen	
SOUTH OF		CBR = 43.47 %	C288 + 35 30	%,	Care	57.42		
The second second	aculations from consoled	1.000.0 95.50 De	3308.7. 3333	778	2.8300.7	97.92	100	
	alressa of Form No. 5A	Stress at 5.05mm* 50 at	Stress at 6.00mmm	82.47.	Grees at	5.09mm=	98.08	
graphs		kg/cm	6 3	log/om ^d		THE PARTY OF THE P	kglam	
		CBR = 48.11 %	CER = 83,02	35)	GCBR +	03.54	360	
						827	22	
25000		2012/01/2012	343.9	269.5	279.7	65	T	
Molecu	re-Denis ly Data from sheet	CORMO	327:2	1,935	2.100	2.177		
Comes	poneing CBR from 2.64 mm	constration level	Consided CBR (W)	10.47	53.30	57.42		
			1	1 1000	1000000	1 200	-	
Softies	sease for 90% of Maximum	One Densely (MDC2)		1 4	.944	To/ee		
	, value for 05% of Maximum			1052 o/tsc				
10-(3-1)(6)	The state of the s	CBR Density Curve for	COSC 94 W-0	100	-1000	027500		
Sparse CBR (55)	69 00 66 00 64 00 68 00 68 00 48 00 46	90 % of MDD	2020 2010 2010 10	S of MDC		2160 210	3 2 500	
23/17	04.002 B000	(675) 98	ary Denicity graz		2001/03618	16 E		
Tegi	ad by Contractor	Withersad by	Consultant		Checked b	y Conaulta	(Inde	
Programme and	g Vatia Tachridan	Mess Soonar Lab Tachrich Date:	0.04		Chuon Sok Material En			
					Date:			

Provincial Soads Improvement Project ADB Lean No. 2839-CAM (SF) ADB Lean No. 8254-CAM

Korea Consultant International

		Sieve A	nalysis of Fig	ne and Coarse	e Aggregate	Marco Latera Constitution	russians.		
Donoral No				Contractor:		Road No. Pf	7.1534		
ab No				Sampled No.	\$201	Date Test: 2	3-09-18		
pretion 6	0:000 LHS	1500		Date Sample	17 00 40	Borrow Pibil	Borrow Pib1		
	ı: Existina Roa			Sampled By: N		Depth 0.0	C. C. Communication		
				Gampiec by it	NT		DR. Journal on		
	od : AASHTO					Trial: 01			
	hy soil I weigh	nt of carr	9305.5	0	Weight of can 100.5 g				
Maight of c	iry solt		9295.0	9	Test Method:	300	200		
ASTM Sieve	Size (mm)	Weigh) Relainec(g)	Cumulative wieght retained (g)	Cumulative relained (%)	Passing Fer Observation	Report	Confirm Specification Chadle-		
3	(75)00					8 8			
2	50,00		3			1			
41721	37.60	6 8880	S were	11 - 20-600 -	T 20000000	He arrest f			
17	26,00	62.8	62.8	0.68	99.32	99			
3/4"	19.00		7- 180000	200000					
1/2*	12,50	C-022200	20030000	25/33/6/2	76725.00	1508			
2/8"	10.00	1135 A	1198.2	13.02	88.98	57			
2.4	4.76	100000000000000000000000000000000000000							
5.4	100000			200					
28	2,360		800000000	Company St.	2000	35.50			
A 10	2,005	2708.40	4904.60	53.28	46.72	AY			
A 18	3,180								
4.20	0.600	10000000	-	3 - compa;	0.0000				
+ 6.40	0.425	13000 3	6204.80	57.41	32.89	23			
0.50	0.3900								
6.50	0.100					-			
¥ 100	0.150	- 200	7005.30	76.65	\$ 3500000 :	-			
# 200 Part	0.076	930.4 0.0	7000,30	70.65	29,35	23			
Fall	1 600		95000	22.00					
106		management	Sieve	(Analysis					
50	(Sec)	4 - 11/15 - 11	8148	W. S. D. S. D. S. P.					
900	8								
56	2				X				
78	Passing (%)				/				
68	8								
8.32							Terramon Sales I		
8.6									
45									
38									
23									
247					海区	Andre State Sering			
18			All San						
10,0	oreg	our	(3)		i ja				
Titaled by	Contractor		Witnessed	by Conscillant		Charlend by	Concellant		
Tasted by	Contractor		Witnessed	by Consulant		Checked by I	Consultant		
Saing Vat		_2	Meas Soph	Later Control		Chuon Soket Macenal Engi			
	10.4811		CO. CO. C.	tracil 1					
Date:			Date:			Date:			

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

Plasticity Index Test AASHTO T-89 and T-90

Contractor:

Contrat North

Boad No. PR 1534

Lab No.:

Sampled No.: 8-01

Date Test 23-09-16

ocation 804000 ERS_1 8m.

Date Sample: 17-09-16

Borrow Pit 1

Description, Existing Road (Laterite)

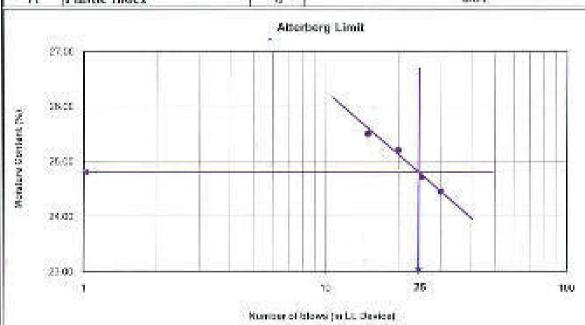
Sampled By: ME

Depth: 0.0 - 0.18m

Test Method: AASHTO T-85 and T-90

Data Sheet:

	Liquid	Limit (LL)				I		
Sympol	Description	No of blows	16	20	26	30	Plastic Limit (PL)		
ауппрог	Description	Units.	840	837	814	839	835	86	
W ₁	Weight of can + Wet soil	9	29.70	129,54	26/00	33.95	25.07	25.08	
W ₂	Weight of can + Dry soil	00	28.25	25/45	27,58	26.45	24.41	14.44	
W_{i}	Weight of can	9	115.74	15.18	15.26	6.23	16.58	19,63	
W _n	Weight of water = $(W_1 - W_2)$	9	2.76	2.58	2.70	2.57	1.26	1.24	
We	Weight of dry soil = (W ₂ , W ₂)	9	10.83	10.67	12.92	10.22	2.05	7.54	
$-W_{\lambda}$	Moistane content #(W ₄ /W ₅ *100)	- %	25,510	25.27	24.73	24.46	18.05	15.88	
1.1.	Liquid Limit (from graph)	* %		24	.80			15.96	1
PI	Plastic Index	85				8.84		- Cartella (1000)	



Fested by Contractor

Witnessed by Consultant

Checked by Consultant ...

Saing Vatha Lab Technician Meas Sophanny Lab Technician

Chuon Golicheak Material Engineer

Date:

Date:

Cente

Kingdom of Cambodia Ministry of Public Works and Transportation Project Management Unit 3 Previncial Roads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

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	Moisture-Density Rela	itionah	ip AASHT	O T-180 fo	r CBR Tea	1		
ortrat als Ar ocatio	1000000		otec ed No.: 8-01 lample: 17-0			Road Not FR 1934 Date Text 120-09-16 = Berrow Pict		
žes orijo	tion; Existing Road (Latente) of Rammer: <u>4.561 kg</u> , firee fall height = <u>447 mm</u>	Sample	ed By: ME		J mm	Depm: 0.0 - 0.18 m		
Determ.	ilination of Density				COUNTY.	90 9	0	
	Trial No.			- 8	140	TV.	W	
W.	VA_of wet compacted material mould	9	8550.0	10225.0	10575.0	100000.0	10460.0	
W.	Wtof Mould+Base Plat	g	6024.0	0.624.0	5524.0	9024.0	6524.0	
Wy	What wet compacted materials(W-W-)	9	4226	4601	4651	5041	4826	
V	Volume of Mouldiby filling water)	640	2128.00	2138.00	2128.00	2138.00	2136.00	
Yest	Wat Density = W ₁ / V ₂	ra/ce	1.977	2 152	2.318	2.358	2.257	
Yes	Dry Density = $\gamma_{col}/(1 + m_c/100)$	g/ee	1.908	2.033	2.148	2,148	2.016	
	itnation of Moisture Content :	1.9577018			1 7010700			
A. A. S. S. S. S.	Can Nos.		816	B14	B36	B18	B28	
1000	Whof weight material+ Can	11.6	415.40	422.70	339.90	314.90	360.70	
III.	Whot dry materia + Can	9	402.20	401.50	317.70	280.00	316.80	
or to be	Weight of water = (m-m.)	_	13.20	21.60	22.20	25.80	33.90	
m.	Weight of can	1 2	33.30	31.32	3332	20.05	33.43	
m_{λ}		12	365.90		204.50	C. C	203.57	
$m_{\rm d}$	Weight of dry material = (m, m ₀)	9	and the second second	009.75 5.84		259.15		
III _p	Moisture Centent = (m _t /m _s) x100	38	3.58	0.64	7.80	9.88	11.95	
2.1	as 60 4							
	60 40 50 500 500 7.01 5.02 5.0		11.00 12.00	1 13.03 14.00	MDD =		g/cc %	
21 21 21 21 22 22 22 22 22 22 22 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25	60 40 50 60 600 7.03 6.03 6.0 60 60 60 60 60 60 60 60 60 60 60 60 60	ed by Co observy	18.00 12.00	1 13.03 14.00	OMC=	8.80 / Consultant		
21 24 21 24 20 24 20 20 20 1.9 1.5 1.8 1.8 1.8 1.8 1.8	60 40 50 600 600 7.00 6.00 60 60 60 60 60 60 60 60 60 60 60 60 6	ed by Co observy	18.00 12.00	7 13.03 14.00	OMC =	8.80 Consultant		

Provincial Boads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project

	Sui	nmary of t	estF	Resu	lt (Emban	kment	Mate	erial)	
1.Description			19				00000	ON THE STATE OF TH	
Consultant		ngineering Co DD/SBK/BAW			Contractor			SUMKAN	g vad Jv
Lab No.		159 64	153 54		Date of sampling		05.01-2015		
Sample No.		8.125	8.125		completed of	leating		25-01	-2015
Description	Clayey &Sand sankmet Materi			Location				+600/RHS_660m, re[60x50x3.3)m	
2. Test Result									
2072020042	1.Sieve (%)	Sieve (%) 2.Atterbe			90		4.Pm	ictor.	5 GBR (%)
ttem	₹ 0.075mm	0.(8)	PL	(8)	Pi	MDO (g/od)		OMC (%)	(90% of MDD
Test Result	23.35	24.60	15	36	8.84	2.16		8.80	44.00
Specification	589	1584	. 8		.55				24
Decision	848	1 5			34				Antopt
3. Engineer's C	omment								
1. Certification						700			
tem	100	lame		Po	sition		Del	tic	Signature
Tested By			į w	Lab Te	schnician	N.			
Checked By			10	fatorial	Engineer				
Reviewed 8	2		Int	Mater	ral Engneer				
Approved B			80	es iden	(Engineer	17			

15,46

36.86

Korea Consultant International

	Improvement of PR1	50B, NR53 and PR	151B Project	
	CBR Penetration Test	(AASHTO T/193): Re	sult Summary	
Contrat No		Contractor	Road No:	PR.1534
Lab. No.:		Sampled No.: S-01	Date Test	26-09-16
Lecation: 05+000, LHS,	1.em	Date Sample: 17-09-1	6 Borrow Pit	1
Descriptions: Existing 5	Libgrade below laterile	Sampled By: ME	Depth: 0.1	8 - 0,50m
Soaking started on:	25-08-16	CBR Testing Date :	29-09-18	
	MDD(g/ec): 2.150	g/ec OM	C(%): 7.35	1/6
DATA SHELT	100000	- 22	-30008	
CBR CAUCULATIONS		7.0	- W	a-construction .
No.of Blows per layer	Corrected L	loi; Lose(Kg/cm²)	7	CBR (%)
No.or blows per layer	2.54mm	5-08mm	2,54mir	п. 5.08тпт
10	5.23	11.08	7.43	10.55
30	9.41	26.80	13.37	35.05

. CBR+ Corrected Unit Load/Standard Unit Load * 100

37.84

10.07

Standard Unit Load at 2,54 mm penetration level = 70.36 Kg/cm².

Standard Unit Load at 5,08 mm penetration level = 105 Kg/cm².

CBR Reporting:	į,	ж	В.	Re	ρū	甝	ng:
----------------	----	---	----	----	----	---	-----

66

CBR (%)	At % of Specified Dry Density (AASHTO T-193)	Moisture Content (MC) at Moliding (%)
7.60	90	6.43
11.30	95	6.43
	90	
	100	

Remarks:

Tested by Contractor	Witnessed by Consultant	Checked by Consultant
Saing Vaha	Wees Sopherny	Chuon Sokcheak
Saing Vatha Lab Technician	Mess Sopherny Lab Technician	Chuon Sokcheak Material Engineer

Kingdom of Carubodia Winistry of Fublic Works and Transportation Project Management Unit 3 Provincial Roads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

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W }	Contracto						
Contrat No. ab. No.; conton: 05-000 LHS_1.5m Sescription: Existing Road				Roed No. PR. 1634 Date Test : 21-09-16 Sorraw PH1 Depth: 0.18 - 0.50m			
12							
No. of Blows per biyer				lows	85 B	lowa	
	ř	VI	AZ		A3		
9	200	210	310	410	11940		
S	67	ea	66	37	97	75	
G	44	42	48	4893		65	
CC.	21	65	21	2189		2170	
g/cc	2.052		2,256		2.380		
*	8.31		6.33		6.65		
gleo	1.9	30	2.122		2.232		
	10 Blows		30 Blows		65 Blows		
	B16	B31	B13	83	819	B36	
9	302.90	304.75	200,70	1340 200	345,50	305.70	
9	\$15.50	302.22	\$14.50	327.60	325,90	335.50	
. 9	17780	17:50	18.00	18,61	19.50	20.20	
9	33.30	33,21	3130	28.04	31.06	33,12	
9	202.00	270.99	263.40	294.56	285.05	202.30	
%	2.24	6.78	5.25	6.31	6.62	18,586	
%	6.1	31	6.	33	6.55		
	9 9 9 9	9 110 9 110 9 44 9 44 00 21 9/00 2.0 % 8. 9/00 13 9 100 9 303 9 1760 9 3330 9 36250 9 36250 9 36250	g 6768 g 4442 ec 2165 g/cc 2.052 % 9.31 g/cc 1.930 10 Blows B16 B31 g 332.90 324.75 g 575.30 927.22 g 17790 17590 g 92.30 33.21 g 262.00 273.96	### #################################	A1 A2 g 11210 11410 g 6768 6617 g 4442 4893 gc 2169 2169 g/cc 2.052 2.258 % 8.31 6.33 g/cc 1.930 2.122 10 Blows B15 B31 B13 B3 g 302.00 324.75 332.70 346.20 g 319.30 307.22 314.70 327.80 g 17.90 17.50 18.00 18.91 g 33.30 33.21 31.30 28.04 g 32.20 273.98 263.40 294.56 % 3.24 6.38 8.25 6.31	A1 A2 A g 11210 11410 141 g 6768 6617 87 g 4442 4893 54 g/cs 2165 2169 21 g/cs 2.052 2.258 2.3 g/cs 2.052 2.258 2.3 g/cs 1.930 2.122 2.3 g/cs 1.930 3.122 3.122 2.3 g 3.120 3.24.70 3.270 3.42.20 345.40 325.40 g 3.120 2.70.93 30.40 294.56 255.03 35.03 31.06 35.03 31.06 35.03 35.03 31.06 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03 35.03	

Provincial Roads Improvement Project ADS Loan No. 2839-CAM (SF) -ADB Loan No. 8254-CAM.

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Improvement of PR150B, NR53 and PR151B Project

Determination of California Bearing Ratio(CBR) (AASHTO T-193)

Contrat No.

Contractor

Road No. PR.1534

Lab. No.

Sampled No.: S-01

Date Test: 25-09-16

Logation: 05+000, LHS 1.5m

Date Sample: 17-09-16

Borrow Pit:1.

Description: Existing Road

Sampled By: ME

Depth: 0.18 - 0.50m.

Staking stated on: 25-09-15.

CBR Testing Date: 29-09-18

MIDD/g/ocj: 7,150

OMC(%): 7.25

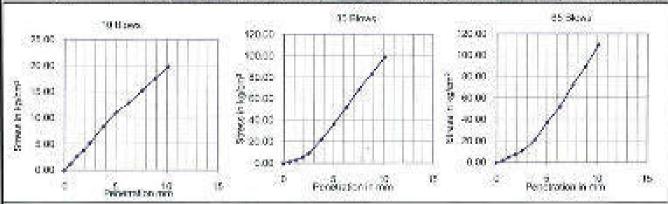
CBR Test (1193): Swell and Penetration Data

SYMELE DA	VEX.		and the second second	33. <u>88</u>	Surcharge Weights:	4,591	Kg	Annual State of the Land	
Care	Tions	tometer	Mid No.1 Htmm:	9885	Mid.No.2 [Hb/mm] =	0686	Md No.3	Hb(mm) =	9685
0.000	3,4136	Description of	Reporture to other	Caroli Sc	Dasachese in man	Case 6 Cd	Livernature	CLASS COLOR	Carried Sc.

100

Chape	Time	Benjarks	Contract Continued -	9000	Britanistic Linking -	20000	Date (400) Libition / -	2000
	1,110	100.00000	Reading in itim	Swell S.	Reading in min	Swell %	Reading in our	Swell %
25-08-16	2.00	Start	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	32	.0	504	. 0
26-06-16	5.00		3113-6-1	0.00	53)	0.00	300	0.04
27-09-16	4.00		51	0.00	32	0.00	3119	0.07
28-09-16	8,00		61	0.00	33)	0.30	343	0.02
29 00 16	8.00	Enclod	51	0.00	32	0.00	5142	0.10

Penetral		Proving King Reading and Stress									
The first was	Penerana		Mould No.A1 (10 Blows)			Mould No AZ (30 Blows)			Mould No.AJ (65 Blows)		
metr	(mm)	Old Recolling	Coad in kN	Silvense in og/care*	Dial Reading	Losed in kN	Biress n kg/cm²	Desi Recedings	Load in kh	Stress, n kg/cm²	
0.020	0.00	0.0	0.0000	0.000	0.0	0.0000	0.000	Q.D.	0.0000	0.000	
0.025	0.54	0.0	0.2382	266	9,0	0.2779	1.464	8.0	0.3176	1.578	
8,050	1.77	17.0	0.5161	2.710	15 D	0.5955	0.407	25.0	0.9925	5,720	
0.07%	1,01	12.0	7.0.7146	3.764	28.00	3,3316	5,555	33300	1.4659	1,737	
0.100	2.54	25.0	0.9925	6.220	(5.0.)	1,7365	0.410	52.0	2,0014	10.070	
0.150	3.61	40.0	1,5880	3.364	107.0	4.2470	22,374	1000	3.9700	20.910	
0.200	2.01	510	2.1041	11,032	376.0	8.9872	36,802	0060	7.0460	37,639	
0.250	0.35	C2 (I)	2.24614	12:954	255.0	0.9350	57,770	250 D	9,9750	52,276	
5,900	7,62	7230	2.8981	15,2865	330,0	13,1010	61,004	3480	13,5065	(2.141	
0.350	6.83	20.0	3,3348	47.563	400.00	15.8800	33.642	430.5	17.0710	99.916	
2,400	10.46	65.0	3.3715	19,005	4750	18,6575	592 3334	525.0	200,64025	300,770	



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Chuon Sakcheak

Saing Vatha Lab Technidan Meas Sophanny Lab Technician

Material Engineer

Date:

Bate:

Dete:

Provincial Roads Improvement Project ADB Lean No. 2839-CAM (SF) ADB Lean No. 9254-CAM

Korea Consultant International

The second secon	rmination of California Be		AASHT	and the latest designation of the latest des		
Contral No Lab. No.: Legation: 05+000 LHS_1.5r Description: Esisting Road		Contractor Sampled No.: S-01 Date Sample: 17-0: Sampled By: ME	Road No. PR.1534 Date Test: 26 09-16 Denow Pri:1 Depth: 8.18 - 8,50m			
	CBR Test (A	AASHTO T-193)				
CBR Calculation :	16 Blows	30 Blows	11211		65 Blows	
	Stoss at 2.54mm= -5.23	Stores et 2 54mm-	9,41	Street at:	2.54 con=	10.87
	kg/tm ⁷		kg/cm²			kg/pm
DSR Caculations from conceted land / stress of Form No. 9A	GBR + 7.43 %	CBR - 13.37	*	CBR -	15.45	8
graphs	Stess at 5.08mm+ 11.08 kg/cm ²	Sinso at 5.05mm-	36.50 logtara ²	Stress at	5.08mm+	37.64 kg/cm
	GBR = 10.95 %	CBR = 35.06	%	GBR≠	35,85	94
						20
Moisture-Density Date from sine	I CBR ND	343.9 327.2	269.5	279.7	0.5	
Corresponding CBR from 2.54 n	C TO CROSSO TO CO.	Carrected CBR (18)	1.990 7.43	2.122	2.239 15.46	
Conceptioning Cells from 2.54 in	im penetration level	Induscria des (18)	7.43	13.27	10,40	1,
Polling value for 20% of Maxim	n De Deschie Groot			.985	- marin	
Plotting value for 95% of Maxima				.043	g/cc g/cc	-
Table Big Table Service State Service	CBR Density Curve for	559-589 - GRO - AR - 61			(SEE(SEE)	-
16.00 16.00 16.00 13.00 25. 12.00 26. 14.00 9.00 10.10 9.00 8.00 7.00 6.00 6.00	O% 90 % of MDD	95 % of MDD				
1,840 1,880	Contraction to the contraction of the contraction o	.040 2.080 2.12 ry Densety gát c	0 210	0 2.200	2.240	2.180
Tested by Confractor	Whiessed by	Consultant		Checked by	y Consulta	ont
Saing Valha Lab Technidan Date:	Moes Sophen Lab Technicia Date:		- 6	Chuon Sak Material En Date:	200000000000000000000000000000000000000	-/

	WARREN TO THE PARTY OF THE PART				r CBR Tes	Disharan salat daga sar-a	-
Contract		Cours	STATE OF THE STATE			Road No. PR	
ab, No		9400000	led No.: 5-01			Deta Test 21	-09-18
NOUNCE PER	n 06+000 UHS_1.5m	77/7/2010	iample: 17-0:	9.16		Borrow Pit.1	98
	tion: Existing Road	- CONTRACTOR - CON	ed By ME		and the same of th	Depth: 6,10 -	0.50m
	of Rammon <u>4.681 km</u> . Free fall height in <u>467 mm</u>	with a 1	at circular ta	oe of that 50	5 mm		
) e territa	inntion of Density	EECHAGO	gantes see	ACT CHANGE	(100/20)	0 0.50	5 - 1425
	Trial No.			- 0	- 0	W	V
W_1	Whof wet compacted material (mould	9	90000	10345.0	10565.0	10485.0	202500
W_2 :	Wtof Mould+Base Plat	9	3524.0	5624.0	5624.0	5524.0	5524.0
W_{j}	What wat compacted materials(W- Wyt-	9	4226	4721	4941	4861	4626
V.	Volume of Moule(by filing water)	(3)	2138.00	2138,00	2138.00	2138.60	2125.00
Yest	Wet Density = W ₁ / V ₁₄	9/00	1.977	2,208	2,311	2.274	2,164
Con	Bry Density = $\gamma_{\rm ed}/(1 \pm m_{\rm g}/100)$	9/00	5.909	2.090	2.152	2.077	1.943
keterun	inetian of Moisture Content						
	Can Nos.		B10	B26	B31	B15	B8
TH.	What weight material+ Can	9	820.60	210,70	299.90	294.10	405.90
111	Wilof dry material + Can	9	310,70	296,80	281.50	271.60	367.60
10.	Weight of water = (m·m _t)	9	9.80	14.90	18,40	22.60	28.20
1111	Weight of can	Я	23.11	31/30	33.51	59:30	20.97
1014	Weight of dry moterial " (m ₁ -m ₂)	Я	277.69	254.50	240.29	236 29	3393,163
m _r	Maisture Content = (m ₂ An ₃) x 100	-2%	3.53	5.63	7.41	9.49	11.36
100	40		*				
1.54 1.64 1.60	00 65 60 80 80 80 60				MDD =	manasas s	giec %
1.60 1.60 1.60 1.60 1.60 1.60	de 66 90 90 90 90 900 900 900 900 900 900	x % ed by Co			OMC =	7.25 Consultant	Section.
1.6 1.6 2.6 1.6 1.6 1.6 7.6 7.6 8	ac a	ot Sy Co phagny		0000	OMC = Checked by Chuch Soko	7.25 Consultant	Section.
1.6 1.6 1.6 1.6 1.6 Teste	de 66 90 90 90 90 900 900 900 900 900 900	ot Sy Co phagny		0000	OMC =	7.25 Consultant	economy.

Kingdom of Cambedia Ministry of Public Works and Transportation Project Management Unit 3 Provincial Roads Improvement Project ADB Lean No. 2839-CAM (SF) ADB Lean No. 9254-CAM

Korea Consultant International

A STATE OF THE PARTY OF THE PAR		Sleve A	nalysis of Eli	se and Coarse	Aggregate		DOMESTIC	
Contral No).t		//2	Contractor:	711-8-0	Road No: Pl	R.1534	
ab. No.:	order i	50		Sampled No.:	S-01	Date Test (21-09-16)		
Jogation: I	06+000 LHG	1.5m		Date Sample:	17.00.19	Borrow Prot		
	n: Existing Roa	997,477		Sampled By: N	ECO-000 (FED 40) (CE)	Depth: 0.18 - 0.50m		
		Original and the Control of the Cont		complete by: N	E .		- A.M. (1)	
	OTHEAA: bo		- Samuel	231	TOTAL CONTRACTOR OF THE PARTY O	Trial: 01		
	dry sof + weigi	nt of can:	3715.5 3815.0	9	Weight of can: Test Method:	100.0	9	
Weight of	dry sor			9		1		
ASTM Sleve	Size (mm)	Weight Retained(g)	Sumulative wieght retained (g)	Cumulative retained (%)	Passing Pen Openwation	Report	Confirm Speafication Grade-	
31	75,00		9 4000					
21	50.00							
1.721	37.50							
	25.00						100	
34"	19.00						.40	
96°	12.50 16.00	38.0	38.0	100	96/20	95		
4.4	4.75	20.0	2000	1.001	500/201	3(8)		
84	200	W G	V			le di		
0.5	2.360		0.00000	Paragraph .	OCONO NO.	C nove to		
4.10	2,000	176.10	214,10	5.82	94.06	94		
9.16	1,140	111111111111	100-1000-1	1	1000000	10000		
M.30	0.800	71-18-DOM	CT Sylvages	0 1000000 B	1 00000000	Transport I		
# 40	0.425	1404.9 -	1619.00	44.79	56.21	50	30	
# 56	0.000	95000000	121000000	- C.C.OO.	3000000			
# 80	0.190							
¥100	0.160	2000	19255555556		1000000	(- () ()		
# 200 Fen	-0.075	927.5 0.0	2546 60	70.44	29.66	30		
PMD	30,015	0.0	100				-	
108			Source	Analysis	71111	anna market		
99	DEN:							
	Possing (%)			27				
88	2							
70	2							
58	ii.							
56	1000						- Paled	
46							V.	
5.70		10000	200					
38		The state of the s						
28					100	nic Sections		
35	h die bed				110	A PARK BOWLE		
σ	01	201			30			
Tested by	y Contractor		Whesed	by Consultant		Checked by	Consultant	
Saing Va	lha		Mees Soph	anny		Chuon Sokel	neak	
Lab Tech	melen		Lab Techni	ciani		Material Engl	neer	
Date:	2555		Date:	50550		Date:	2000	
			- Belleville			ar Milan		

Kingdom of Cambedia: Ministry of Public Works and Transportation: Project Management Unit 3

Provincial Roads Improvement Project: ADB Lgan No. 2839 CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

Plasticity Index Test AASHTO T-89 and T-90

Contrat No.:

Contractor

Road No. PR.1534

Lab. No.:

Sampled No.: 5-01:

Date Test 23-09-18

Lucation 057000 THS 1.5m

Borrow Pit 1

Date Sample: 17-08-16

Description Existing Road

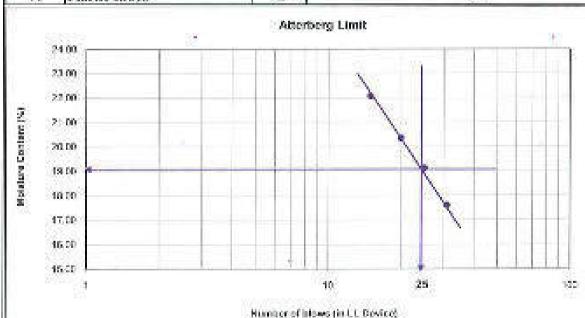
Sampled By, ME

Depth: 0.18 - 0.58m:

Test Method: AASHTO T-89 and T-90

Data Sheet

	Diquid I	Limit (L/L)						
S. andrew	Description	Noted bkwwa	15	20	25	31	Physi	ic Limit (PL)
Symbol	Description	Unit X	510	529	537	St	52	S8.
Wi	Weight of can + Wet soil	9	29.64	29.50	29.37	29,74	24.30	24.30
1.90%	Weight of can + Dry soil	9	27.27	27.50	27,25	27,261	23.30	20 40
1967	Weight of can	9	16.54	16.21	40,00	10.38	15.67	16.88
Wa	Weight of water = (W _F -W _S)	9	237	2.30	2.12	1.68	5.02	0.82
W ₂	Weight of dry soil π (W_1 - W_2)	9	10.73	11,29	11/2/	12:07	7.71	6.85
W	Moiature content =(W ₄ /W ₅ *100)	%	22.08	20.37	35.15	17 62	11.80	11.57
1.4.	Liquid Limit (from graph)	%		19	10		137	11.95
10	Plastic Index	- %	7.16					



Fested by Contrackon

Witnessed by Consultant

Checked by Consultant

Saind Vatha Lab Technician Meas Sophanny Lao Technician

Chuon Sekcheak Magazial Engineer

Cate:

Date:

Date:

Provincial Roads improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project

	Sur	nmary of t	test F	lesu	lt (Embar	kment	Mate	erial)		
1.Description	0000				- Louis doctor			5010150		
Consultant	KCLE ME	ngineering Co COSBK/SAW	"Lid/ AC		Contracto			GUMKAN	G-VSC JV	
Lab No.		753-54		ı	gmas to stef	ling		05-01	-2015	
Samole No.		S.125	125 Date completed of testing 25-81			-2016				
Description.		Clayey &Sand animet Mater			Location				5+500/RHS_650m, ce(60x50x3.5)m	
2. Test Result										
I AND ADDRESS OF	1.Slove (%)	2	Alterbs	eg Lin	ij		4.Proder		5 CBR (%)	
liem	# 0.075mm	LL (%)	PL(95.1	B)	MDD (g/cc		QWC- (50)	(90% of MDD)	
Test Result	29.66	19.10	-13.	96	7,15	2.150		7.25	7.80	
Specification	2311	1888	1 15			188		1155	2.4	
Decision	140	828	65		32			843	Accept	
3. Engineer's C										
Ibam	140	ame		Po	sition		Dal	e e	Signature	
Tested By			3	Lab Te	drikien					
Checked By			М	lateria	Engineer					
Reviewed 8	y		Int	Water	al Engneer					
Approved B			By	es intern	Engineer			- 1		

	CBR Penetration	on Test	AASHTO I	(193): Result Se	ımmary		
Contrat No.:			Contractor		Road No: F	R.1534	
Lab. No.:			Sampled N	lo.:	Date Test	21-99-16	
Location, 45 (000, RHS	8_1.5m	Date Samp	ile: 17-09-16	Borrow Pit			
Descriptions: Existing (Subgrade below lat	ente	Sampled E	y: ME	Depth: 0.07	0.38m	
Soaking started on:	21-09-16		CBR Tests	ng Date :	25-09-18		
	MDD(g/cc):	2.143	g/ec	OMC(%):	7.50	4/6	

Remarks:

OBRICAL CULATIONS		0.00		
No of Blows par layer —	Corrected Un	GBR (%)		
racia dassa peringer	2.54 mm	5.08mm	2,64mm	5.08mm
10	12.96	17.77	16.42	16.92
30	19.92	41.82	26.74	39.83
85	23.42	49.50	33.28	47.20

CBR= Corrected Unit Load/Standard Unit Load 1 100

Standard Unit Load at 2.54 mm penetration level = 70.36 Kg/cm² Standard Unit Load at 5.08 mm penetration level = 105 Kg/cm²

CBR (%)	At % of Specified Dry Density (AASHTO T-198)	Moisture Content (MC) at Moulding (%)
20.00	90	6.59
26.20	25	8,59
	58	

100

Tested by Contractor	Witnessed by Consultant	Checked by Consultant

Saing Vatha	Meas Sophanny	Chuon Sokcheak
Lab Technician	Lab Technician	Material Engineer
Cate:	Date:	Date

Ta a	Sampled 10 B	No.: No.: 17409-16		Borrow Pr Depth: 0.6	21-09-16		
		llows	20 5				
The state of the s		liows	30 5				
à			30 Blows		66 Blows		
133	C1		C2		C3		
of compacted wet materials +Mould g		11235		11740		11860	
9	6848		6826		5002		
9	4387		4914		5058		
95	2161		.2252		2181		
gloc	2.020		2.182		2.341		
%	8.53		6.70		6.53		
ry Density-Wet Density/(1+m/100) g/cc		1.906		145	2.197		
	10 Blows		30 Blows		65 Blows		
502	B28	B10	B4	B25	827	B32	
9	825,00	324.90	308.70	annoc	903.90	335.63	
9	903.90	307.10	289.40	203.40	286,40	903,00	
9	16.10	17.95	17.50	17,60	12.25	17.60	
9	24.20	20.11	20.24	31.79	25.12	11,22	
C	275 80	2/359	250.00	282 11	281 200	27 170	
56	6.57	6.50	1,6,68	871:	8.55	8.48	
W.	6.	53	6.	70	6.	53	
5 5 5 8	34.20 279 BU 6.57 6.6	25.11 273.56 6.50	30.34 252.02 6.63 6.	24.2 262 6.71 70		9 95 19 11 281 26 1 8.65 60	
	9 9 9 9 9 9 %	900 2.0 900 2.0 90 1.3 90 1.3 900 1.3 900 1.3 900 900 90 900 900 90 900 900 90 900 900	300 2164	30 2164 22 g/cc 2.030 2.1 % 8.53 6. g/cc 1.908 2.6 1.908 2.6 B28 B40 B4 g 225.00 224.90 208.70 g 203.91 307.10 289.40 g 203.91 307.10 289.40 g 24.20 20.11 30.24 g 273.80 273.50 233.03 % 8.57 8.50 6.68 % 8.53 8.	90 2161 2252 90 2.030 2.182 90 8.53 6.70 900 1.908 2.045 10 Blows 30 Blows B26 B40 B4 B25 9 225.00 224.90 208.70 311.00 9 303.91 307.10 289.40 203.40 9 46.40 47.90 47.50 47.50 9 24.20 25.41 30.34 24.78 9 279.80 279.90 252.03 262.11 9 8.57 6.50 6.68 6.71	20	

Korea Consultant International Improvement of PR1508, NR53 and PR151B Project

Determination of California Bearing Ratio(CBR) (AASHTO T-193)

Contraction: Contraction: Road No. PR 1534
Lab. No.: Sampled No.: Date Test: 21-09-10.

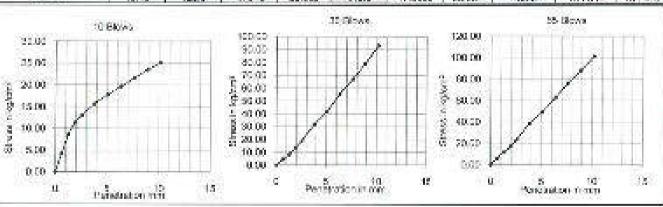
Bescription Existing Road Sampled By: ME Depth: 0.07 - 0.38m

Scaking started on: 21-09-16 CBR Testing Date: 25-09-16 MDD(g/eq): 2.143 OMC(94): 7.50

CBR Test (T193): Swell and Penetration Data

STREET, DAY	Mary Control				Surcharge Weights	4 501	ДВ бого остористи менос в ч—— о	V05/2015(6)
Dete	Time	Formacias	Mid No.1 Higher) *	9645	Mid No 2 Highma) =	8003	- Mid.Nd.3 Hi(mm) =	9685
CARGO I	150000	1500 100000	Reading in mm	Swell %	Reading in rem	Swell 2y	Reading in mm	Swell S
21:09:16	4.00	Start	313	0.0	9/27	0	1239	1
22-09-18	8.00		323	0.10	945	0.19	1267	0.05
23-09-16	0.00		324	0.11	945	0.22	1270	-0.11
24-09-18	8,00		324	0.11	9,4%	0.23	1871:	0.12
25-00-18	8.00	Encied	724	0.11	Sec.	15 Oct	1272	0.32

Description				ar anna ta ta	Proving 6	Slep Rending	and Street	8		
Penetral	1997	Moure	No.01 (10)	Blows)		Na G2 (30 t	Service Control of the Control of th	Mould No G3 (65 Blows)		
(EP)	DW.	Dist Receipt	Load in 48	Stress in kg/km²	Dial Repping	Edded in lett	Stress in kg/am	Die Keitzing	Load in KN	Sauce to kg/cm²
0.000	0.00	0.0	0.0200	0.000	0.0	0.0000	0.000	5.0	0.0000	0.000
0.005	0.04	20.0	0.7940	4.102	21.0	0.00327	4,391	30.0	1.1010	8.278
0.000	1/27	41.0	1,6277	6.573	4000	1,5330	6.264	56.0	2.2232	2017/07
0.075	4.81	DO D	2,1436	11.292	90.0	2 6805	13.612	840.0	8,1760	16 724
0.100	2.54	632.0	2.4614	12,504	90.0	3.5730	14 819:	212.0	4.4464	23,420
0.150	2.81	76.0	2.9775	15/655	150.0	0.9500	31,366	185.0	7,3445	20.004
0.200	5.00	05.0	3.3745	47,774	200.0	7.9400	41.821	237.0	9,40883	49,558
0.250	6.35	04.0	3,7318	10,455	288.0	10.5305	55 412	202.0	91000	62,731
D/200	7.02	109.0	4,0891	21,598	320.2	12,7140	66.913	296 1 0	04.4905	75,325
0.350	3.189	112.0	44464	22,420	276.0	35,0056	-79.041	422.0	19.7694	58,342
0.400	10.16	120.0	4,7840	25,0912	445.0	17,6665	503 D531	265 D	19 2541	101415



Tested by Contractor -

Witnessed by Consultant

Checked by Consultant

Saing Valha Lab Technician Meas Sophanny Lab Technician Chuon Soksheak Material Engineer

Dabe:

Cate:

Date

	CONTRACTOR OF THE PARTY OF THE	nination of Ca	lifornia Be	aring Ratio(CBR) (AASHT	O T-193)	e make disense some	
Lab. I Local	al No No. tion: 45+000 RHS_1.5m dotton: Existing Road		on water	Contractor: Sampled No.: Date Sample: 17-05 Sampled By ME	Road No: PR: 1534 Date Test: 21-09-16 Borrow Pit: Depth: 0.07 - 0.38m			
		A CONTRACTOR OF THE PARTY OF TH		ASHTO T-193)				
	CBR Calculation :	10 Bk	10071	30 Blows			65 Blows	
		Shear at 254m	m= 12.98 kg/cm²	Stress at 2.54mme	18.52 kg/cm²	Stress at 2.04 mmn		23.40 kg/cm
	Caculations from concease stress of Form No. 9A	- CO.	2 %	CBR = 2874 S		CBR =	33.26	186 186
ra ch:		Stress at 5,08mm= 17.7, kg/cn		Speed at 5 Climme 41 82 splam ²		SUBSENC	5.00mm=	40.56 log/om
		CBR = 16.5	3 %	CB8 = 30.83	%	CBR +	47.20	%
op see	ne-Density Data from sheet	r opp um		343.9	266,5	279.7	65	
				927.2	1.906	2.045	2.197	1
Comes	sponding GBR from 2.54 mm	penetration level		Corrected CBR (%)	18.40	28.74	33.28	2
ENG-COMMO	g value for 90% of Maximum g value for 96% of Maximum		100			.929	gice	
To the Line	Samperer and a mercular	t ary terminal trains	-4			.0.10	gloc	<u> </u>
Socied CBR (%)	30.00	and the latest the second		19	-			
South CBR (%)	28,00 (CBR = 20.0 20,00 (CBR = 20.0 20,00 (CBR = 20.0			95 % of MI	00			
Sooked CBR (%)	26.00 CBR = 20.0 20.00 CBR = 20.0 15.00 14.00	10%		030 2.060 2.150		2100	3,356	7.360
2010	26.00 CER = 20.0 20.00 CER = 20.0 15.00 14.00	90 %	1.000 J	d26 2.060 2.180 ry Density g/cc		2 100 Checked by		

Sontrar Ma		tionsh	ip AASHT	O T-180 fo	r CBR Tes	io Compression de la compression de la comp	CONTRACTOR OF THE PARTY OF THE
The second secon	91	Costo	eckor.			Road No. PR	1534
ab. No.		180.00	ed No.			Date Lest: 2	1-09-16
	45-000 RHS_1.5m	Carte 8	Sample: 17-09		Borrow Pit :		
Description	n: Existing Road	Samp	ied By ME		Dopth: 0.07	0.35m	
Weight of I	Farmed 4.584 kg . Free tall be gd = 447 mm	with pit	lat directar fac	se of clia: <u>50</u>	4 mm	0.	
<u> Petermin</u>	ation of Density	90 NO 100 NO		CONTRACTOR OF THE PARTY OF THE	THE WAY		
	Trial No.		1	10		IV.	V
	What wel compacted material uncold	9	9965 C	10200.9	10505.0	10400.0	10210.0
	Willof Mould+Base Plat	9	6324.0	5624.D	6624 C	5624.0	5624.3
	Whof wet compacted materials(W-W ₂)	9	4331	4656	4931	4776	4656
	Volume of Mould(by filling water)	0.0	2138.00	2138.00	2138.00	2135.00	2135.00
	Wet Density = W ₂ / V ₂	0/05	2.026	2.178	2 306	2.294	2,145
	Dry Density = $\gamma_{ee}/(1+m_e/100)$	g/cc	1.959	2.083	2.143	2.041	1.928
Anther minimize	stion of Moisture Content :						
	Can Nos.		B36	B34	B14	B29	B8
	At of weight material+ Can	9	389.50	332.90	209.60	316.10	325,30
	At of dry malerial + Can	g	320.40	318.80	280.60	291.50	795.50
	/veight of water = (m-m ₁)	2	20.10	15.80	18 00	24.60	28.90
	/veight of can	9	25.29	33.21	31.32	90.05	31.0
	Weight of dry material = (m, m,)	S	295.11	283.56	249.28	290.96	284.49
m, h	Soisture Content = $(m_2 A n_4) \times 100$	58	3.42	5.57	7.62	9.44	11.27
2,140 3,130 2,100							
2.100 2.100 2.000 2.000 2.000 2.000 1.900 1.900 1.900 1.900 1.900		300	10.00 11.01	12.00 11.00	MDD =		g/cc %

100		Sieve A	nalysis of Fi	ne and Coarse	Aggregate			
Contral No	1		***************************************	Contractor:		Road No: Ph	1,1534	
ab. No.:				Sampled No.:		Date Test 2	3 09 16	
need not 4	5+000 RHS	1.500		Date Sample: 17-09-16 Sorrow Pit				
	r Existing Rea			Sampled By: k	NOW THE RESERVE TO SERVE THE PROPERTY OF THE PERSON OF THE			
		SS kenneng overreget		sampled by: N	Dapin: 0.07 - 0.38m			
Control of the Contro	od : AASHTO		20000000	26	gasannoargango era ^{ll}	Trial: 01		
	dry soil + weigt	nt of can:	3535.5	S	Weight of can	100.5	9	
Weight of a	dry soil		3435.0	9	Test Method:			
ASTM	LINE CONTROL OF THE	Weight	Sumulative	Cumurative	Passing Pare	tentaga (%)	Contine	
Sieve	Size (mm)	Retained(g) wieght retained (g)		retained (%)	Observation	Report	Specification Grade-:	
3			The second second				0/000	
2*	60.00							
1/2	37.50							
- 15	25.00							
3/4	19.00							
1/2 3/6	12.50	0.0	29.74	0.00	100.000	100		
2017	4.75	(500)	9.0	30.00	100.00	190		
W-4	0.79				_			
9.8	2,360							
#10	2,000	90.20	96,20	2.00	97.20	27		
£15	1,180							
# 30	0.600							
# 40	0.425	1282.2	1375.40	40.13	50.87	60		
# 50	0.300							
# 50	0.180							
£ 100	0.190							
4 200	0.075	579.1	2367.50	68.63	31.37	21		
Fan	40.075	0.6						
108			Slove	Analysis	Water I			
1000	(22)					10000		
98	Pessing (%)			1				
66	2	f-1280			1011			
76	100							
25	2							
58							4 600	
2.70			/					
45		1	8					
33		100				+++++		
28			-1 + 1 + 1 + 1 + 1 + 1		1111	and the second		
13					110	wind it from Emercy		
0.0	21	0.5	3		10			
Tested by	Contractor		Witnessee	by Consultant		Checked by 6	Consultant	
Lesied DV	Comractor		*Vinessee	ey Consulani	50	Checked by I	cosylani	
ASSESSED SE								
	ha		Meas Soph	anny	8	Chuen Sokeh	eak	
Saing Vat	G05040000		Meas Soph	NAME OF THE OWNER		Chuen Sokeh Material Engli		

Improvement of PR150B, NR53 and PR151B Project

Plasticity Index Test AASHTO T-89 and T-90

Contrat No.

Contractor:

Road No. PR.1534.

Leb. No.:

Sampled No.

Date Test:23-09-18

Location: 45+000 RHS_1.6m

Date Sample: 17-09-16.

Barrow Pit:

Description Existing Road

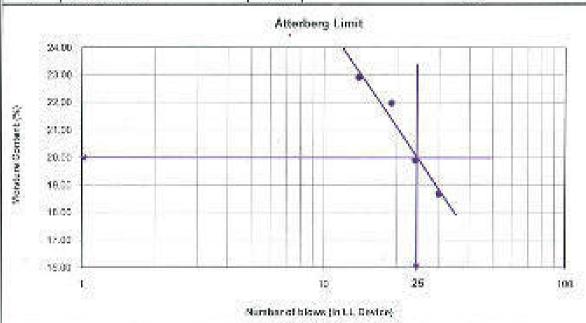
Sampled By: ME

Depth: 0.97 - 0.38m

Test Medrod : AASHTO T-89 and T-90.

Data Sheet

A CONTRACTOR	Liquid Limit (L.L.)								
Symbol	Description	Najof blows	14	19	24	30	Plastic Limit (PL)		
	Sesentition.	0.1 / C	536	514	S35	\$13	332	55	
W ₁	Weight of can + Wet soil	Я	29.66	29.79	29.44	29.75	26.20	26.02	
Wa	Weight of can + Dry soil	9	27.15	27.76	27.70	27.50	25.22	25.10	
96/2	Weight of ear.	- 8	18.25	16.28	18.55	15.70	265.76	08.06	
W ₄	Weight of water = (W ₁ -W ₂)	9	2,60	2,44	2.14	2.20	5.08	0.902	
W_{ij}	Weight of dry soil = (W_1-W_2)	R	10.60	11.09	10.74	31.77	6,46	8.12	
W_0	Maisture content #(W ₄ /W ₃ *100)	*	22,94	22.00	19.93	10.73	0.000	44,32	
I.J.	Liquid Limit (from graph)	9/		20	.OD	100000		11.46	
Pf	Plastic Index	%		11100	100	8.54		200000	



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Chuon Solotheas

Saing Vathe Lab Technician

Wesa Sophanny Lab Technician

Material Engineer

Date:

Date:

Date:

Provincial Roads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project

	Sum	mary of t	lest F	(esu)	t (Emban	kment	Mate	rial)	
1.Description								**	
Consultant		gineering Co C/SBK/SAW			Contraction	8		GUMKAN	ig vsc Jv
Lab No.		763-54		Date of samoling			05.0	2016	
Sample No.		S 125		Data completed of test		testing.		25-01	1-2015
Description		Sayay &Sand uskmet Mater			Location				8+500+0+5_650m ze(60x50x3.3jm
2. Task Rosult						- 80			
	(.Sieve (%)	2.	Atterbe	erg Lar	vit.		4.Proc	dor	6.CBR (%)
Hem	A 0.075,nm	11(%)	PL(87	PL	MDD (g/cs	200	OMC (%)	(80% of MDD)
Test Result	31.37	20.00	233,	46	8.54	2,143	(i)	7,50	20.00
Specification	(8)				85	5.		19	2.4
Decision	1940		1 8		8			- 14	Accept.
3. Engineer's C	omment								
4. Certification									
Hem	Na	ime		Pos	stion	T	Date	. [Signature
Tested By			33	Lab Te	chnican				
Checked By			M	laleria	Engineer				
Reviewed B	y =		Int	Water	al Engneer			00	
Approved By	,		8.	asidan	:Engineer				

Improvement of PR150B, NR53 and PR151B Project

	CBR Penetration	n Test	(AASHTO I	[-193]: Result Se	ummary	
ContractNo.: PRIP-CV	AG4GB-2013-01		Contractor	GKC-VSC JV	Road No: Pl	R. 1534
Lab. No.:			Sampled N	o.; S-01	Date Test:	21-09-16
Location: 60+900, LH	S_1.5m		Date Samp	ale: 17-09-16	Borrow Pit 1	00,042000.00
Description: Existing F	Road		Sampled B	ly: ME	Depth: 0.15	0.5m
Soaking started on:	21-09-16		CBR Testi	ng Date :	25-09-16	PB(500,145)
	MDD(g/cc):	1.933	g/cc	OMC(%):	11.85	56

DATA SHEET

OBRIGALCULATIONS				
Notof Blows per layer	Corrected Un	COR (%)		
140 to blowe ber rayer	2.59mm	5.08mm	2.54mm	5.08mm
10	0.84	1.25	1.19	1.19
30	* 2.09	3.14	2.97	2.99
66	0.55	7.14	5:05	6.77

GBR= Corrected Unit Load/Standard Unit Load * 100 Standard Unit Load at 2.54 mm penetration (evel = 70.56 Kg/cm²

Standard Unit Load at 5.08 mm penetration level = 105 Kg/cm²

CBR Recording:

CBR (%)	At % of Specified Dry Density (AASHTO T-193)	Moisture Content (MC) at Moulding (R)
2.40	90	10.87
4,30	95	10.87
	98	
	100	

R	eп	121	rk	5	
В	88	m			

Tested by Contractor Witnessed by Consultant Checked by Consultant

Seing Veine Mese Sophenny Chuon Sokcheat
Lab Technicien Lab Technicien Material Engineer
Date: Date:

Kingdom of Cambodia Ministry of Public Works and Transportation Project Management Unit 3 Provincial Roads Improvement Project ADO Loan No. 2639-CAM (SF) ADB Loan No. 8264-CAM

Korea Consultant International

Moisture-Density Relat	lionship	p for Diff	ferent Bl	ows in C	BR Test	(T-193)			
Control No.: PFGP-CW-C-ICB-2013-01 Lab. No.: Location: 60+000: LHS_1.5m Description: Existing Road		Contractor: GRC-VSC-JV Road Not PR.1534 Sampled No.: S-01 Date Fost : 21-09-16 Date Sample: 17-09-16 Borrow Pit : 1 Sampled By: ME Depth: 0.18 - 0.5m							
DETERMINATION OF BENSITY									
No. of Blows per layer		10 B	ilows	30 B	licrets	85 B	lows		
Meuld No.		В	11	В	24		13		
VAL of compacted wet materials +Mould] 9	10	800	10	165	- 11	340		
VA of Mould (Base Plat	g	38	205	86	58	68	002		
What we compacted materials in mould	g	30	95	43	907	4:	38		
Volume of Mould	600	21	94	21	74	2	94		
Wet Density = Whof wet compacted materials/volume of mould	g/cc	1.8	21	1.8	er .	2.0	:ea		
Moisoure Content	%	10	30	15	73	10.58			
Dry Density=Wet Density/(1+m _s /100)	g/co:	40	61	1.7	73	43	170		
MOISTURE DETERMINATION									
No. of blows per layer		10 B	lows	30 B	lows	65 B	lows		
Moisture Can No.	.00	B34	B36	86	B29	B40	B14		
Wet of Can+Wet Materials	3	338 34	3284.70	380.70	398,40	2261.40	246.40		
Wt of can +Dry Materials	g	311.00	301.00	221.00	20130	308,50	217,00		
Wt of Moisture	9	25.90	28,70	29.75	34,50	29/90	29,40		
Wit of carn	9	33.21	25.29	31321	30,85	33.34	31.32		
Wit of dry materials	9	277.79	275/74	205 99	251,05	275.15	285,08		
Molature content	296	350390	30.81	10.24	13,72	30387	10129		
Average Moisture Content	\$6	10	30	11.	73	10.	88.		

Kingdom of Cambodia Winistry of Fublic Works and Transportation Project Management Unit 3:

8.00

8.00

8.00

8.00

Ended

23-09-18

24 09:16

25-09-15

Provincial Roads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

222

205

1.70

1.83

1.84

1.63

2.62

2.73

2.78

025

1015

1041

Korea Consultant International

Improvement of PR150B, NR53 and PR151B Project

Determination of California Bearing Ratio(CBR) (AASHTO T-193) Contrat No.: PRIP CW-C-ICE-2013-01 Contractor: GKC-VSC JV Road No. PR 1534 Lab. No. Sampled No.: S-01. Date Test: 21-09-16 Location: 60+900_LHS_1.6m Bonsw Pit 1 Date Sample: 17-09-16. Depth: 0.18 - 0.5m Description: Existing Road Gampled By: ME. Spaking started on: 21-09-16. CBR Testing Date: 25-09-16 MDD(g/cc): 1.933 OMC(%): 11.85 CBR Test (C193): Swell and Fenetration Data SWELL DATA Surcharge Weichts. 4.589 kg Mid.No.1 | Nomm) : 9585 Mkt.No.2 (H)mm) = 9305 Mid No.3 Home's Date: Time Remarks Reading in mor-Reading in rom Reading in room Shored No. Short B. 39and 1-56 21/09/16 3.30 State 300 374 37 6 0 22:09:16 541 832 169e 15.92

3.52

3.81

3.62

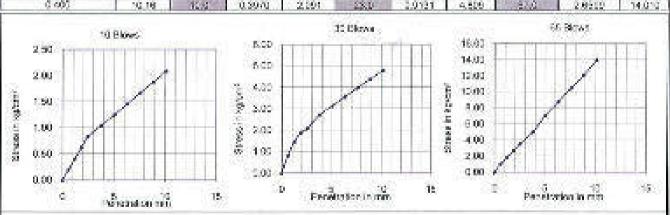
3.83

660

call.

652

The Property of the	lane.	Mary Co.	Proving King Reading and Stress									
Penetrat	ian	Moule No.A1 (10 blows)			Model	Mode No.A2 (30 Blows)			Mound No A3, (65 fillows)			
nob	ne	Dist Reading	Lough model	Stress in legton ²	film. Reading	Load in FK	Stress in lighter ²	Dia Nationg	Load in MR	Stouda et Agkan		
.5000	0.00	0.0	0.00016	0.000	0.1	0.0000	0.000	0.0	0.0000	0,000		
0.0005	0.54	10.	0.0397	0.203	4.5	0.1586	0.006	5.0	0.1965	10000		
0.050	1.27	2.0	0.8724	0.418	1/2	0.2379	1.464	2.0	0.3573	1,8842		
0.075	1.81	2.0	0.1791	0.627	500	0.2578	1.602	13.5	0.5161	2.718		
0.100	2.54	2,5	0.1508	0.006	10.0	D.327D	2 091	170	- 0.0749	3.5%		
62.55	8.61	9.8	0.1985	1.048	19.0	0.5151	2.718	24.2	0.0528	2,018		
0.200	5.05	6.0	0.2392	266	15.0	0.0905	3 137	34.0	1,0126	7.110		
4.260	8.35	TU	0.2772	1,484	18.0	0.8740	3,555	4200	1,6574	8.782		
0.300	0.62	0.0	0.3176	1,678	19.0	9.7543	3,973	10.0	1.9850	10.455		
0.350	6.80	54.D	0.2673	1.862	21.0	0.0327	4.304	25.0	2:0035	12.123		
0.000	100.000	100 0000	0.5030	A 150 mm	200.00	2.0000	A 4540	44.00	2000000	20.00		



Tested by Contractor

Witnessed by Consultant

Checked by Consultant

Saing Varies Lao Technician Date:

Meas Sophanny Lab Technician Date:

Chuor Sokchask Material Engineer Cate:

Provincial Roads Improvement Project ADS Lean No. 2839-CAV (SF) ADS Lean No. 8259-CAM

Korea Consultant International

			nination of Califo		COLOR MANAGEMENT	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	AND THE RESERVE	THE CANADA STATE	COLUMN COLUMN	
		RIP-CW-C-ICB-	2013-01			A CONTRACTOR OF STREET		Road No. I		
Lab, N					Sampled I			Date Fest:		\$(0)
Locati	an: 60+0	000_LJ-IS_1.5m		3 1	Date Sam	ple: 17-08	HAR.	Borrow Pit	12	
Descri	ption E	dating Road	10110000	ou-mond	Sampled I	By: ME		Depth: 0.1	0 + 6.5 m	
T. Control			CBR	Test (AA	SHTO	r-193)		100	49.000	
	CBR Ch	legistion :	10 Blows			30 Blows			65 Blows	
			Stress of 2.54mms	0.84	Stoors et	2.54mm-	2.00	Stream of	2.54 000-	2.55
				ko/am²			kg/cm²			kes/cm
	an accessor		Lancinos acrossos	17 (18 (19)			100 Kill (197	Lance parents		- 0.00
		s from conjected	CBR = 1.19	No.	CBR -	2.97	30	CBR =	5.06	38
	tress of R	onn No. 9A	Stress of 5.08 mm-	1.25	Stresks at	5.08mm=	3.14:	Street at	5.08mm=	07.11
graphs				keyem ²	-2500000000000	00000000	an/on	156200000000		kovan
				ROSCHI			agen			ROVERT
			CBR = 1.19	%	CBR =	2.99	76	CBR =	6.77	5%
			-			_				750
00000	10000	NEWS AND DOLLARS	researchers I	Is	43.9		288(8)	2797	85	
Adiature-Censity Determination sheet "CBR, MD"					27.2		.651	1.773	1.870	
i name e e	omesponding CBR from 2.54 mm penetration level				Sorrected C	THE POST	1.19	2.97	6.05	6
20100	ANTON DIV	2010 110 11 2-2-1 1111	Dell'or secon servi	- 40	20110-01-0-0	200	16/19/04	200	0.00	
d out the con-	Local Conference	MINES OF BRIDE SOCIO	Dry Censily (MDD)				-	740	gNee	ř.
1000000			Dry Censity (MCD)					1.836 g/cc		1
Township.	Addition to	ANSON MANAGEMENT	my parent maps.					,000	Mark	
Seaked CBR (Sc)	5.60 5.20 4.60 4.40 4.00 3.60 3.20 2.60 2.40 2.60 1.60 1.20 0.40 0.40	GB	CBR	-4.30%	90 9	of MBO		95 3	of MDD	
Tesb	ed by Co	00 1.620 1.640	2000	bry essec by C	Density g/c			Checked by	y Consulta	
Same	: Watha	Saing Varia Vices Sophen						Chuon Sak	cheak -	
22.00	; Vatha Jechnici	an	UNGHONNIC	Sophanny echnician				Chuon Sak Material En	100000000000000000000000000000000000000	

	ne ne ne ne ne ne ne	Mo	isture Density	Relationsh	ip AASHT	O T-180 fo	r CBR Tea	Ö	
Controt No. FRIP CW C (CB 2013-01 .sb No.: .controt: 601000 LHS, 1.5m Description: Existing Road					ictor: OKCAV nd No.: 8-01 temple: 17-0 nd By: ME	(MSCSM)	Road Not PR.1584 Date Test 1.21-00-15 Borrow P.11 Death: 0.15 - 0.5m		
velght c	d Rammer:	<u>4.661 kg</u> .F	ree fall height = <u>44</u>	imm with a fi	a) orcular far	ce of dia: <u>50</u> .	a mm		
keterimi	instion of	Company of the Compan	According to the Control of Control	ecoloco Si oso	Secondon Control	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	y server		
1200000	Falsa isaa sa	Trial		ar III barran	1		300	IV	V
W	1		d material∺mould	1 2	9000.0	1002000	30245.0	10175.0	9850.0
W_2	DOMESTIC STREET	uld+Base F		9	5624.9	0524.0	5624.0	5624.0	5624.0
Wy			d materials(W ₁ W	A STATE OF THE PARTY OF THE PAR	4056	4396	4621	4501	4225
Y			filling (water)		2138,00	2138.00	2135.00	2138.00	2138.00
7et		ary + W _a		6/60	1.697	2.058	2.161	2.120	1.077
Year		ity = γ _{ed} /(1 Vipisture Co		9/00	1.763	1.870	1.933	1.880	1.712
etermo	manual of r	violsture Co Can			B25	83	B40	B13	B23
101	INF of wool	igna materia		9	320.50	325.60	297.90	292.70	300,50
m.		material +		9	300.00	209.10	269.80	253.30	264.40
m	A Company of the Comp	water = (n		9	20.50	28 50	28.00	29.40	36.10
10-	Weight of			9	31.29	33 04	33.34	31.50	30.97
III	American Services and American		$a_i = (a_i, a_{i+1})$	9	250.71	266.06	230.46	222.00	233.43
m,			m ₂ /m ₄) x 100	35	7.63	9.96	11.84	13.24	15.47
2000			Moisture Density	. Distribution of	lac ()				
2 00 1.98 1.96 1.94 1.92 1.90 1.86 1.86 1.86 1.76 1.76 1.76 1.74 1.73	0	/					MDD ~	11.85	g/ec %

Saing Valha

Lab Technician

Date:

Mess Sophanny

Lab Technician

Dager

Chuon Soxoneak

Material Engineer

Deter

Provincial Reads Improvement Project ADB Loan No. 2839-CAM (SF) ADB Loan No. 8254-CAM

Korea Consultant International

		Sieve A	nalysis of Fi	ne and Coarso	e Aggregate	um teo koo oo oo o	LOCAL COLUMN		
ab No.:		-IOB-2013-01		Contractor: GKC-VSC UV Read No: PR 1534 Sampled No.: 5-01 Date Test: 23-00-16 Date Sample: 17-09-18 Borrow Pt 1					
	0+000_EHS_1 : Existing Roa			Date Sample: Sampled By: N		Borrow Pit 1 Depth : 0.18 - 0.5m			
the second section is a second second	d: AASHTO		AFAN F	. 1	Track view of the con-	Trial: 01 100.5			
Weight of a Weight of a	ry sof + weigt ry soft:	nt of can	3590.5 3490.0	<u>0</u>	Weight of can: Test Method:	100.5	9		
		500007500	Cumulative	9200200000000000	Passing Per	centege (%)	Confirm		
ASTM Sleve	Size (mm)	Weight Retained(g)	wieght retained (g)	Cumulative retained (%)	Observation	Report	Specificado: Grado		
37	70.00								
2	50,00								
1.72	37.50					3			
4.0	26.00			14-					
3/4"	19.00								
102"	12.50	S-25-77	1000	T-1000000	\$1 - Guerress 3	2 200 E			
3(8*	10.00	35.3	35.3	1.01	95,96	99			
4.4	4.75								
8.4			(i) (i)	W 114					
W.S.	23.360		70.000	7.00	355355.00	1470			
4 10	>20000	32(8,90)	372.20	10.96	89.34	82			
9.16	1.189								
# 30	0.800				10000	7,530			
# 40°	0.425	580.0	\$57.70	27,28	72.72	79			
±50	0.303								
4.90	0.100	¥———							
# 100	0.160								
¥ 200	0.075	569	1521.20	43.59	56.41	56			
Pan	0.075	0.0	Ú.						
103			Sieve	Analysis					
8550	Test 1	and the second	1	0.200 (D.005 III - II c	144				
90 -	Z .								
88	Passing IS								
70	3			1000					
200-0	9								
66							plant and the second		
56		-					- d sheet		
48		1 2 2 2							
58				40.5					
200						THE BUT			
26 -					16	Seal action			
16		4-14-4			11.				
0.0	68	5.3		15.	100				
Section 1	_		VIII.				2000		
Tested by	Contractor		everaseo	by Consultant		Checked by	Consultant		
	00		Wees Soot	eccu.		Chuon Sokol	heak		
Saing Vat			the best acceptant	Lab Technician			Material Engineer		
Saing Vati Lab Techn			TO 100 TO	2000		Material Eng	neer		

98

Improvement of PR150B, NR53 and PR151B Project

Plasticity Index Test AASHTO T-89 and T-90								
Contrat No.: PRIP-CW-C-ICB-2013-01	Contractor: GKC-VSC aV	Road No: PR 1534						
Lab No;	Sampled No.: S-01	Date Test 23-00-16						
Location; 60+000 LHS_1.6m	Date Sample: 17-09-19	Borrow P.b1						
Description: Existing Road	Sampled By: ME	Depth: 0.18 - 0.5m						

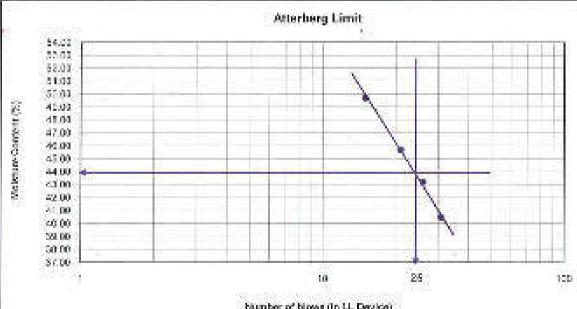
Test Method - AASHTO T-89 and T-90

Data Sheet

Cate:

33

Liquid Limit (L.E.)									
2000	Description	No.of blows	15 838	21 820	26 S27	31	Plastic Limit (PL)		
Symbol	Sessipion:	Tin No.				S11	\$25	S21	
W.	Weight of can + Wet soil	S	29.03	29,93	30,43	80.61	26.65	28.08	
We	Weight of can + Dry soil	g	25.10	25.76	26.06	26.57	25.19	25.40	
W ₃	Weight of can	9	36.19	30.84	(75.95	16.15	18/77	15.96	
W.	Weight of water = (W,-W ₃)	9	4,43	4,12	4.37	4.4	27	1.52	
W ₃	Weight of dry soil = (W_p, W_p)	9	6.91	0.12	10.41	10.22	9.02	9.50	
W_0	Moisture content #(W,/W,#100)	56	49.72	45.72	23,22	40.51	10.00	16.00	
1.0	Liquid Limit (from graph)	8	44.00 16.15						
PI	Plastic Index	56	27.06						



Tested by Contractor Witnessed by Consultant Checked by Consultant

Saing Valha Mass Sophenny Chuon Sokoheak
Lab Technician Material Engineer

Date:

Daber

Provincet Roads Improvement Project ADB Usen No. 2838-CAM (SF) ADB Usen No. 8254-CAM

Korea Consultant International Improvement of PR150B, NR53 and PR151B Project

	2,399.00	8008.08.000.000	9,359700	000000	0.0000000000000000000000000000000000000	SHU CHOW	Sept. C	Signatur		
	Sun	mary of t	est F	(esu	lt (Emban	kment	Mate	rial)		
1.Description						14.				
Consultent	KC/ En MEC	KC/ Engineering Co. Ltd? MECC/SBK/SAWAC		Contractor			GUMKANG-VSC JV			
Lab No		T63-54		Ē	Date of sampling		25-01-2015			
Sample No.		\$.125		Date completed of testing		25-01-2015				
Description		Silty Clayey &Sand For Embankmet Materials			Losation		Borrow Pit PK: 18+600/RHS_660m, PR 1508-W,Size(60x50x3.5)m			
2. Teat Result			115						XIII	
ltem -	1.5iaos (%)	2 Attacheng I		ang Lim	ń		4 Frodor		5 CBR (%)	
item	# 0,075mm	TL(%)	PL)	8.)	PI	MDD (g/cc)		OMC (%)	(90% of MDD)	
Tost Result	56.41	44.00	16.	.15	27.85	1.933		11.85	2,40	
Specification	18733	1355	32			1 50		56	8.40	
Decision	88284	523	52		33	25		207	Accept	
3. Engineer's C	omment	0								
4. Certification						20		- 45		
llem	Ns	me		Po	Postion		Clarke		Signature	
Tested By			20	Lab Tedwiden						
Checked By			М	atena	Logneer					
Reviewed B	ý		Int	.Mater	ial Engneer					
Approved B	y		70	esiden	t Engineer					