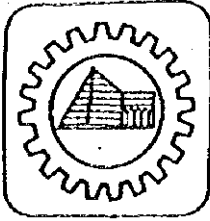


BAMBAN RIVER



R.D. POLICARPIO & CO., INC.

ENGINEERS • CONTRACTORS • BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 3km south of Bamban town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-025-94
 DATE: 4-27-94
 SOURCE: Bamban-2, Sample # 1

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{1.6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11.	ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

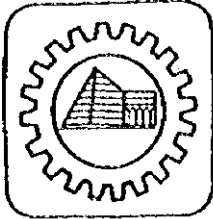
II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.2		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1423.5		
4.	WT. OF WATER GR. (3-2)	193.3		
5.	WT. OF OVEN-DRY SAMPLE GR.	440.6		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.44		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.63		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1.5)}$	1.76		
9.	ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	13.48		

TESTED BY: H.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zoroff



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0026-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-18-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 2, SAMPLE # 2 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	488.50		2.35		

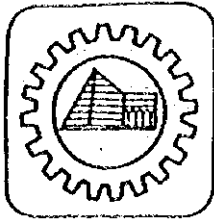
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	5.90	1.22	98.78	98		
1/2"	12.7	27.60	5.70	93.08	93		
3/8"	9.5	26.70	5.51	87.57	88		
No. 4	4.75	91.60	18.92	68.65	69		
No. 8	2.38	87.60	18.09	50.56	51		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	61.40	12.68	37.88	38		
No. 20	0.84						
No. 30	.59	52.90	10.93	26.95	27		
No. 40	.42						
No. 50	.297	84.20	17.39	9.56	10		
No. 60	.250						
No. 80	.177						
No. 100	.149	37.60	7.77	1.79	2		
No. 200	.074	6.80	1.40	0.39	0		
PAN		1.90					
WASH							
TOTAL		484.20					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** DATE: **04-25-94**
 CHECKED BY: **GL ZERVOULAKOS** DATE: **05-20-94**

DRY LOOSE **939.13**
 DRY RODDED **1101.54**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 3km south of Bamban town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-026-94
 DATE: 4-27-94
 SOURCE: Bamban-2, Sample # 2

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6) - (3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

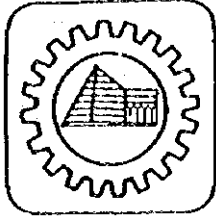
II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.6		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1437.0		
4.	WT. OF WATER GR. (3-2)	206.4		
5.	WT. OF OVEN-DRY SAMPLE GR.	449.8		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.53		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.70		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500-4 - (1-5)}$	1.85		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	11.16		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zepeda



R.D. POLICARPIO & CO., INC.

ENGINEERS • CONTRACTORS • BUILDERS

MECHANICAL ANALYSIS

TRN SA-0027-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-18-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 2, SAMPLE # 3 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	492.60		1.50		

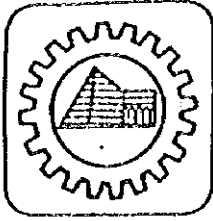
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	20.60	4.22	95.78	96		
3/8"	9.5	24.80	5.08	90.70	91		
No. 4	4.75	96.80	19.82	70.88	71		
No. 8	2.38	82.00	16.79	54.09	54		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	79.60	16.29	37.80	38		
No. 20	0.84						
No. 30	.59	98.50	20.16	17.64	18		
No. 40	.42						
No. 50	.297	58.70	12.02	5.62	6		
No. 60	.250						
No. 80	.177						
No. 100	.149	22.90	4.69	0.93	1		
No. 200	.074	0.50	0.10	0.83	1		
PAN		4.10					
WASH							
TOTAL		488.50					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** DATE: **04-25-94**
 CHECKED BY: **GL ZERVOULAKOS** DATE: **05-20-94**

DRY LOOSE **870.88**
 DRY RODDED **1030.93**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 3km south of Bamban town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-027-94
 DATE: 4-27-94
 SOURCE: Bamban-2, Sample # 3

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6) - (3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.5		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1429.2		
4.	WT. OF WATER GR. (3-2)	148.7		
5.	WT. OF OVEN-DRY SAMPLE GR.	440.5		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.46		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.66		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500-4 - (1-5)}$	1.82		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	13.51		

TESTED BY: M.G. Miresol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: E.L. Zerypoulakos

SUMMARY SHEET FOR LAHAR MATERIAL SURVEY

PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAH-4
LOCATION : 5Km east of Bamban Town	DATE : 4-19-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : Bamban River

	TEST PIECE NO.		
	NO. 1	NO. 2	NO. 3
SIEVE ANALYSIS			
Cumulative % Passing			
Sieve Size 37.5 mm	100	100	100
25.0 mm	97.73	100	100
19.0 mm	90.18	96.20	98.41
12.5 mm	85.22	93.73	97.70
9.5 mm	81.01	87.58	95.89
4.75 mm	69.27	75.37	88.99
2.36 mm	58.34	64.41	73.93
1.18 mm	46.01	49.06	62.17
0.60 mm	45.36	34.03	53.42
0.30 mm	12.76	28.29	43.59
0.150 mm	2.84	16.62	17.79
0.075 mm	0.61	15.04	14.57
SPECIFIC GRAVITY	1.70	1.84	1.78
ABSORPTION (%)	12.89	13.79	12.36
UNIT WEIGHT (kg/m3)			
Rodded	932.07	898.65	971.61
Loose	877.94	805.91	826.15

WORKSHEET FOR SPECIFIC GRAVITY TEST

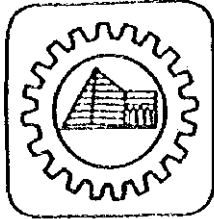
PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAN-4
LOCATION : 5km east of Bamban town	DATE : 4-20-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : BAMBAN RIVER

I. COURSE AGGREGATE (WIRE BASKET METHOD)

ITEM	TEST PIECE NO.		
	NO.	NO.	NO.
1. WT. of SSD + basket in air, gr			
2. WT. of basket in air, gr			
3. WT. of SSD sample in air, gr, (1-2)			
4. WT. of sample + basket in the water, gr			
5. WT. of basket in water, gr			
6. WT. of sample in water, gr, (4-5)			
7. WT. of oven-dry sample, gr			
8. Bulk specific gravity (dry), $7/(3-6)$			
9. Bulk specific gravity (SSD), $3/(3-6)$			
10. Apparent specific gravity, $7/((3-6)-(3-7))$			
11. Absorption, %, $(3-7)/7 \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

	NO. 1	NO. 2	NO. 3
1. WT. of SSD sample, gr	500	500	500
2. WT. of pycnometer + water, gr	1230.50	1230.40	1230.50
3. WT. of pycnometer + sample + water, gr	1412.30	1430.70	1426.10
4. WT. of water, gr, (3-2)	181.80	200.30	195.60
5. WT. of oven-dry sample, gr	442.90	439.40	445.0
6. Bulk specific gravity (dry), $5/(500-4)$	1.39	1.47	1.46
7. Bulk specific gravity (SSD), $1/(500-4)$	1.57	1.67	1.64
8. Apparent specific gravity, $5/((500-4)-(1-5))$	1.70	1.84	1.78
9. Absorption, %, $(1-5)/5 \times 100$	12.89	13.79	12.36



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0010-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCT/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 4, SAMPLE # 1 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	496.00		0.81		

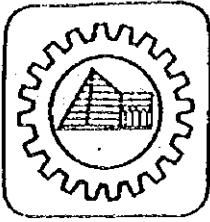
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	11.20	2.27	87.73	98		
3/4"	19.1	37.30	7.55	90.18	90		
1/2"	12.7	24.50	4.96	85.22	85		
3/8"	9.5	20.80	4.21	81.01	81		
No. 4	4.75	58.00	11.74	69.27	89		
No. 8	2.38	54.00	10.93	58.34	58		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	60.90	12.33	46.01	46		
No. 20	0.84						
No. 30	.59	3.20	0.65	45.36	45		
No. 40	.42						
No. 50	.297	161.00	32.60	12.76	13		
No. 60	.250						
No. 80	.177						
No. 100	.149	49.00	9.92	2.84	3		
No. 200	.074	11.00	2.23	0.61	1		
PAN		3.00					
WASH							
TOTAL		493.90					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC HIRASOL** DATE: **04-19-94**
GL ZERVOULAKOS DATE: **05-20-94**

DRY LOOSE **877.94**
DRY RODDED **932.07**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 5km east of Bamban town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-010-94
 DATE: 4-20-94
 SOURCE: BAMBAN-4, Sample # 1

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT. OF SSD + BASKET IN AIR, GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11. ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

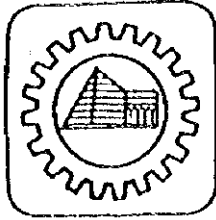
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.5		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1412.3		
4. WT. OF WATER GR. (3-2)	181.8		
5. WT. OF OVEN-DRY SAMPLE GR.	442.90		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500 - 4}$	1.39		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500 - 4}$	1.57		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500 - 4 - (1.5)}$	1.70		
9. ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	12.89		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. [Signature]



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRSA-0011-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 4, SAMPLE # 2 **BAMBAN RIVER**

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original 500	Oven dry 496.00	Washed oven dry			
			0.81		

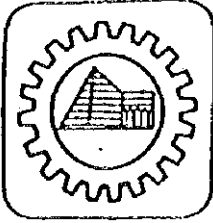
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	18.80	3.80	96.20	96		
1/2"	12.7	12.20	2.47	93.73	94		
3/8"	9.5	30.40	6.15	87.58	88		
No. 4	4.75	60.40	12.21	75.37	75		
No. 8	2.38	54.20	10.96	64.41	64		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	75.90	15.35	49.06	49		
No. 20	0.84						
No. 30	.59	74.30	15.03	34.03	34		
No. 40	.42						
No. 50	.297	28.40	5.74	28.29	28		
No. 60	.250						
No. 80	.177	57.70	11.67	16.62	17		
No. 100	.149						
No. 200	.074	7.80	1.58	15.04	15		
PAN		74.40					
WASH							
TOTAL		494.50					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: MC MIRASOL DATE: 04-19-94
GL ZERVOULAKOS DATE: 05-20-94
 CHECKED BY: _____

DRY LOOSE 805.91
 DRY RODDED 898.65



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 5km east of Baban town
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-011-94
 DATE: 4-20-94
 SOURCE: BABAN-4, Sample # 2

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT. OF SSD + BASKET IN AIR GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11. ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

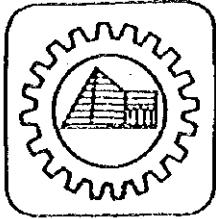
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.4		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1430.7		
4. WT. OF WATER GR. (3-2)	200.3		
5. WT. OF OVEN-DRY SAMPLE GR.	439.40		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.47		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.67		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500-4 - (1.5)}$	1.84		
9. ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	13.79		

TESTED BY: N.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zorvonlaxos



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0012-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 4, SAMPLE # 3 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	495.00		1.01		

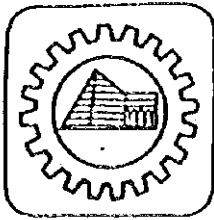
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	7.80	1.59	98.41	98		
1/2"	12.7	3.50	0.71	97.70	98		
3/8"	9.5	8.90	1.81	95.89	96		
No. 4	4.75	33.90	6.90	88.99	89		
No. 8	2.38	74.00	15.06	73.93	74		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	57.80	11.76	62.17	62		
No. 20	0.84						
No. 30	.59	43.00	8.75	53.42	53		
No. 40	.42						
No. 50	.297	48.30	9.83	43.59	44		
No. 60	.250						
No. 80	.177						
No. 100	.149	126.80	25.80	17.79	18		
No. 200	.074	15.80	3.22	14.57	15		
PAN		71.60					
WASH							
TOTAL		491.40					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: MC MIRASOL DATE: 04-19-94
CHECKED BY: GL ZERVOULAKOS DATE: 05-20-94

DRY LOOSE 826.15
DRY RODDED 971.61



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 5km east of Bamban town
 TYPE OF MATERIALS: LaHar Material (F.A.)

TEST REPORT NO.: SG-012-94
 DATE: 4-20-94
 SOURCE: BAMBAN-4, Sample # 3

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6) \cdot (3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.5		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1426.1		
4.	WT. OF WATER GR. (3-2)	195.6		
5.	WT. OF OVEN-DRY SAMPLE GR.	445.0		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.46		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.64		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500-4 \cdot (1-5)}$	1.78		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	12.36		

TESTED BY: H.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zervoulakos

SUMMARY SHEET FOR LAHAR MATERIAL SURVEY

PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAM-5
LOCATION : 6Km southeast of Bamban Town	DATE : 4-28-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : Bamban River

	TEST PIECE NO.		
	NO. 1	NO. 2	NO. 3
SIEVE ANALYSIS			
Cumulative % Passing			
Sieve Size 37.5 mm	100	100	100
25.0 mm	100	100	100
19.0 mm	100	100	100
12.5 mm	99.69	100	100
9.5 mm	98.67	99.94	99.84
4.75 mm	95.06	98.81	98.88
2.36 mm	88.02	96.92	96.97
1.18 mm	74.55	86.93	86.46
0.60 mm	52.63	60.97	58.42
0.30 mm	26.75	27.16	29.29
0.150 mm	4.62	5.69	6.15
0.075 mm	2.25	3.29	3.13
SPECIFIC GRAVITY	2.13	2.25	2.09
ABSORPTION (%)	8.46	9.84	8.77
UNIT WEIGHT (kg/m3)			
Rodded	1405.17	1488.49	1516.73
Loose	1195.69	1248.41	1304.90

WORKSHEET FOR SPECIFIC GRAVITY TEST

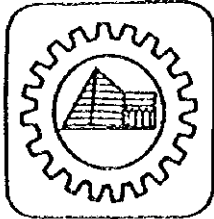
PROJECT : LAHAR MATERIAL SURVBY	TEST SAMPLE NO. BAN-5
LOCATION : 6km southeast of Bambang town	DATE : 4-30-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : BAMBAN RIVER

I. COURSE AGGREGATE (WIRE BASKET METHOD)

ITEM	TEST PIECE NO.		
	NO.	NO.	NO.
1. WT. of SSD + basket in air, gr			
2. WT. of basket in air, gr			
3. WT. of SSD sample in air, gr, (1-2)			
4. WT. of sample + basket in the water, gr			
5. WT. of basket in water, gr			
6. WT. of sample in water, gr, (4-5)			
7. WT. of oven-dry sample, gr			
8. Bulk specific gravity (dry), $7/(3-6)$			
9. Bulk specific gravity (SSD), $3/(3-6)$			
10. Apparent specific gravity, $7/[(3-6)-(3-7)]$			
11. Absorption, %, $(3-7)/7 \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

	NO. 1	NO. 2	NO. 3
1. WT. of SSD sample, gr	500	500	500
2. WT. of pycnometer + water, gr	680.70	680.70	680.80
3. WT. of pycnometer + sample + water, gr	925.70	933.30	920.10
4. WT. of water, gr, (3-2)	245.00	252.60	239.30
5. WT. of oven-dry sample, gr	461.00	455.20	459.70
6. Bulk specific gravity (dry), $5/(500-4)$	1.81	1.84	1.76
7. Bulk specific gravity (SSD), $1/(500-4)$	1.96	2.02	1.92
8. Apparent specific gravity, $5/[(500-4)-(1-5)]$	2.13	2.25	2.09
9. Absorption, %, $(1-5)/5 \times 100$	8.46	9.84	8.77



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0031-84

PROJECT LAHAR MATERIAL SURVEY	DATE OF REPORT 06-01-94
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SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY AND DATE RDPCI/04-18-94
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SAMPLED AT (stockpile, batch plant, place, etc.) BAHBAN # 5, SAMPLE # 1	SOURCE: River, quarry, etc.) BAHBAN RIVER
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WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	493.20		1.38		

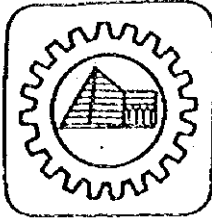
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	1.50	0.31	99.69	100		
3/8"	9.5	5.00	1.02	98.67	99		
No. 4	4.75	17.70	3.61	95.06	95		
No. 8	2.38	34.50	7.04	88.02	88		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	66.00	13.47	74.55	75		
No. 20	0.84						
No. 30	.59	107.40	21.92	52.63	53		
No. 40	.42						
No. 50	.297	126.80	25.88	26.75	27		
No. 60	.250						
No. 80	.177						
No. 100	.149	108.40	22.13	4.62	5		
No. 200	.074	11.60	2.37	2.25	2		
PAN		11.00					
WASH							
TOTAL		489.90					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: MC KIRASOL DATE: 04-28-94
GL ZERVOULAKOS DATE: 05-20-94

DRY LOOSE 1195.69
 DRY RODDED 1405.17



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 6km southeast of Bamban town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-031-94
 DATE: 4-30-94
 SOURCE: BAMBAN-5, Sample # 1

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT. OF SSD + BASKET IN AIR GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11. ABSORPTION % $\frac{(3.7)}{7} \times 100$			

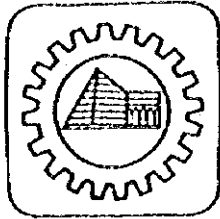
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	680.70		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	925.70		
4. WT. OF WATER GR. (3-2)	245.00		
5. WT. OF OVEN-DRY SAMPLE GR.	461.00		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.81		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.96		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1.5)}$	2.13		
9. ABSORPTION % $\frac{(1.5)}{5} \times 100$	8.46		

TESTED BY: M.C. Mirabal

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: M. Polcarpio



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN SA-0032-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCT/04-18-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 5, SAMPLE # 2 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	493.40		1.34		

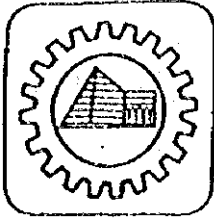
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	0.00	0.00	100.00	100		
3/8"	9.5	0.30	0.06	99.94	100		
No. 4	4.75	5.50	1.13	98.81	99		
No. 8	2.38	9.20	1.89	96.92	97		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	48.70	9.99	86.93	87		
No. 20	0.84						
No. 30	.59	126.60	25.96	60.97	61		
No. 40	.42						
No. 50	.297	164.90	33.81	27.16	27		
No. 60	.250						
No. 80	.177						
No. 100	.149	104.70	21.47	5.69	6		
No. 200	.074	11.70	2.40	3.29	3		
PAN		16.10					
WASH							
TOTAL		487.70					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** DATE: **04-28-94**
GL ZERVOULAKOS DATE: **05-20-94**

DRY LOOSE **1248.41**
 DRY RODDED **1488.49**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 6km southeast of Bamban town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-032-94
 DATE: 4-30-94
 SOURCE: BAMBAN-5, Sample # 2

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6)-(3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

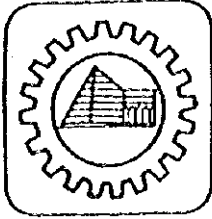
II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	680.70		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	933.30		
4.	WT. OF WATER GR. (3-2)	252.60		
5.	WT. OF OVEN-DRY SAMPLE GR.	455.20		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.84		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	2.02		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500-4-(1-5)}$	2.25		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	9.84		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zepherino



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0033-94

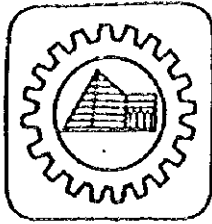
PROJECT LAHAR MATERIAL SURVEY				DATE OF REPORT 06-01-94			
SPECIFICATION			PURPOSE OF MATERIAL		SAMPLED BY AND DATE RDPCI/04-18-94		
SAMPLED AT (stockpile, batch plant, place, etc.) BAMBAN # 5, SAMPLE # 3					SOURCE: River, quarry, etc.) BAMBAN RIVER		
WEIGHT OF SAMPLE			MOISTURE CONTENT (%) 1.30	QUANTITY REPRESENTED	MAN. SIZE (INCH)		
Original 500	Oven dry 493.60	Washed oven dry					
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	0.00	0.00	100.00	100		
3/8"	9.5	0.80	0.16	99.84	100		
No. 4	4.75	4.70	0.96	98.88	99		
No. 8	2.38	9.30	1.91	96.97	97		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	51.20	10.51	86.46	86		
No. 20	0.84						
No. 30	.59	136.60	28.04	58.42	58		
No. 40	.42						
No. 50	.297	141.90	29.13	29.29	29		
No. 60	.280						
No. 80	.177						
No. 100	.149	112.70	23.14	6.15	6		
No. 200	.074	14.70	3.02	3.13	3		
PAN		15.20					
WASH							
TOTAL		487.10					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** *[Signature]* DATE: **04-28-94**
GL ZERVOULAKOS *[Signature]* DATE: **05-20-94**

DRY LOOSE **1304.90**
 DRY RODDED **1516.73**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 6km southeast of Bambang town
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-033-94
 DATE: 4-30-94
 SOURCE: BAMBAN-5, Sample # 3

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11.	ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	680.80		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	920.10		
4.	WT. OF WATER GR. (3-2)	239.30		
5.	WT. OF OVEN-DRY SAMPLE GR.	459.70		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500 - 4}$	1.76		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500 - 4}$	1.92		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500 - 4 - (1.5)}$	2.09		
9.	ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	8.77		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Gervoulakos

SUMMARY SHEET FOR LAHAR MATERIAL SURVEY

PROJECT: LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAH-6
LOCATION: 3Km south of Sn. Francisco Bridge	DATE: 4-20-94
TYPE OF MATERIALS: Lahar Material (FA)	SOURCE: Baban River

	TEST PIECE NO.		
	NO. 1	NO. 2	NO. 3
SIEVE ANALYSIS			
Cumulative % Passing			
Sieve Size 37.5 mm	100	100	100
25.0 mm	94.85	91.03	100
19.0 mm	93.69	87.38	100
12.5 mm	92.87	83.44	99.75
9.5 mm	90.04	81.96	97.11
4.75 mm	86.62	77.88	86.76
2.36 mm	79.14	68.77	72.21
1.18 mm	60.56	56.33	53.75
0.60 mm	48.32	45.43	39.49
0.30 mm	34.37	27.43	13.61
0.150 mm	14.24	8.35	2.61
0.075 mm	9.17	3.99	2.02
SPECIFIC GRAVITY	1.52	1.60	1.47
ABSORPTION (%)	14.50	12.71	13.43
UNIT WEIGHT (kg/m3)			
Rodded	867.58	874.17	979.15
Loose	814.86	753.19	844.98

WORKSHEET FOR SPECIFIC GRAVITY TEST

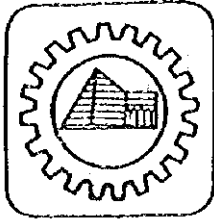
PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAK-6
LOCATION : 3km south of San Francisco bridge	DATE : 4-21-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : BAMBAN RIVER

I. COURSE AGGREGATE (WIRE BASKET METHOD)

ITEM	TEST PIECE NO.		
	NO.	NO.	NO.
1. WT. of SSD + basket in air, gr			
2. WT. of basket in air, gr			
3. WT. of SSD sample in air, gr, (1-2)			
4. WT. of sample + basket in the water, gr			
5. WT. of basket in water, gr			
6. WT. of sample in water, gr, (4-5)			
7. WT. of oven-dry sample, gr			
8. Bulk specific gravity (dry), $7/(3-6)$			
9. Bulk specific gravity (SSD), $3/(3-6)$			
10. Apparent specific gravity, $7/[(3-6)-(3-7)]$			
11. Absorption, %, $(3-7)/7 \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

	NO. 1	NO. 2	NO. 3
1. WT. of SSD sample, gr	500	500	500
2. WT. of pycnometer + water, gr	1230.50	1230.60	1230.50
3. WT. of pycnometer + sample + water, gr	1380.0	1396.50	1370.90
4. WT. of water, gr, (3-2)	149.50	165.90	140.40
5. WT. of oven-dry sample, gr	436.70	443.60	440.80
6. Bulk specific gravity (dry), $5/(500-4)$	1.25	1.33	1.23
7. Bulk specific gravity (SSD), $1/(500-4)$	1.43	1.50	1.39
8. Apparent specific gravity, $5/[(500-4)-(1-5)]$	1.52	1.60	1.47
9. Absorption, %, $(1-5)/5 \times 100$	14.50	12.71	13.43



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0013-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 6, SAMPLE # 1 **BAMBAN RIVER**

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	497.40		0.52		

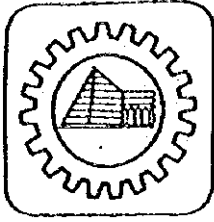
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	25.30	5.15	94.85	95		
3/4"	19.1	5.70	1.16	93.69	94		
1/2"	12.7	4.00	0.81	92.87	93		
3/8"	9.5	13.90	2.83	90.04	90		
No. 4	4.75	16.80	3.42	86.62	87		
No. 8	2.38	36.70	7.48	79.14	79		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	91.20	18.58	60.56	61		
No. 20	0.84						
No. 30	.59	60.10	12.24	48.32	48		
No. 40	.42						
No. 50	.297	88.50	13.95	34.37	34		
No. 60	.250						
No. 80	.177						
No. 100	.149	98.80	20.13	14.24	14		
No. 200	.074	24.90	5.07	9.17	9		
PAN		45.00					
WASH							
TOTAL		490.90					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** DATE: **04-20-94**
GL ZERVOULAKOS DATE: **05-20-94**
 CHECKED BY: _____

DRY LOOSE **814.86**
 DRY RODDED **867.58**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 3km south of San Francisco bridge
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-013-94
 DATE: 4-21-94
 SOURCE: BAMBAN-6, Sample # 1

I. COURSE AGGREGATE (WIRE BASKET METHOD)

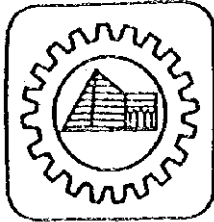
1. WT. OF SSD + BASKET IN AIR, GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11. ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.5		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1380.0		
4. WT. OF WATER GR. (3-2)	149.5		
5. WT. OF OVEN-DRY SAMPLE GR.	436.70		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.25		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.43		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1.5)}$	1.52		
9. ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	14.50		

TESTED BY: M.C. Mirasol
 CHECKED AND NOTED BY: G.L. Efstathiou

DATE REPORTED 6-01-94



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRSA-0014-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: (river, quarry, etc.)
BAMBAN # 6, SAMPLE # 2 **BAMBAN RIVER**

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original 500	Oven dry 496.00	Washed oven dry			
			0.81		

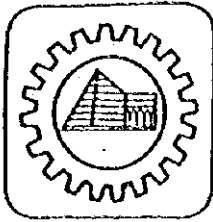
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	44.20	8.97	91.03	91		
3/4"	19.1	18.00	3.65	87.38	87		
1/2"	12.7	19.40	3.94	83.44	83		
3/8"	9.5	7.30	1.48	81.96	82		
No. 4	4.75	20.10	4.08	77.88	78		
No. 8	2.38	44.90	9.11	68.77	69		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	61.30	12.44	56.33	56		
No. 20	0.84						
No. 30	.59	53.70	10.90	45.43	45		
No. 40	.42						
No. 50	.297	88.70	18.00	27.43	27		
No. 60	.250						
No. 80	.177						
No. 100	.149	94.00	19.08	8.35	8		
No. 200	.074	21.50	4.36	3.99	4		
PAN		19.50					
WASH							
TOTAL		492.60					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC KIRASOL** DATE: **04-20-94**
GL ZERVOULAKOS DATE: **05-20-94**

DRY LOOSE **753.19**
 DRY RODDED **874.17**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 3km south of San Francisco bridge
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-014-94
 DATE: 4-21-94
 SOURCE: BAMRAN-6, Sample # 2

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11.	ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

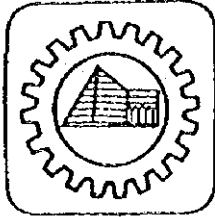
II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.6		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1396.5		
4.	WT. OF WATER GR. (3-2)	165.90		
5.	WT. OF OVEN-DRY SAMPLE GR.	443.60		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.33		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.50		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1.5)}$	1.60		
9.	ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	12.71		

TESTED BY: M.C. Hiresol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zepoulakos



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN SA-0015-94

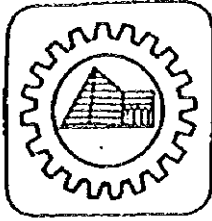
PROJECT LAHAR MATERIAL SURVEY				DATE OF REPORT 06-01-94			
SPECIFICATION		PURPOSE OF MATERIAL		SAMPLED BY AND DATE RDPCI/04-15-94			
SAMPLED AT (stockpile, batch plant, place, etc.) BAHBAN # 6, SAMPLE # 3				SOURCE: River, quarry, etc.) BAHBAN RIVER			
WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)		
Original 500	Oven dry 496.00	Washed oven dry				0.81	
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	1.20	0.25	99.75	100		
3/8"	9.5	12.90	2.64	97.11	97		
No. 4	4.75	50.50	10.35	86.76	87		
No. 8	2.38	71.00	14.55	72.21	72		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	90.10	18.46	53.75	54		
No. 20	0.84						
No. 30	.59	69.60	14.26	39.49	39		
No. 40	.42						
No. 50	.297	126.30	25.88	13.61	14		
No. 60	.250						
No. 80	.177						
No. 100	.149	53.70	11.00	2.61	3		
No. 200	.074	2.90	0.59	2.02	2		
PAN		9.80					
WASH							
TOTAL		488.00					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: HC MIRASOL DATE: 04-20-94
GL ZERVOULAKOS DATE: 05-20-94

DRY LOOSE 844.98
 DRY RODDED 979.15



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 3km south of San Francisco bridge
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-015-94
 DATE: 4-21-94
 SOURCE: BANBAN-6, Sample # 3

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6)-(3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.5		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1370.9		
4.	WT. OF WATER GR. (3-2)	140.40		
5.	WT. OF OVEN-DRY SAMPLE GR.	440.80		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.23		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.39		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500-4-(1-5)}$	1.47		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	13.43		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zentgraf

SUMMARY SHEET FOR LAHAR MATERIAL SURVEY

PROJECT: LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAM-7
LOCATION: 2Km south of Concepcion Town	DATE: 4-21-94
TYPE OF MATERIALS: Lahar Material (FA)	SOURCE: Bangban River

	TEST PIECE NO.		
	NO. 1	NO. 2	NO. 3
SIEVE ANALYSIS			
Cumulative % Passing			
Sieve Size 37.5 mm	100	100	100
25.0 mm	100	100	100
19.0 mm	100	98.98	100
12.5 mm	97.74	97.54	94.61
9.5 mm	96.06	96.33	90.31
4.75 mm	83.71	88.74	73.81
2.36 mm	64.23	72.82	51.97
1.18 mm	46.26	46.85	35.08
0.60 mm	26.45	32.37	26.17
0.30 mm	7.99	12.85	8.44
0.150 mm	1.82	4.44	2.63
0.075 mm	1.80	2.19	1.71
SPECIFIC GRAVITY	1.56	1.66	1.62
ABSORPTION (%)	13.43	12.92	13.71
UNIT WEIGHT (kg/m3)			
Rodded	974.44	967.38	928.31
Loose	824.74	835.57	786.14

WORKSHEET FOR SPECIFIC GRAVITY TEST

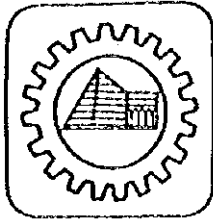
PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAN-7
LOCATION : 2 KM south of Concepcion TOWN.	DATE : 4-22-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : BAMBAN RIVER

I. COURSE AGGREGATE (WIRE BASKET METHOD)

ITEM	TEST PIECE NO.		
	NO.	NO.	NO.
1. WT. of SSD + basket in air, gr			
2. WT. of basket in air, gr			
3. WT. of SSD sample in air, gr, (1-2)			
4. WT. of sample + basket in the water, gr			
5. WT. of basket in water, gr			
6. WT. of sample in water, gr, (4-5)			
7. WT. of oven-dry sample, gr			
8. Bulk specific gravity (dry), $7/(3-6)$			
9. Bulk specific gravity (SSD), $3/(3-6)$			
10. Apparent specific gravity, $7/[(3-6)-(3-7)]$			
11. Absorption, %, $(3-7)/7 \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

	NO. 1	NO. 2	NO. 3
1. WT. of SSD sample, gr	500	500	500
2. WT. of pycnometer + water, gr	1230.30	1230.60	1230.30
3. WT. of pycnometer + sample + water, gr	1388.70	1407.20	1398.40
4. WT. of water, gr, (3-2)	158.40	176.60	168.10
5. WT. of oven-dry sample, gr	440.80	442.80	439.70
6. Bulk specific gravity (dry), $5/(500-4)$	1.29	1.37	1.32
7. Bulk specific gravity (SSD), $1/(500-4)$	1.46	1.55	1.51
8. Apparent specific gravity, $5/[(500-4)-(1-5)]$	1.56	1.66	1.62
9. Absorption, %, $(1-5)/5 \times 100$	13.43	12.92	13.71



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0016-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 7, SAMPLE # 1 **BAMBAN RIVER**

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	492.30		1.56		

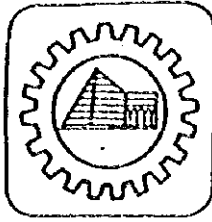
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH OC	PERCENT PASSING	SPECS PERCENT PASSING	CUM PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	11.00	2.26	97.74	98		
3/8"	9.5	8.20	1.68	98.06	96		
No. 4	4.75	60.20	12.35	83.71	84		
No. 8	2.38	95.00	19.48	64.23	64		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	87.60	17.97	46.26	46		
No. 20	0.84						
No. 30	.59	96.60	19.81	26.45	26		
No. 40	.42						
No. 50	.297	90.00	18.46	7.99	8		
No. 60	.250						
No. 80	.177						
No. 100	.149	30.10	6.17	1.82	2		
No. 200	.074	0.10	0.02	1.80	2		
PAN		8.80					
WASH							
TOTAL		487.60					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: MC MIRASOL DATE: 04-21-94
 CHECKED BY: GL ZERVOULAKOS DATE: 05-20-94

DRY LOOSE 824.74
 DRY RODDED 974.44



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 2km south of Concepcion town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-016-94
 DATE: 4-22-94
 SOURCE: RANBAN-7, Sample 1

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT OF SSD + BASKET IN AIR GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11. ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

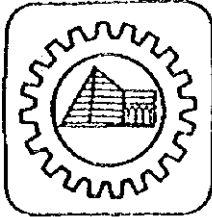
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.3		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1388.7		
4. WT. OF WATER GR. (3-2)	158.4		
5. WT. OF OVEN-DRY SAMPLE GR.	440.8		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.29		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.46		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1.5)}$	1.56		
9. ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	15.43		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. [Signature]



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN SA-0017-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 7, SAMPLE # 2 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	483.50		3.41		

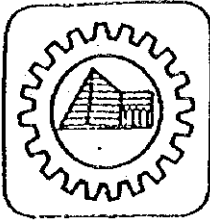
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	4.90	1.02	98.98	99		
1/2"	12.7	6.90	1.44	97.54	98		
3/8"	9.5	5.80	1.21	96.33	96		
No. 4	4.75	36.40	7.59	88.74	89		
No. 8	2.38	76.30	15.92	72.82	73		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	124.50	25.97	46.85	47		
No. 20	0.84						
No. 30	.59	69.40	14.48	32.37	32		
No. 40	.42						
No. 50	.297	93.60	19.52	12.85	13		
No. 60	.250						
No. 80	.177						
No. 100	.149	40.30	8.41	4.44	4		
No. 200	.074	10.80	2.25	2.19	2		
PAN		10.50					
WASH							
TOTAL		479.40					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** DATE: **04-21-94**
GL ZERVOULAKOS DATE: **05-20-94**

DRY LOOSE **835.57**
DRY RODDED **967.38**



R.D. POLICARPIO & CO., INC.

ENGINEERS • CONTRACTORS • BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 2km south of Concepcion town
 TYPE OF MATERIALS: LaHar Mat-rial (P.A.)

TEST REPORT NO.: SG-017-94
 DATE: 4-22-94
 SOURCE: BAMBAN-7, Sample # 2

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT. OF SSD + BASKET IN AIR GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6) - (3-7)}$			
11. ABSORPTION % $\frac{(3-7)}{7} \times 100$			

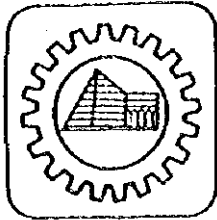
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.6		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1407.2		
4. WT. OF WATER GR. (3-2)	176.6		
5. WT. OF OVEN-DRY SAMPLE GR.	442.80		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.37		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.55		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500-4 - (1-5)}$	1.66		
9. ABSORPTION % $\frac{(1-5)}{5} \times 100$	12.92		

TESTED BY: M.G. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G. J. Zervoulakos



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN: SA-0018-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 7, SAMPLE # 3 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	482.00		3.73		

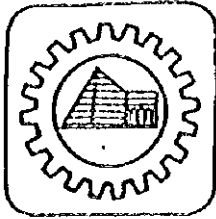
SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	25.70	5.39	94.61	95		
3/8"	9.5	20.50	4.30	90.31	90		
No. 4	4.75	78.70	16.50	73.81	74		
No. 8	2.38	104.20	21.84	51.97	52		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	80.60	16.89	35.08	35		
No. 20	0.84						
No. 30	.59	42.50	8.91	26.17	26		
No. 40	.42						
No. 50	.297	84.60	17.73	8.44	8		
No. 60	.250						
No. 80	.177						
No. 100	.149	27.70	5.81	2.63	3		
No. 200	.074	4.40	0.92	1.71	2		
PAN		8.20					
WASH							
TOTAL		477.10					

FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: MC MIRASOL DATE: 04-21-94
GL ZERVOULAKOS DATE: 05-20-94

DRY LOOSE 786.14
 DRY RODDED 928.31



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 2km south of Concepcion town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-018-94
 DATE: 4-22-94
 SOURCE: BAMBAN-7, Sample # 3

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6) - (3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.3		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1398.4		
4.	WT. OF WATER GR. (3-2)	168.10		
5.	WT. OF OVEN-DRY SAMPLE GR.	439.70		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.32		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.51		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500-4 - (1-5)}$	1.62		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	13.71		

TESTED BY:

M.C. Mirabol

DATE REPORTED

6-01-94

CHECKED AND NOTED BY:

G.L. ZUPYDIAKOS

SUMMARY SHEET FOR LAHAR MATERIAL SURVEY

PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAH-8
LOCATION : 5Km east of Concepcion Town	DATE : 4-22-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : Bamban River

	TEST PIECE NO.		
	NO. 1	NO. 2	NO. 3
SIEVE ANALYSIS			
Cumulative % Passing			
Sieve Size 37.5 mm	100	100	100
25.0 mm	100	100	100
19.0 mm	98.74	100	100
12.5 mm	97.38	99.79	99.60
9.5 mm	95.51	98.92	96.13
4.75 mm	82.79	85.81	82.38
2.36 mm	63.87	66.43	60.91
1.18 mm	46.80	46.80	41.18
0.60 mm	35.32	32.09	25.89
0.30 mm	12.80	17.65	9.58
0.150 mm	1.49	1.73	0.72
0.075 mm	0.88	1.61	0.49
SPECIFIC GRAVITY	1.88	1.83	1.92
ABSORPTION (%)	10.99	9.10	11.11
UNIT WEIGHT (kg/m3)			
Rodded	1054.47	1063.41	1133.08
Loose	912.77	890.65	978.68

WORKSHEET FOR SPECIFIC GRAVITY TEST

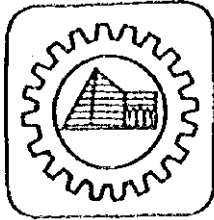
PROJECT : LAHAR MATERIAL SURVEY	TEST SAMPLE NO. BAN-8
LOCATION : 5km east of Concepcion town	DATE : 4-23-94
TYPE OF MATERIALS : Lahar Material (FA)	SOURCE : BAMBAN RIVER

I. COURSE AGGREGATE (WIRE BASKET METHOD)

ITEM	TEST PIECE NO.		
	NO.	NO.	NO.
1. WT. of SSD + basket in air, gr			
2. WT. of basket in air, gr			
3. WT. of SSD sample in air, gr, (1-2)			
4. WT. of sample + basket in the water, gr			
5. WT. of basket in water, gr			
6. WT. of sample in water, gr, (4-5)			
7. WT. of oven-dry sample, gr			
8. Bulk specific gravity (dry), $7/(3-6)$			
9. Bulk specific gravity (SSD), $3/(3-6)$			
10. Apparent specific gravity, $7/[(3-6)-(3-7)]$			
11. Absorption, %, $(3-7)/7 \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

	NO. 1	NO. 2	NO. 3
1. WT. of SSD sample, gr	500	500	500
2. WT. of pycnometer + water, gr	1230.10	1230.10	1230.20
3. WT. of pycnometer + sample + water, gr	1441.40	1438.30	1446.10
4. WT. of water, gr, (3-2)	211.30	208.20	215.90
5. WT. of oven-dry sample, gr	450.50	458.30	450.0
6. Bulk specific gravity (dry), $5/(500-4)$	1.56	1.57	1.58
7. Bulk specific gravity (SSD), $1/(500-4)$	1.73	1.71	1.76
8. Apparent specific gravity, $5/[(500-4)-(1-5)]$	1.88	1.83	1.92
9. Absorption, %, $(1-5)/5 \times 100$	10.99	9.10	11.11



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN SA-0019-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 8, SAMPLE # 1 **BAMBAN RIVER**

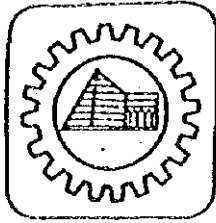
WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original 500	Oven dry 480.10	Washed oven dry			

SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	6.00	1.26	98.74	99		
1/2"	12.7	6.50	1.36	97.38	97		
3/8"	9.5	8.90	1.87	95.51	96		
No. 4	4.75	60.70	12.72	82.79	83		
No. 8	2.38	90.30	18.92	63.87	64		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	81.20	17.01	46.86	47		
No. 20	0.84						
No. 30	.59	55.10	11.54	35.32	35		
No. 40	.42						
No. 50	.297	107.50	22.52	12.80	13		
No. 60	.250						
No. 80	.177						
No. 100	.149	54.00	11.31	1.49	1		
No. 200	.074	2.90	0.61	0.88	1		
PAN		4.20					
WASH							
TOTAL		477.30					

FINENESS MODULUS _____ UNIT WEIGHT PCF. _____

TESTED BY: **MC MIRASOL** DATE: **04-22-94** DRY LOOSE **912.77**

CHECKED BY: **GL ZERVOULAKOS** DATE: **05-20-94** DRY RODDED **1054.47**



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 5km east of Concepcion town
 TYPE OF MATERIALS: Lahar Material (F.A.)

TEST REPORT NO.: SG-019-94
 DATE: 4-23-94
 SOURCE: BAMBAK-B, Sample # 1

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT. OF SSD + BASKET IN AIR GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6)-(3-7)}$			
11. ABSORPTION % $\frac{(3-7)}{7} \times 100$			

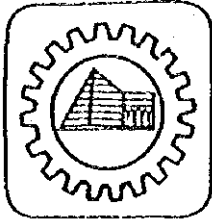
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.1		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1441.4		
4. WT. OF WATER GR. (3-2)	211.3		
5. WT. OF OVEN-DRY SAMPLE GR.	450.5		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500-4}$	1.56		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500-4}$	1.73		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500-4-(1-5)}$	1.88		
9. ABSORPTION % $\frac{(1-5)}{5} \times 100$	10.99		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Gervonplakos



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN SA-0020-94

PROJECT **LAHAR MATERIAL SURVEY** DATE OF REPORT **06-01-94**

SPECIFICATION PURPOSE OF MATERIAL SAMPLED BY AND DATE
RDPCI/04-15-94

SAMPLED AT (stockpile, batch plant, place, etc.) SOURCE: River, quarry, etc.)
BAMBAN # 8, SAMPLE # 2 BAMBAN RIVER

WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	485.50		2.99		

SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	1.00	0.21	99.79	100		
3/8"	9.5	4.20	0.87	98.92	99		
No. 4	4.75	63.10	13.11	85.81	86		
No. 8	2.38	93.30	19.38	66.43	66		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	94.50	19.63	46.80	47		
No. 20	0.84						
No. 30	.59	70.80	14.71	32.09	32		
No. 40	.42						
No. 50	.297	69.50	14.44	17.65	18		
No. 60	.250						
No. 80	.177						
No. 100	.149	76.60	15.92	1.73	2		
No. 200	.074	0.60	0.12	1.61	2		
PAN		7.70					
WASH							
TOTAL		481.30					

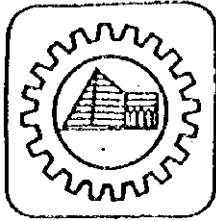
FINENESS MODULUS _____

UNIT WEIGHT PCF. _____

TESTED BY: **MC HIRASOL** *[Signature]* DATE: **04-22-94**
GL ZERVOULAKOS *[Signature]* DATE: **05-20-94**

DRY LOOSE **890.65**
DRY RODDED **1063.41**

CHECKED BY: _____



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 5km east of Concepcion town
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-020-94
 DATE: 4-23-94
 SOURCE: BAMBAN-8, Sample # 2

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1. WT. OF SSD + BASKET IN AIR GR.			
2. WT. OF BASKET IN AIR, GR.			
3. WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4. WT. OF SAMPLE + BASKET IN WATER, GR.			
5. WT. OF BASKET IN WATER, GR.			
6. WT. OF SAMPLE IN WATER, GR. (4-5)			
7. WT. OF OVEN-DRY SAMPLE, GR.			
8. BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3.6}$			
9. BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3.6}$			
10. APPARENT SPECIFIC GRAVITY, $\frac{7}{(3.6) - (3.7)}$			
11. ABSORPTION % $\frac{(3.7) - 7}{7} \times 100$			

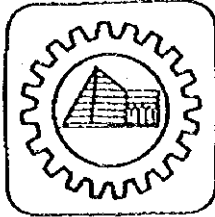
II. FINE AGGREGATES (PYCNOMETER METHOD)

1. WT. OF SSD SAMPLE GR.	500		
2. WT. OF PYCNOMETER + WATER GR.	1230.1		
3. WT. OF PYCNOMETER + SAMPLE + WATER GR.	1438.30		
4. WT. OF WATER GR. (3-2)	208.20		
5. WT. OF OVEN-DRY SAMPLE GR.	458.30		
6. BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.57		
7. BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.71		
8. APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1.5)}$	1.83		
9. ABSORPTION % $\frac{(1.5) - 5}{5} \times 100$	9.10		

TESTED BY: H.C. Mirabol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zepoulakos



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

MECHANICAL ANALYSIS

TRN SA-0021-94

PROJECT LAHAR MATERIAL SURVEY	DATE OF REPORT 06-01-94
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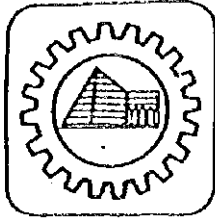
SPECIFICATION	PURPOSE OF MATERIAL	SAMPLED BY AND DATE RDPCI/04-15-94
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SAMPLED AT (stockpile, batch plant, place, etc.) BAMBAN # 8, SAMPLE # 3	SOURCE: River, quarry, etc.) BAMBAN RIVER
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WEIGHT OF SAMPLE			MOISTURE CONTENT (%)	QUANTITY REPRESENTED	MAN. SIZE (INCH)
Original	Oven dry	Washed oven dry			
500	483.40		3.43		

SIEVE SIZE	SIEVE OPENING (M.M)	INDIVIDUAL WEIGHT RETAINED	INDIVIDUAL PERCENT RETAINED	PERCENT PASSING 10TH DC	PERCENT PASSING	SPECS PERCENT PASSING	CUM. PERCENT RETAINED
2-1/2"	60.5						
2"	52.8						
1-1/2"	38.1	0.00	0.00	100.00	100		
1"	25.4	0.00	0.00	100.00	100		
3/4"	19.1	0.00	0.00	100.00	100		
1/2"	12.7	1.90	0.40	99.60	100		
3/8"	9.5	16.70	3.47	96.13	96		
No. 4	4.75	66.10	13.75	82.38	82		
No. 8	2.38	103.20	21.47	80.91	61		
No. 10	2.00						
No. 12	1.65						
No. 16	1.10	94.80	19.73	41.18	41		
No. 20	0.84						
No. 30	.59	73.50	15.29	25.89	26		
No. 40	.42						
No. 50	.297	78.40	16.31	9.58	10		
No. 60	.250						
No. 80	.177						
No. 100	.149	42.60	8.86	0.72	1		
No. 200	.074	1.10	0.23	0.49	0		
PAN		2.30					
WASH							
TOTAL		480.60					

FINENESS MODULUS _____	UNIT WEIGHT PCF. _____
TESTED BY: MC MIRASOL <i>[Signature]</i> DATE: 04-22-94	DRY LOOSE 978.68
CHECKED BY: GL ZERVOULAKOS <i>[Signature]</i> DATE: 05-20-94	DRY RODDED 1133.08



R.D. POLICARPIO & CO., INC.

ENGINEERS * CONTRACTORS * BUILDERS

WORKSHEET FOR SPECIFIC GRAVITY & ABSORPTION

PROJECT: LAHAR MATERIAL SURVEY
 LOCATION: 5km east of Concepcion town
 TYPE OF MATERIALS: Lahar Material (P.A.)

TEST REPORT NO.: SG-021-94
 DATE: 4-23-94
 SOURCE: BAMBAN-8, Sample # 3

I. COURSE AGGREGATE (WIRE BASKET METHOD)

1.	WT. OF SSD + BASKET IN AIR GR.			
2.	WT. OF BASKET IN AIR, GR.			
3.	WT. OF SSD SAMPLE IN AIR, GR. (1-2)			
4.	WT. OF SAMPLE + BASKET IN WATER, GR.			
5.	WT. OF BASKET IN WATER, GR.			
6.	WT. OF SAMPLE IN WATER, GR. (4-5)			
7.	WT. OF OVEN-DRY SAMPLE, GR.			
8.	BULK SPECIFIC GRAVITY (DRY), $\frac{7}{3-6}$			
9.	BULK SPECIFIC GRAVITY (SSD), $\frac{3}{3-6}$			
10.	APPARENT SPECIFIC GRAVITY, $\frac{7}{(3-6) - (3-7)}$			
11.	ABSORPTION % $\frac{(3-7)}{7} \times 100$			

II. FINE AGGREGATES (PYCNOMETER METHOD)

1.	WT. OF SSD SAMPLE GR.	500		
2.	WT. OF PYCNOMETER + WATER GR.	1230.2		
3.	WT. OF PYCNOMETER + SAMPLE + WATER GR.	1446.1		
4.	WT. OF WATER GR. (3-2)	215.90		
5.	WT. OF OVEN-DRY SAMPLE GR.	450.0		
6.	BULK SPECIFIC GRAVITY (DRY) $\frac{5}{500.4}$	1.58		
7.	BULK SPECIFIC GRAVITY (SSD) $\frac{1}{500.4}$	1.76		
8.	APPARENT SPECIFIC GRAVITY $\frac{5}{500.4 - (1-5)}$	1.92		
9.	ABSORPTION % $\frac{(1-5)}{5} \times 100$	11.11		

TESTED BY: M.C. Mirasol

DATE REPORTED 6-01-94

CHECKED AND NOTED BY: G.L. Zepherinos