REPUBLIC OF THE PHILIPPINES

PHILIPPINE PORTS AUTHORITY

THE STUDY ON THE DEVELOPMENT PROJECT

OF

THE PORT OF IRENE

NATURAL CONDITIONS SURVEY REPORT

MARCH, 1982

JAPAN INTERNATIONAL COOPERATION AGENCY

Republic of The Philippines

Philippine Ports Authority

The Study on the Development Project of The Port of Irene

Natural Conditions Survey Report

1982

Japan International Cooperation Agency

Scope of Work

The contents of the investigation are given below.

1) Test boring and laboratory tests : 5 points
2) Bottom sampling : 5 spots
3) Wave observation
4) Tide observation
5) Tidal current observation
6) Weather

The periods of each investigation items were as follows;

1) Test boring

BH-1 : May 25 - 27, '81

BH-2 : June 2 - 5, '81

BH-3 : June 7 - 12, '81

BH-4 : June 14 - 17, '81

BH-5 : June 18 - 20, '81

2) Bottom sampling

5 spots : June 2, '81

3) Wave observation

May 24 - June 22, '81

4) Tide observation

May 18 - June 17, '81

5) Tidal Current observation

5-1 Float method : May 18 - June 16, '81

5-2 Current meter : May 18 - June 16, '81

6) Weather

May 18 - June 17, '81

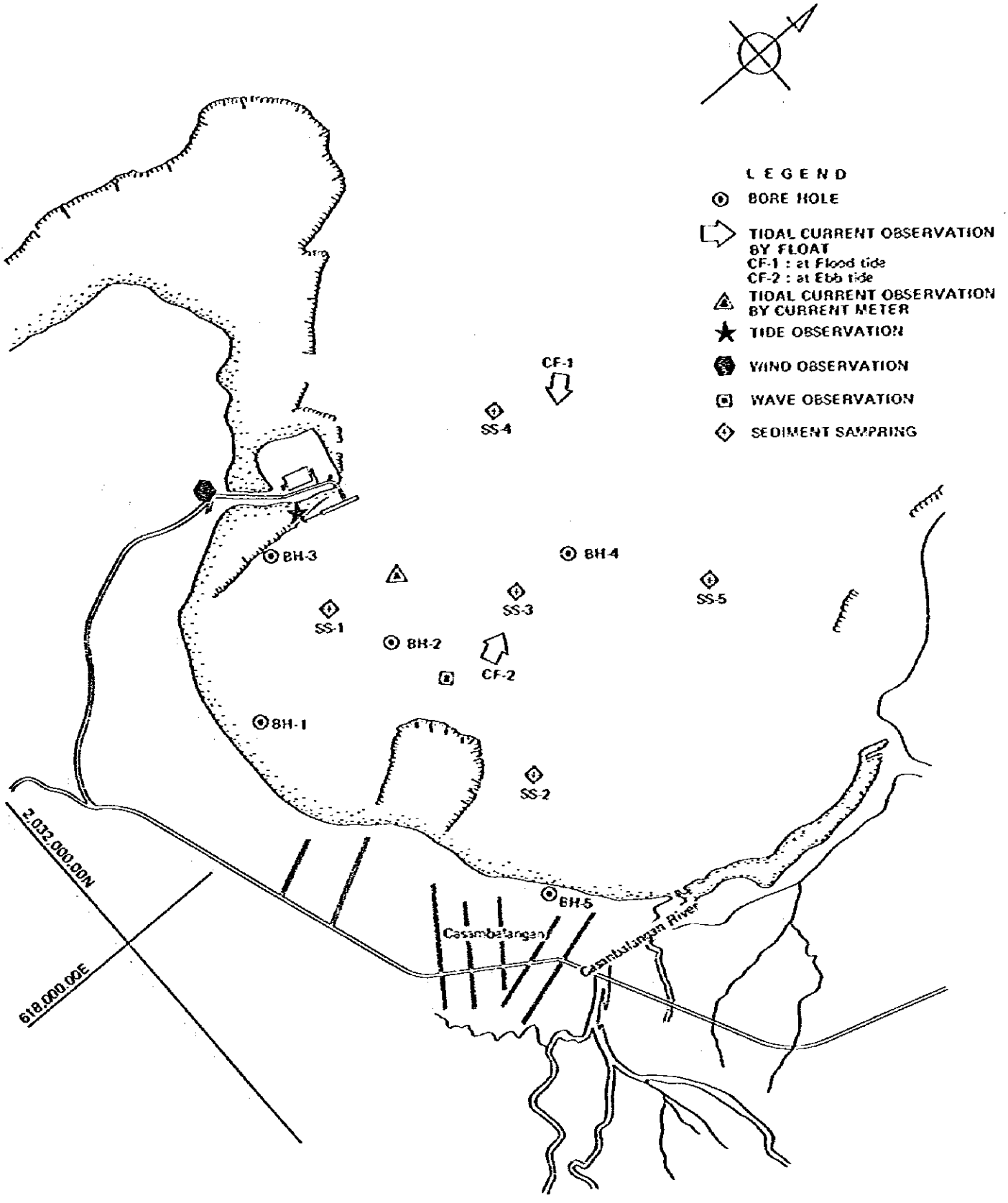


Fig. 2 Location Map of Site for Investigation

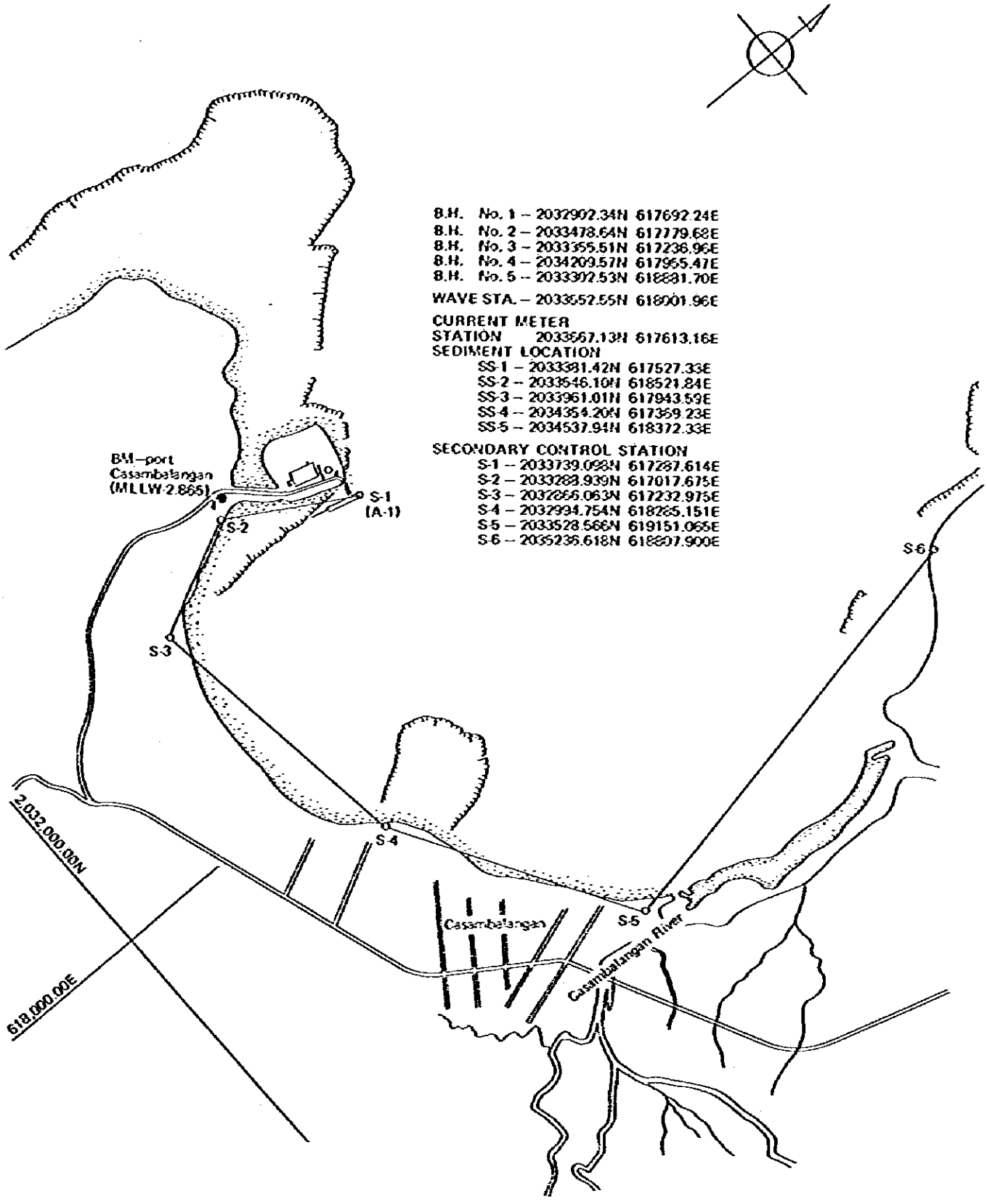


Fig. 3 Coordination of Secondary control points and Investigation sites

1. TEST BORING

1-1 SOIL PROFILE

1-2 RESULTS OF SOIL TEST

1-1 SOIL PROFILE

SOIL PROFILE

PROJECT: PORT IRENE — ELEVATION: MLLW-333m. — DATE: MAY 25 TO 27, 1981

BORING NO: BH-1 — WATER LEVEL — DRILLER: R. MAYLAS

SCALE m	ELEVATION m	DEPTH m	THICKNESS m	SOIL SYMBOL	SOIL CLASSIFICATION	COLOR	IN-PLACE OBSERVATION	DENSITY & CONSISTENCY
1–2					FINE SAND	DARK GRAY AND WHITE	ALTERNATION OF STRATA OF DARK GRAY SAND AND WHITE SHELLEN SAND	MEDIUM
	-6.08	2.75	2.75					
3–11					VERY FINE SAND	DARK GRAY	AS THE WHILE 3.00 TO 4.00 WITH TRACES OF FINE SHELL AND CORAL FRAGMENTS AND ORGANIC MATERIALS POORLY GRADED TEXTURE 4.00m TO 9.00m - DO - 9.00 TO 11.50 WITH SOME SILT FRACTION	LOOSE
	-14.65	11.50	8.75					
12–19					SILTY VERY FINE SAND	DARK GRAY	11.50 TO 13.50, WITH TRACES OF SHELL FRAGMENT AND ORGANIC MATERIALS AS THE WHILE HIGH WATER CONTEN AND PLENTY OF SILT FRAGTION 6.00 TO 17.00 COLLAPSE IN THE BORE	MEDIUM
	-23.13	12.80	8.34					
20					VERY FINE SANDY SILT	DARK GRAY	WITH TRACES OF SHELL FRAGMENT AND HIGH WATER CONTENTS	MEDIUM
21	-24.43	21.10	1.30		SILTY FINE SAND	DARK GRAY	WITH PLENTY OF SHELL FRAGMENTS	MEDIUM
	-25.08	21.75	2.65					
22–25					BASALTY TUFFBRECCIA	DARK GRAY WITH WHITE & BLACK	AS THE WHILE WITH BASALT AND TUFFBRECCIA AND of METAMORPHOSED SUBMARINE FLOWS AND of CONSOLIDATED TO STRUCTUAL HIGHS BALSALTY TUFFBRECCIA 25.05 TO 25.15 m CORE	VERY HARD
	-28.48	25.15	3.40					
26–33					END OF BORING AT 25.15 m. (ELEVATION = -28.48 m.)			

STANDARD PENETRATION TEST (BLOW TEST) — NUMBER OF BLOWS PER 30 CM.

NO.	DEPTH MTS	N VALUE	CM CM CM	NUMBER OF BLOWS PER 30 CM.
	0.45	20	3 7 10	
S-1	1.50 – 1.95	28	5 10 13	
2	2.00 – 2.45	27	7 10 10	
3	3.45 – 3.45	11	4 3 4	
4	4.00 – 4.45	10	3 3 4	
5	5.00 – 5.45	12	3 4 5	
6	6.00 – 6.45	7	2 2 3	
7	7.00 – 7.45	13	4 4 5	
8	8.00 – 8.45	10	3 3 4	
9	9.00 – 9.45	8	3 3 4	
10	10.00 – 10.45	8	3 2 3	
11	11.00 – 11.45	6	2 2 2	
12	12.00 – 12.45	10	3 3 4	
13	13.00 – 13.45	8	2 3 3	
14	14.00 – 14.45	9	3 3 3	
15	15.00 – 15.45	9	3 3 3	
16	16.00 – 16.45	10	3 3 4	
17	17.00 – 17.45	13	4 4 5	
18	18.00 – 18.45	23	6 7 10	
19	19.00 – 19.45	14	4 5 5	
20	20.00 – 20.45	13	4 4 5	
21	21.00 – 21.45	18	5 6 7	
22	22.00 – 22.45	13	7 6	
23	23.00 – 23.20	5/5	5	
24	24.00 – 24.32	5/3	3 2	
25	25.00 – 25.15	5/5	5	

SAMPLES

NO	DEPTH MTS.
DS-1	3.00 – 3.45
DS-2	5.00 – 5.45
DS-3	8.00 – 8.45
DS-4	12.00 – 12.45
DS-5	15.00 – 15.45
DS-6	20.00 – 20.45

SOIL PROFILE

PROJECT: PORT IRENE — ELEVATION MLW-8.27m. — DATE: JUNE 2 TO 5, 1981

BORING NO. BH-2 — WATER LEVEL: — DRILLER: R. MAYLAS

SCALE m	ELEVATION m	DEPTH m	THICKNESS m	SOIL SYMBOL	SOIL CLASSIFICATION	COLOR	IN-PLACE OBSERVATION	DENSITY & CONSISTENCY	NO	DEPTH MTS	N VALUE	STANDARD PENETRATION TEST (BLOW TEST) cm cm cm	NUMBER OF BLOWS PER 30 CM	NO	SAMPLING DEPTH MTS
1	-9.02	0.75	0.75		SILTY FINE SAND		SILTY FINE SAND	MEDIUM DENSE	S-1	0.0 0.45	13	4 4 5			
2								VERY LOOSE	2	1.00 1.45	3	1 1 1			
3					FINE SAND	GRAY	SILTY FINE SAND WITH DISINTEGRATED MARINE SHELLS AND CORALS	LOOSE	3	2.00 2.45	8	2 3 3		DS 1	2.00 2.45
4	-12.27	4.10	3.75					VERY LOOSE	4	3.00 3.45	2	1/6 1/6			
5	-13.27	5.00	0.90		FINE SAND	OLIVE GRAY	FINE SAND W/ TRACES OF SHELLS & CLAY		5	4.00 4.45	7	1 1 5			
6					CLAYEY FINE SAND	GRAY	CLAYEY FINE SAND WITH LITTLE AMOUNT OF SILT		6	5.00 5.45	4	1 1 2		DS 2	5.00 5.45
7									7	6.00 6.45	9	3 3 3			
8	-18.32	8.05	3.55						8	7.00 7.45	9	4 3 2			
9					FINE SANDY CLAY	DARK GRAY	FINE SANDY CLAY W/ LITTLE AMOUNT OF SILT		9	8.00 8.45	3	1 1 1			
10	-19.17	9.92	1.85					VERY SOFT	10	9.00 9.45	3	1 1 1		DS 3	9.00 9.45
11					SILTY CLAY	GRAY	SILTY CLAY WITH TRACES OF FINE SAND		WL	10.00 10.60					
12									WL	11.00 11.70					
13								SOFT	11	12.00 12.45	5	1 2 2		UDS 1	12.00 12.80
14								VERY SOFT	12	13.00 13.45	2	1/6 1/6			
15									13	14.00 14.45	3	1 1 1			
16									14	15.00 15.45	3	1 1 1		UDS 2	15.00 15.75
17	-25.27	13.00	1.10							16.00 16.45	2	1/6 1/6			
18	-26.27	18.00	1.00		CORALS	GRAYISH WHITE	CORAL W/ LITTLE CLAY and SHELL	VERY DENSE	15	17.00 17.30	58	17 53 28			
19					SAND STONE	DARK BLUISH GRAY	TUFFACEOUS, FINE GRAINED SAND STONE	ROCK STRATA	%	18.00 18.01	50/1	50/1 mm			
20	-28.27	20.00	2.00							19.00 19.00	CORING				
21							END OF BORING AT 20.00 m SOLID ROCK FORMATION (ELEVATION=-28.27m.)			20.00	CORING				
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															
32															
33															

NOTE: 100% CORE RECOVERY

SOIL PROFILE

PROJECT: PORT IRENE — ELEVATION: MLLW-5.11m. — DATE: JUNE 7 TO 12, 1981

BORING NO: BH-3 — WATER LEVEL: — DRILLER: R. MAYLAS

SCALE m.	ELEVATION m.	DEPTH m.	THICKNESS m.	SOIL SYMBOL	SOIL CLASSIFICATION	COLOR	IN-PLACE OBSERVATION	DENSITY & CONSISTENCY
1							FROM SEABED TO 0.05m MUD ZONE	
2					MEDIUM TO VERY FINE SAND	DARK BLUE GRAY	AS THE WHOLE WITH SOME SHELL AND CORAL FRAGMENT AND SILTY PARTICLE	
3							2.00 TO 3.80 WITH PLENTY OF SILT	
4	-8.51	3.80	3.80					
5					SILTY VERY FINE SAND	DARK BLUE GRAY	WITH HIGH WATER CONTENT AND SOME STICKY CLAY AS THE WHOLE WITH TRACES OF SHELL ORGANIC MATERIALS	VERY LOOSE
6	-11.61	6.90	2.10					
7					CLAYEY VERY FINE SAND	DARK BLUE GRAY	WITH HIGH WATER CONTENTS AND SILT	
8	-13.12	8.42	1.60					
9					SILTY CLAY	DARK BLUE GRAY	8.10 TO 10.00 m. WITH FINE SAND SEAM AND TRACES OF SHELL ORGANIC MATERIALS	
10							9.00 m. TO 14.00 m. WITH SOME STICKY CLAY	
11								
12								
13								SOFT
14							14.00 TO 16.20 m. WITH PLENTY OF SILTY PARTICLE AND SOLIDITY SILT	
15								
16	-21.31	16.20	6.40					
17	-22.21	17.10	0.90		SILTY VERY FINE SAND	DARK BLUE GRAY	WITH SHELL AND ORGANIC MATERIALS	
18					VERY FINE SAND	DARK BLUE GRAY	17.10 TO 17.50 m. WITH TRACES OF SILT	
19							AS THE WHOLE WITH SHELL FRAGMENTS AND ORGANIC MATERIALS	
20							20.00 WITH FINE SAND	
21								
22	-27.91	22.80	5.70				22.00 m TO 22.80 m WITH SOLIDITY SILT BLOCK	MEDIUM
23	-29.76	23.65	0.85		FINE SAND	DARK GRAY	WITH SHELL FRAGMENT AND ORGANIC MATERIALS	
24					VERY FINE SAND	DARK GRAY	AS THE WHOLE WITH TRACES OF SHELL FRAGMENTS AND ORGANIC MATERIALS	
25								
26								
27							27.00 m TO 29.00 m WITH PLENTY OF SILT FRACTION	
28								
29	-34.8	29.00	5.35					
30	-35.8	30.50	1.50		FINE SAND	DARK GRAY	WITH SOFT SAND STONE 29.10 30.50 m	DENSE
31					END OF BORING (ELEVATION = -35.61m)		AT 30.50 m.	
32								
33								

STANDARD PENETRATION TEST (BLOW TEST)

NO	DEPTH	% CORE	NUMBER OF BLOWS PER 30 CM
S-1	5.45	0	P, 6, 6
2	1.60 / 5.45	1	— ½
3	2.00 / 2.45	2	1 1
4	3.00 / 3.45	3	1 1 1
5	4.00 / 4.45	2	½ ½
6	5.00 / 5.45	0	P, 5, 5
7	6.00 / 6.45	0	— 0 —
8	7.60 / 7.45	1	1
9	8.00 / 8.45	3	1 1 1
10	10.00 / 10.45	3	1 1 1
11	11.60 / 11.45	2	½ ½
12	12.00 / 12.45	3	½ ½
13	13.60 / 13.45	2	½ ½
14	14.00 / 14.45	3	1 1 1
15	15.60 / 15.45	4	1 1 2
16	16.00 / 16.45	7	2 2 3
17	17.60 / 17.45	8	2 3 3
18	18.60 / 18.45	8	2 3 3
19	19.60 / 19.45	13	3 3 4
20	20.00 / 22.45	15	4 5 6
21	21.60 / 21.45	19	6 7 6
22	22.60 / 22.45	15	4 5 6
23	23.60 / 23.45	20	9 9 10
24	24.60 / 24.45	15	4 5 6
25	25.60 / 25.45	16	4 4 8
26	26.00 / 25.45	17	5 6 6
27	27.60 / 27.45		
28	29.00 / 29.45	22	7 8 7
29	30.00 / 30.45	32	7 10 15

SAMPLING

NO	DEPTH
DS	5.00 5.45
UDS-1	8.00 8.45
DS-2	9.00 9.60
DS-3	12.00 12.45
DS-4	16.00 16.45
DS-5	20.00 20.45
DS-6	25.00 25.45

SOIL PROFILE

PROJECT: PORT IRENE — ELEVATION: MLLW - 11.44m. — DATE: JUNE 14 TO 17, 1981

BORING NO: BH-4 — WATER LEVEL: — DRILLER: R. MAYLAS & R. GONZALES

SCALE m	ELEVATION m	DEPTH m	THICKNESS m	SOIL SYMBOL	SOIL CLASSIFICATION	COLOR	IN-PLACE OBSERVATION	DENSITY & CONSISTENCY	STANDARD PENETRATION TEST (BLOW TEST) NO.	DEPTH MTS	N VALUE	BLOWS PER 15 CM 1st	2nd	3rd	NUMBER OF BLOWS PER 30 CM	SAMPLING NO.	DEPTH MTS
1					FINE SAND	GRAY	FINE SAND WITH TRACES OF SILT AND DISINTEGRATED MARINE SHELLS	VERY LOOSE / MED. DENSE	1	0.45-0.45	3	1	1	1			
2									2	1.45	14	3	3	8			
3								LOOSE	3	2.45	10	2	3	5			
4	-15.54	4.10	4.10					VERY LOOSE	4	3.45	10	3	3	4			
5					VERY FINE SAND	DARK GRAY	FINE SAND WITH SOME SILT AND TRACES OF CLAY	LOOSE	5	4.45	3	1/6	1/6	1/6		DS 1	5.00
6	-17.38	5.94	1.84						6	5.45	6	2	2	2			5.45
7					SAND CLAY	GRAY	FINE SANDY CLAY WITH TRACES OF BROKEN SHELL 4mm	VERY SOFT	7	6.45	4	1	1	2			
8	-19.54	8.10	2.16						8	7.45	2	1/6	1/6	1/6		DS 2	8.00
9									9	8.45	2	1/6	1/6	1/6			8.45
10					SILTY CLAY	OLIVE GRAY	SILTY CLAY WITH TRACES OF FINE SAND									UDS 1	9.00
									10	10.45	3	1	1	1			9.80
11	-22.77	11.33	3.23					LOOSE	11	11.45	9	4	3	2			
12	-23.54	12.10	0.77		FINE SAND	DARK GRAY	FINE SAND WITH TRACES OF CLAY	SOFT	12	12.45	3	1	1	1		DS 3	12.00
13	-24.41	12.97	0.87		SILTY CLAY	GRAY	SILTY CLAY WITH SOME FINE SAND	VERY SOFT	13	13.45	2	1/6	1/6	1/6			12.45
14	-25.52	14.08	1.11		ORGANIC CLAY	OLIVE GRAY	CLAY W/ DECAYED WOOD & SHELL		14	-						UDS 2	14.00
15									15	15.45	4	1	1	2			14.60
16					SILTY CLAY	OLIVE GRAY	SILTY CLAY WITH TRACES OF FINE SAND	SOFT	16	16.45	4	1	1	2		DS 4	16.00
17									17	17.45	4	1	2	2			16.45
18									18	18.45	4	1	2	1			
19									19	19.45	3	1	1	1			
20								MEDIUM STIFF	20	20.45	5	1	2	2		DS 5	20.00
21									21	21.45	5	1	2	2			20.45
22									22	22.45	5	2	1	2			
23									23	23.45	5	1	2	2			
24									24	24.45	7	2	2	3			
25									25	25.45	7	2	3	2			
26	-32.89	28.45	12.32					STIFF	26	26.45	9	4	3	2			
27					CLAY	DARK GRAY	CLAY W/ SOME SILT AND TRACES OF FINE SAND	MED. STIFF	27	27.45	7	2	3	2			
28	-33.83	28.45	2.00						28	28.45	8	3	2	3		DS 6	
29							END BORING AT 28.45 m (ELEVATION = 39.89 MSL)										
30																	
31																	
32																	
33																	

SOIL PROFILE

PROJECT PORT IRENE — ELEVATION MLLW + 2.04m — DATE JUNE 18 TO 20, 1981

BORING NO. B.H.-5 — WATER LEVEL 2.40 mts — DRILLER R. MAYLAS & R. GONZALES

SCALE m.	ELEVATION m.	DEPTH m.	THICKNESS m.	SOIL SAMPLES	SOIL CLASSIFICATION	COLOR	IN-PLACE DESCRIPTION	DENSITY & CONSISTENCY
1					GRAVELLY SAND	BRITISH BROWN	GRAVELLY FINE TO COARSE SAND GRAVEL 1mm TO 4mm SIZES	MEDIUM DENSE
2	-0.09	2.13	2.13					
3					SANDY GRAVEL	BRONISH GRAY	MEDIUM TO COARSE SANDY GRAVEL 1mm TO 8mm GRAVEL SIZE SUB-ROUNDED AND SUB-ANGULAR 1mm TO 8mm. SIZE	VERY DENSE
4								
5								
6	-3.76	5.80	3.67		CLAYEY GRAVEL	BROWN	CLAYEY GRAVEL WITH SOME COARSE AND MED. SAND GRAVEL, 1cm TO 5cm SIZE	
7	-5.36	7.40	1.60		CLAY W/ GRAVEL		CLAY W/ GRAVEL, 2mm MAX SIZE	VERY STIFF
8	-6.01	8.05	0.65		FINE SAND	BROWNISH GRAY	FINE SAND WITH TRACES OF 2.54cm GRAVEL AND POWDERED SHELL	LOOSE TO VERY DENSE
9	-7.07	9.11	1.06					
10					FINE SAND	BLUISH GRAY	FINE SAND WITH TRACES OF POWDERED SHELLS	MEDIUM DENSE
11								
12	-9.83	11.87	2.76					
13					SILTY SAND	DARK GRAY	SLT SAND WITH TRACES OF SHELLS	
14								
15	-13.56	15.60	3.73					
16					SILTY SAND		SILTY FINE SAND	
17	-15.61	17.65	2.05					
18					SILTY SAND		SILTY FINE SAND WITH TRACES OF SHELL	
19	-16.86	18.90	1.25					
20					CLAYEY SAND		CLAYEY FINE SAND	LOOSE TO MEDIUM DENSE
21	-18.71	20.75	1.85					
22					SANDY CLAY	OLIVE GRAY	SANDY CLAY WITH TRACES OF ORGANIC DECAYED WOOD	STIFF
23	-20.68	22.72	1.97			DARK GRAY		
24					SILTY CLAY		SILTY CLAY WITH TRACES OF FINE SAND ORGANIC WOOD AND SHELLS	
25	-23.41	25.45	2.73					
26							BORING END AT 23.41 ELEVATION = 25.45m.	
27								
28								
29								
30								

STANDARD PENETRATION TEST (BLOW TEST)

NO.	DEPTH MTS	N VALUE	NUMBER OF BLOWS PER 30 CM.
1	0.45	44	13 15 29
2	1.00 1.45	44	4 18 12
3	2.00 2.45	34	7 9 18
4	3.00 3.45	50/13	21 29/30
5	4.00 4.45	50/12	21 29
6	5.00 5.45	50/12	27 23
7	6.00 6.45		50/05 50
8	7.50 7.95	20	8 6 6
9	8.00 8.45	34	8 12 14
10	9.60 9.45	50/10	22 28
11	10.00 10.45	11	3 4 4
12	11.00 11.45	22	6 7 9
13	12.00 12.45	13	4 4 5
14	13.00 13.45	25	5 9 8
15	14.00 14.45	25	8 8 9
16	15.00 15.45	19	6 6 7
17	16.00 16.45	14	4 4 6
18	17.00 17.45	25	9 7 9
19	18.00 18.45	14	5 4 5
20	19.00 19.45	9	3 2 4
21	20.00 20.45	11	4 2 5
22	21.00 21.45	11	3 4 4
23	22.00 22.45	11	4 3 4
24	23.00 23.45	6	2 2 2
25	24.00 24.45	10	3 3 4
26	25.00 25.45	8	3 3 2

SAMPLING

NO.	DEPTH MTS
DS1	0.45
DS2	3.00 3.45
DS3	6.00 6.45
DS4	8.00 8.45
DS5	12.00 12.45
DS6	16.00 16.45
DS7	20.00 20.45
DS8	25.00 25.45

1-2 RESULTS OF SOIL TEST

Results of Soil Test

Site of investigate PORT IRENE BH-1 Recorder N.PRADO

				DS 1	DS 2	DS 3	DS 4	DS 5	DS 6
Sample		No. BH-1							
	Depth	METER	m	3.00 3.45	5.00 5.45	8.00 8.45	12.00 12.45	16.00 16.45	20.00 20.45
Grain size analysis	Gravel	(>2000μ)	%	6.5	7.6	1.9	0.7	15.8	11.6
	Sand	(74~2000μ)	%	75.6	82.5	58.6	32.4	15.3	21.0
	Silt	(5 ~ 74μ)	%	17.9	9.9	39.5	64.9	63.9	67.4
	Clay	(< 5μ)	%	0	0	0	2.0	5.0	0
	Max. diameter		mm	19.1	9.52	19.1	9.52	25.4	9.52
	Coefficient of uniformity		Uc		1.6		2.5	4.7	
	Coefficient of curvature		Uc'		0.841		1.27	1.12	
Consistency	Liquid limit		WL %				40.9	53.6	
	Plastic limit		Wp %				33.0	37.9	
	Plasticity index		Ip				7.9	15.7	
Classification	Triangular classification chart			Very fine Sand	Very fine Sand	Very fine Sand	Silty very fine Sand	Silty very fine Sand	Very fine Sandy SIH
	Plasticity chart			SM	SP	SP	ML	MH	SM
Specific gravity of soil particles Gs				2.63	2.56	2.57	2.45	2.45	2.56
Natural state	Water content		W %	28.5	27.4	36.2	45.5	40.4	41.0
	Wet unit weight		γt g/cm³		1.91	1.97	1.71	1.75	1.75
	Void ratio		e		0.66	0.85	0.98	0.92	1.03
	Degree of saturation		Sr %						
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength	qu kg/cm²						
		Secant modulus	E50 kg/cm²						
		Sensitivity ratio	St						
	Single shear test	Testing condition							
		Cohesion	C kg/cm²						
		Angle of shearing resistance	φ °						
	Triaxial compression test	Testing condition							
		Cohesion	C kg/cm²						
		Angle of shearing resistance	φ °						
	Consolidation test	Consolidation yielding pressure	Py kg/cm²						
		Compression index	Cc						

Remarks :

JIS A 1204	Method of Grain – Size Analysis of Soils	Report Form

Job Site PORT OF IRENE Date 6-4-81

Sample No, Depth: No. BH-1 (3.0 ~ 3.45m) Technician N. Prado

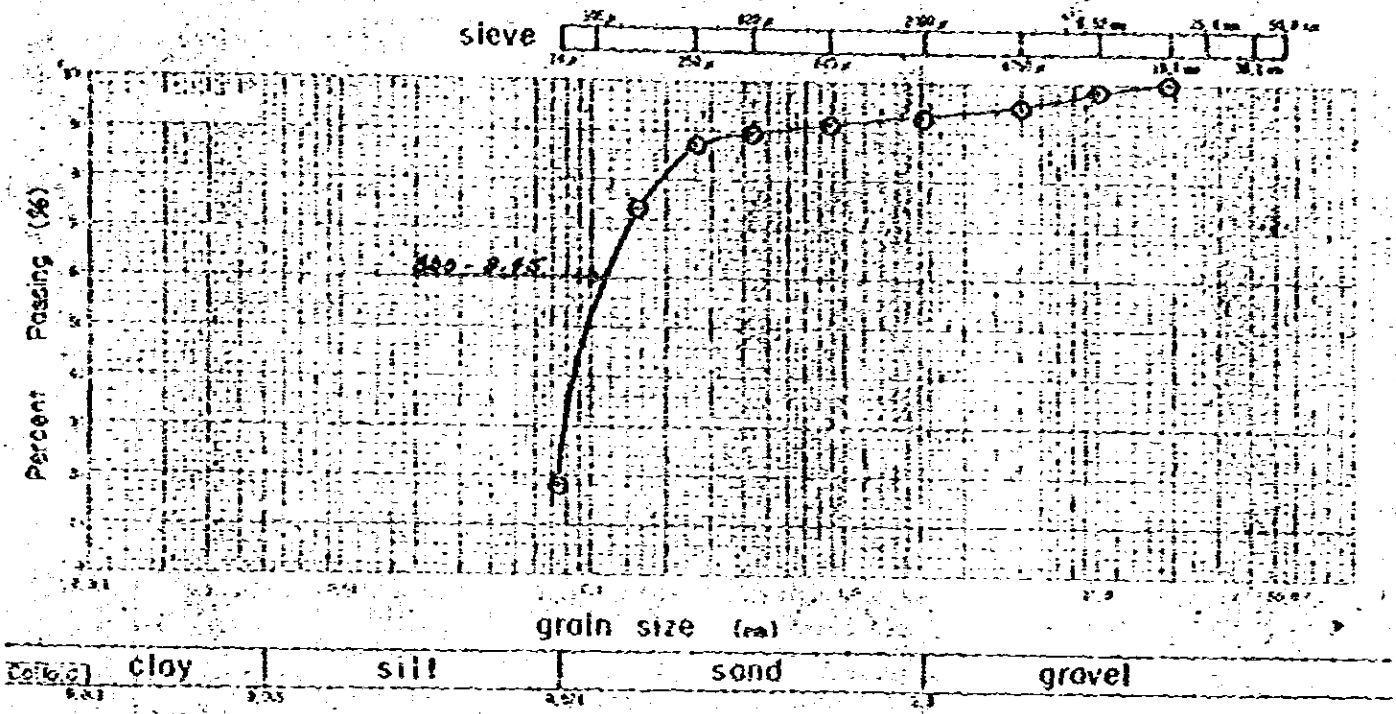
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing.

Sample No., Depth BH-1 (3.0 m ~ 3.45 m) Gs

sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %				100	98.2	95.4	93.5	91.8	89.7	87.4	74.2	17.9
hydrometer	Grain size mm												
	Weight percent %												

Sample No., Depth (m ~ m) Gs

sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %											
hydrometer	Grain size mm											
	Weight percent %											



Sample No, Depth	No. BH-1 3.0 m ~ 3.45		No. m ~ m		Sample No, Depth	No. BH-1 3.0 m ~ 3.45		No. m ~ m	
Grains in 4.76mm and larger	4.6	%		%	Max. grain size	19.1	mm		mm
Grains in 4.76 ~ 2mm	1.9	%		%	60 % (grain size)	.12	mm		mm
Grains in 2 ~ 0.42mm	3.8	%		%	30 % (grain size)	.075	mm		mm
Grains in 0.42 ~ 0.074mm	71.8	%		%	10 % (grain size)	–	mm		mm
Silt in 0.074 ~ 0.005mm	17.9	%		%	Coefficient of uniformity	–			
Clay less than 0.005mm	0	%		%	Coefficient of curvature	–			
Colloid less than 0.001mm	0	%		%					
Percent by weight passing through 2000μ sieve	93.5	%		%					
Percent by weight passing through 420μ sieve	89.7	%		%					
Percent by weight passing through 74μ sieve	17.9	%		%					

Results of Soil Test

Site of investigate PORT IRENE BH-2 Recorder N. PRATO

			DS 1	DS 2	DS 3	UDS 1	UDS 2
Sample No.							
Depth		m	2.00 – 2.45	5.00 – 5.45	9.00 – 9.45	12.00 – 12.45	15.00 – 15.45
Grain size analysis	Gravel	(>2000μ) %	2.1	0.7	0	0	0
	Sand	(74~2000μ) %	52.9	34.7	10.8	16.8	3.2
	Silt	(5 ~ 74μ) %	45.0	58.6	82.2	71.2	80.8
	Clay	(< 5μ) %		6.0	7.0	12.0	16.0
	Max. diameter	mm	9.52	4.76	2.00	2.00	2.00
	Coefficient of uniformity	Uc		7.7	4.0	9.5	11.9
	Coefficient of curvature	Uc'		2.1	1.3	1.9	2.8
Consistency	Liquid limit	WL %			45.6	51.6	54.0
	Plastic limit	Wp %			24.0	23.5	24.5
	Plasticity index	Ip			21.6	28.1	29.5
Classification	Triangular classification chart		Fine sand	Clayey fine sand	Silty clay	Silty clay	Silty clay
	Plasticity chart		SM	SP	CL	CH	CH
Specific gravity of soil particles		Gs		2.50	2.50	2.49	2.50
Natural state	Water content	W %	37.0	43.8	55.5	57.8	55.6
	Wet unit weight	γt g/cm³		1.73	1.64	1.62	1.64
	Void ratio	e		0.99	1.27	1.43	1.39
	Degree of saturation	Sr %					
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength qu kg/cm²				0.672	1.108
		Secant modulus Eso kg/cm²				17.3	48.4
		Sensitivity ratio St					
	Single shear test	Testing condition					
		Cohesion C kg/cm²					
		Angle of shearing resistance φ °					
	Triaxial compression test	Testing condition					
		Cohesion C kg/cm²					
		Angle of shearing resistance φ °					
	Consolidation test	Consolidation yield pressure Py kg/cm²					
		Compression index Cc					

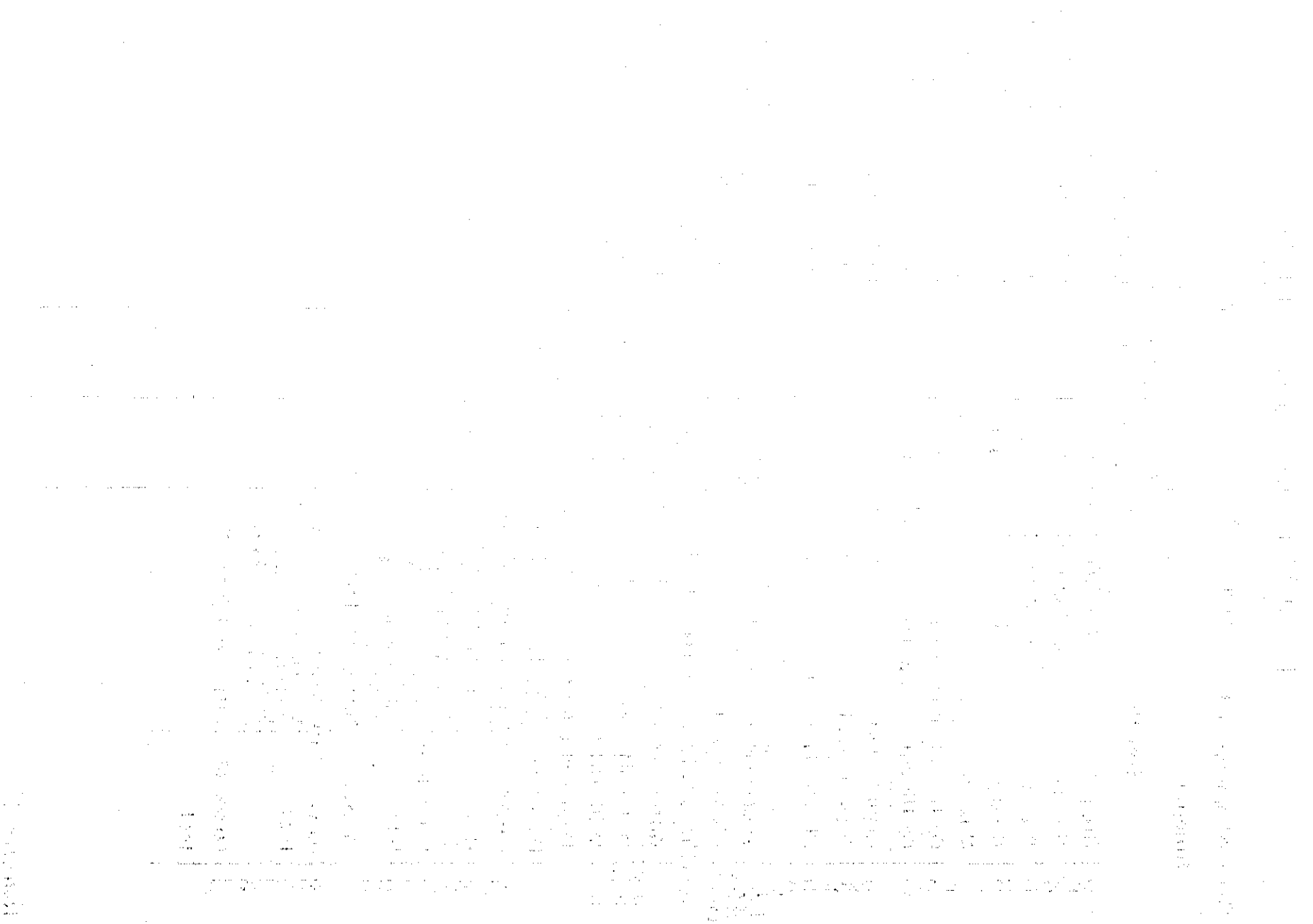
Remarks :

Results of Soil Test

Site of investigate PORT IRENE BH - 3 Recorder N.PRADO

Sample No.			DS 1	DS 2	UDS 1	DS 3	DS 4	DS 5
Depth m			5.00 5,45	8.00 8,45	9.00 9,60	12.00 12.45	16.00 16.45	20.00 20.45
Grain size analysis	Gravel	(>2000μ) %	0.9		0.3	0.3	0.1	0
	Sand	(74~2000μ) %	45.3		21.6	12.6	23.2	22.8
	Silt	(5 ~ 74μ) %	48.8		73.1	78.1	66.7	77.2
	Clay	(< 5μ) %	5.0		5.0	8.0	10.0	
	Max. diameter	mm	4.76		4.76	4.76	4.76	0.84
	Coefficient of uniformity	Uc	10.0		4.3	6.5	10.0	
	Coefficient of curvature	Uc	1.2		1.5	1.12	1.3	
Consistency	Liquid limit	WL %			40.6	51.5		
	Plastic limit	Wp %			19.6	22.8		
	Plasticity index	Ip			21.0	28.7		
Classification	Triangular classification chart		Silty very fine sand		Silty clay	Silty clay	Silty very fine sand	Very fine Sand
	Plasticity chart		SW		CL	CH	SW	ML
Specific gravity of soil particles Gs			2.61		2.49	2.55	2.54	2.52
Natural state	Water content	W %	44.4		50.9	62.0	47.4	42.9
	Wet unit weight	γt g/cm³	1.72	1.67	1.67	1.67	1.78	1.80
	Void ratio	e	1.09		1.26	1.47	0.99	
	Degree of saturation	Sr %		0.203				
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength Qu kg/cm²		5.7				
		Secant modulus Eso kg/cm²						
		Sensitivity ratio St						
	Single shear test	Testing condition						
		Cohesion C kg/cm²						
		Angle of shearing resistance φ °						
	Trioxial compression test	Testing condition						
		Cohesion C kg/cm²						
		Angle of shearing resistance φ °						
	Consolidation test	Consolidation yielding pressure Py kg/cm²						
		Compression index Cc						

Remarks :



Results of Soil Test

Site of investigate PORT IRENE BH - 3 Recorder N.PRADO

Sample No.			DS 6							
Depth m			25.00 25.45							
Grain size analysis	Gravel	(>2000μ) %	0							
	Sand	(74~2000μ) %	23.4							
	Silt	(5 ~ 74μ) %	76.6							
	Clay	(< 5μ) %								
	Max. diameter	mm	2.00							
	Coefficient of uniformity	Uc								
	Coefficient of curvature	Uc'								
Consistency	Liquid limit	W_L %								
	Plastic limit	Wp %								
	Plasticity index	Ip								
Classification	Triangular classification chart		Very fine sand							
	Plasticity chart		ML							
Specific gravity of soil particles Gs			2.41							
Natural state	Water content	W %	46.8							
	Wet unit weight	γt g/cm³	1.70							
	Void ratio	e								
	Degree of saturation	Sr %								
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength qu kg/cm²								
		Secant modulus Eso kg/cm²								
		Sensitivity ratio St								
	Single shear test	Testing condition								
		Cohesion C kg/cm²								
		Angle of shearing resistance φ °								
	Trioxial compression test	Testing condition								
		Cohesion C kg/cm²								
		Angle of shearing resistance φ °								
	Consolidation test	Consolidation yielding pressure Py kg/cm²								
		Compression index Cc								

Remarks :

Results of Soil Test

Site of investigate PORT IRENE BH - 4 Recorder N.PRADO

Sample No.			DS 1	DS 2	UDS 1	DS 3	UDS 2	DS 4
Depth m			5.00 ~ 5.45	8.00 ~ 8.45	9.00 ~ 9.80	12.00 ~ 12.45	14.00 ~ 14.80	16.00 ~ 16.45
Grain size analysis	Gravel	(>2000μ) %	0	0		0		0
	Sand	(74~2000μ) %	46.9	7.9		12.9		11.1
	Silt	(5 ~ 74μ) %	53.1	86.1		77.1		79.1
	Clay	(< 5μ) %		6.0		10.0		15.0
	Max. diameter	mm	2.00	0.84		0.25		0.42
	Coefficient of uniformity	Uc		5.4		8.8		12.3
	Coefficient of curvature	Uc		1.16		1.47		1.8
Consistency	Liquid limit	WL %		46.0				64.0
	Plastic limit	Wp %		23.1				24.7
	Plasticity index	Ip		22.9				39.5
Classification	Triangular classification chart		Very fine Sand	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay
	Plasticity chart		ML	CL		CH		CH
Specific gravity of soil particles Gs			2.56	2.47		2.58		2.59
Natural state	Water content	W %	43.4	60.4	50.9	57.2		66.7
	Wet unit weight	γt g/cm³	1.73	1.63	1.65	1.63	1.70	1.65
	Void ratio	e	1.07	1.34	1.23	1.47	0.64	1.51
	Degree of saturation	Sr %						
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength qu kg/cm²			0.367		0.647	
		Secant modulus Eso kg/cm²			12.1		56.9	
		Sensitivity ratio St						
	Single shear test	Testing condition						
		Cohesion C kg/cm²						
		Angle of shearing resistance φ °						
	Trioxial compression test	Testing condition						
		Cohesion C kg/cm²						
		Angle of shearing resistance φ °						
	Consolidation test	Consolidation yielding pressure Py kg/cm²						
		Compression index Cc						

Remarks :

Results of Soil Test

Site of investigate PORT IRENE BH - 4 Recorder N.PRADO

				DS 5	DS 6
Sample No.					
Depth			m	20.00 20.45	28.00 28.45
Grain size analysis	Gravel	(>2000μ)	%	0	0.1
	Sand	(74~2000μ)	%	3.9	11.1
	Silt	(5 ~ 74μ)	%	88.0	83.1
	Clay	(< 5μ)	%	8.1	5.0
	Max. diameter		mm	0.84	4.76
	Coefficient of uniformity		Uc	6.0	4.3
	Coefficient of curvature		Uc'	2.3	0.2
Consistency	Liquid limit		Wl %	64.6	46.5
	Plastic limit		Wp %	26.3	25.7
	Plasticity index		Ip	38.3	20.8
				Silty clay	clay
Classification	Triangular classification chart				
	Plasticity chart			CH	CL
Specific gravity of soil particles Gs				2.58	2.59
Natural state	Water content		W %	64.4	54.2
	Wet unit weight		γt g/cm³	1.58	1.64
	Void ratio		e	1.56	1.24
	Degree of saturation		Sr %		
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength	qu kg/cm²		
		Secant modulus	Eso kg/cm²		
		Sensitivity ratio	St		
	Single shear test	Testing condition			
		Cohesion	C kg/cm²		
		Angle of shearing resistance	φ °		
	Trioxial compression test	Testing condition			
		Cohesion	C kg/cm²		
		Angle of shearing resistance	φ °		
	Consolidation test	Consolidation yielding pressure	Py kg/cm²		
		Compression index	Cc		

Remarks :

Results of Soil Test

Site of investigate PORT IRENE BH- 5 Recorder N. PRADO

			DS 1	DS 2	DS 3	DS 4	DS 5	DS 6
Sample	No. BH-5							
Depth	METER	m	0.00 0.45	3.00 3.45	6.00 6.45	8.00 8.45	12.00 12.45	16.00 16.45
Grain size analysis	Gravel	(>2000μ) %	88.5	46.5	81.8	1.8	0.7	3.0
	Sand	(74~2000μ) %	9.2	47.1	10.3	60.2	28.5	46.0
	Silt	(5 ~ 74μ) %	2.3	6.4	7.9	29.0	58.8	46.0
	Clay	(< 5μ) %				9.0	12.0	13.0
	Max. diameter	mm	50.8	38.1	50.8	9.52	9.52	9.52
	Coefficient of uniformity	Uc	4.8	33.3	250.0	14.6	13.8	25.0
	Coefficient of curvature	Uc	7.2	0.3	71.1	3.1	1.8	1.6
Consistency	Liquid limit	WL %						
	Plastic limit	Wp %						
	Plasticity index	Ip						
Classification	Triangular classification chart		Gravely Sand	Sandy Gravel	Clayey Gravel	Fine Sand	Silty Sand	Silty Sand
	Plasticity chart		GP	GW	GW	ML	ML	ML
Specific gravity of soil particles		Gs	2.66	2.67	2.64	2.67	2.54	2.56
Natural state	Water content	W %	4.9	12.4	7.1	29.6	49.9	45.4
	Wet unit weight	γt g/cm³				1.87	1.68	1.71
	Void ratio	e				0.99	1.15	1.05
	Degree of saturation	Sr %						
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength Qu kg/cm²						
		Secant modulus E50 kg/cm²						
		Sensitivity ratio St						
	Single shear test	Testing condition						
		Cohesion C kg/cm²						
		Angle of shearing resistance φ °						
	Trioxial compression test	Testing condition						
		Cohesion C kg/cm²						
		Angle of shearing resistance φ °						
	Consolidation test	Consolidation yielding pressure Py kg/cm²						
		Compression index Cc						

Remarks :

Results of Soil Test

Site of investigate PORT IRENE BH - 5 Recorder N.PRADO

Sample No. BH-5			7	8						
Depth m			20.00 20,45	25.00 25.45						
Grain size analysis	Gravel	(>2000μ) %	0	0						
	Sand	(74~2000μ) %	10.2	6.1						
	Silt	(5 ~ 74μ) %	75.8	77.9						
	Clay	(< 5μ) %	14.0	16.0						
	Max. diameter	mm	0.84	0.84						
	Coefficient of uniformity	Uc	15.0	17.0						
	Coefficient of curvature	Uc'	3.1	2.1						
Consistency	Liquid limit	WL %	45.0	53.8						
	Plastic limit	Wp %	25.5	30.0						
	Plasticity index	Ip	19.5	23.8						
Classification	Triangular classification chart		Clayey Silt	Silty clay						
	Plasticity chart		CL	CH						
Specific gravity of soil particles Gs			2.53	2.54						
Natural state	Water content	W %	50.3	56.2						
	Wet unit weight	γt g/cm³	1.67	1.63						
	Void ratio	e								
	Degree of saturation	Sr %								
Mechanical characteristics	Unconfined compression test	Unconfined compressive strength Qu kg/cm²								
		Secant modulus Eso kg/cm²								
		Sensitivity ratio St								
	Single shear test	Testing condition								
		Cohesion C kg/cm²								
		Angle of shearing resistance φ °								
	Trioxiol compression test	Testing condition								
		Cohesion C kg/cm²								
		Angle of shearing resistance φ °								
	Consolidation test	Consolidation yielding pressure Py kg/cm²								
		Compression index Cc								

Remarks :

JIS A 1204	Method of Grain -- Size Analysis of Soils	Report Form

Job Site: PORT OF IRENE Date: 6-4-81

Sample No, Depth: No. BH-1 (5.0~5.45m) Technician: N. Prado

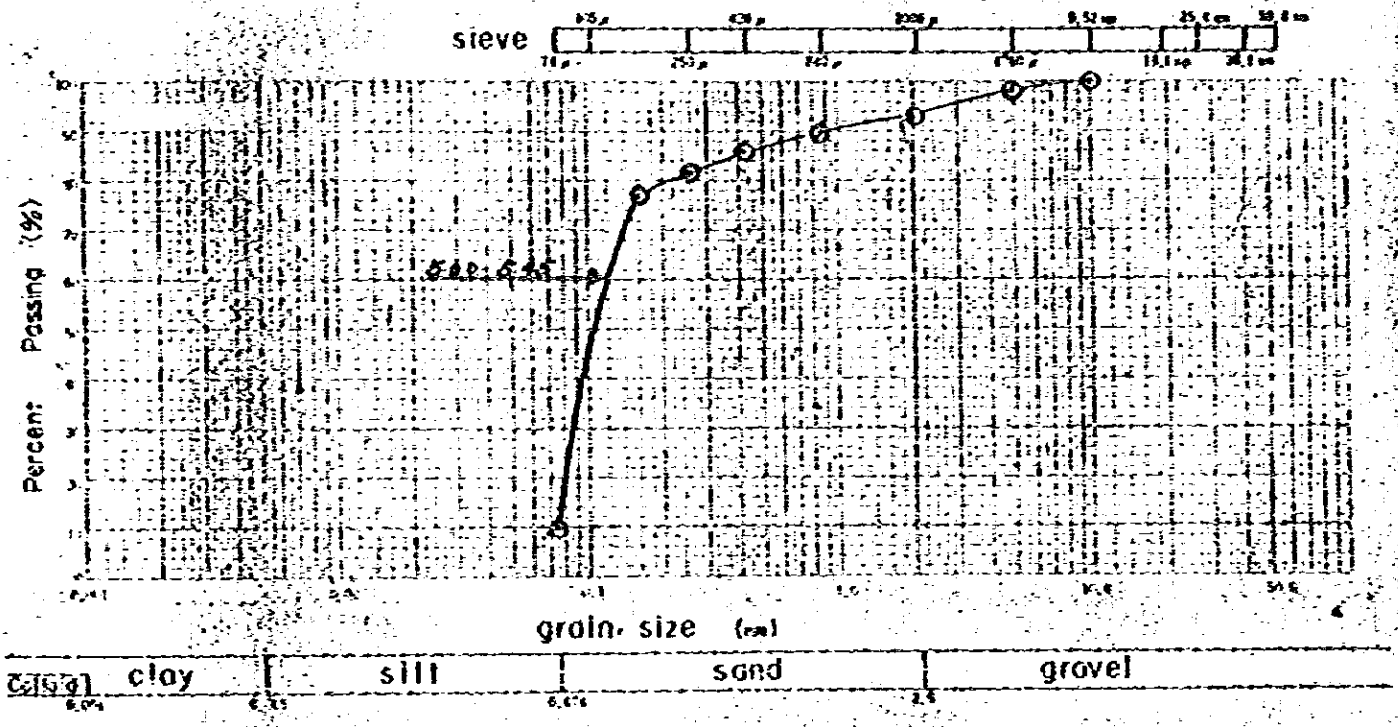
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-1 (5.0m~5.45m) Gs

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Sieve	Weight percent %					100	98.3	92.4	89.7	86.3	81.1	76.9	9.9
Hydrometer	Grain size mm												
	Weight percent %												

Sample No., Depth: (m~ m) Gs

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Sieve	Weight percent %												
Hydrometer	Grain size mm												
	Weight percent %												



Sample No, Depth	No. BH-1 m~ m	No. m~ m	Sample No, Depth	No. BH-1 5.0 m~5.45m	No. m~ m
Grains in 4.76mm and larger	1.7 %	%	Max. grain size	9.52 mm	mm
Grains in 4.76 ~ 2mm	5.9 %	%	60 % grain size	.12 mm	mm
Grains in 2 ~ 0.42mm	6.1 %	%	30 % grain size	.087 mm	mm
Grains in 0.42~0.005mm	76.4 %	%	10 % grain size	.075 mm	mm
Silt in 0.074~0.005mm	9.9 %	%	Coefficient of uniformity	1.6	
Clays less than 0.005mm	0 %	%	Coefficient of curvature	0.841	
Colloid less than 0.001mm	0 %	%			
Percent by weight passing through 2000μ sieve	92.4 %	%			
Percent by weight passing through 420μ sieve	86.3 %	%			
Percent by weight passing through 74μ sieve	9.9 %	%			

JIS A 1204	Method of Grain -- Size Analysis of Soils	Report Form

Job Site: PORT OF IRUN Date: 6-4-81

Sample No, Depth: No. BH-1 (8.0 m ~ 8.45m) Technician: N. Prado

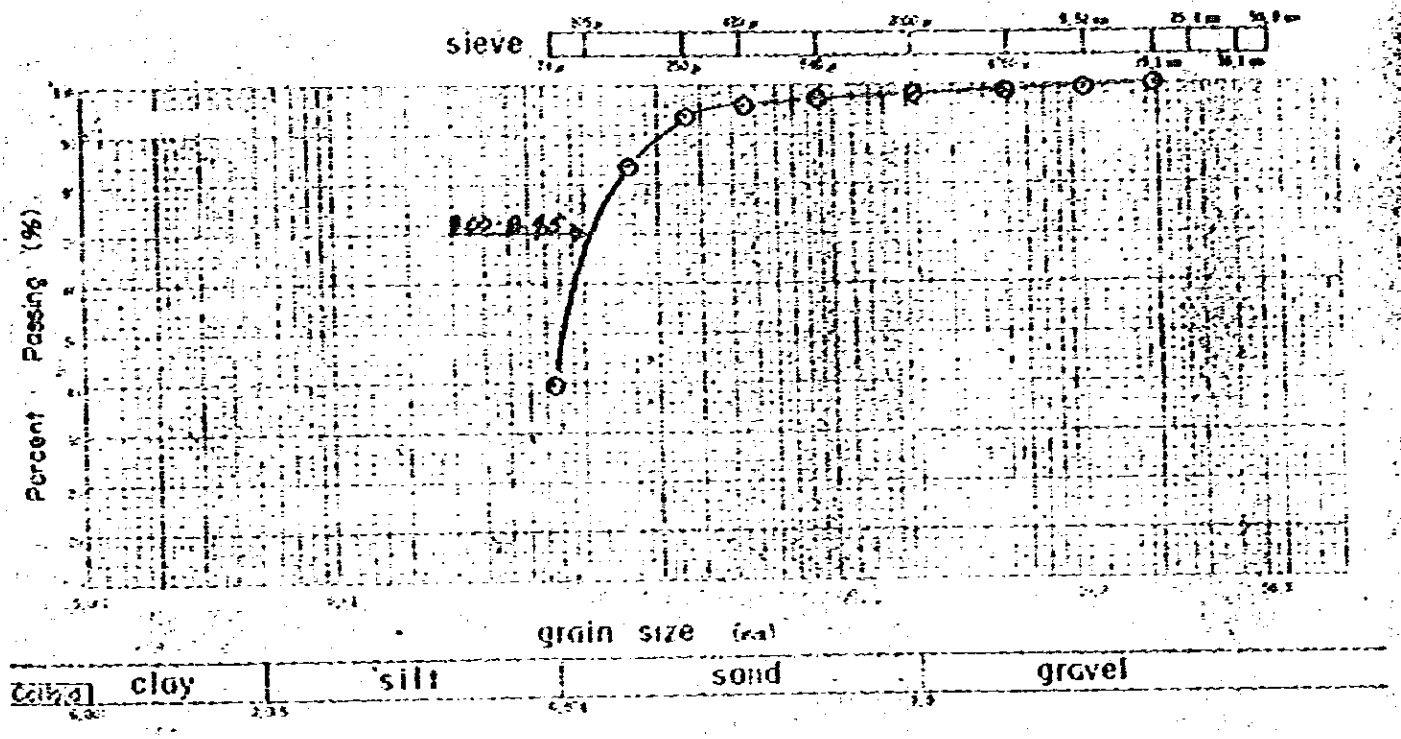
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-1 (8.0 m ~ 8.45m) Gs

Sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %				100	99.3	98.5	98.1	97.3	96.2	94.4	83.9	39.5
Hydrometer	Grain size mm												
	Weight percent %												

Sample No., Depth: (m ~ m) Gs

Sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
Hydrometer	Grain size mm												
	Weight percent %												



Sample No., Depth	No. BH-1 8.0 m 8.45 m	No.	Sample No., Depth	No. BH-1 8.0 m ~ 8.45	No.
Grains in 4 form and larger	1.5 %	%	Max. grain size	19.1 mm	mm
Grains in 4.76 ~ 2mm	0.4 %	%	60 % grain size	.09 mm	mm
Grains in 2 ~ 0.42mm	1.9 %	%	30 % grain size	-- mm	mm
Grains in 0.42 ~ 0.074mm	56.7 %	%	10 % grain size	-- mm	mm
Silt in 0.074 ~ 0.005mm	39.5 %	%	Coefficient of uniformity	--	
Clays less than 0.005mm	0 %	%	Coefficient of curvature	--	
Colloid less than 0.001mm	0 %	%			
Percent by weight passing through 2000μ sieve	98.1 %	%			
Percent by weight passing through 420μ sieve	96.2 %	%			
Percent by weight passing through 74μ sieve	39.5 %	%			

JIS A 1204	Method of Grain-Size Analysis of Soils	Report Form

Job Site: PORT OF IRENE Date: 6-9-81

Sample No, Depth: No. BH-1 (12.0 ~ 12.45) Technician: N. Prado

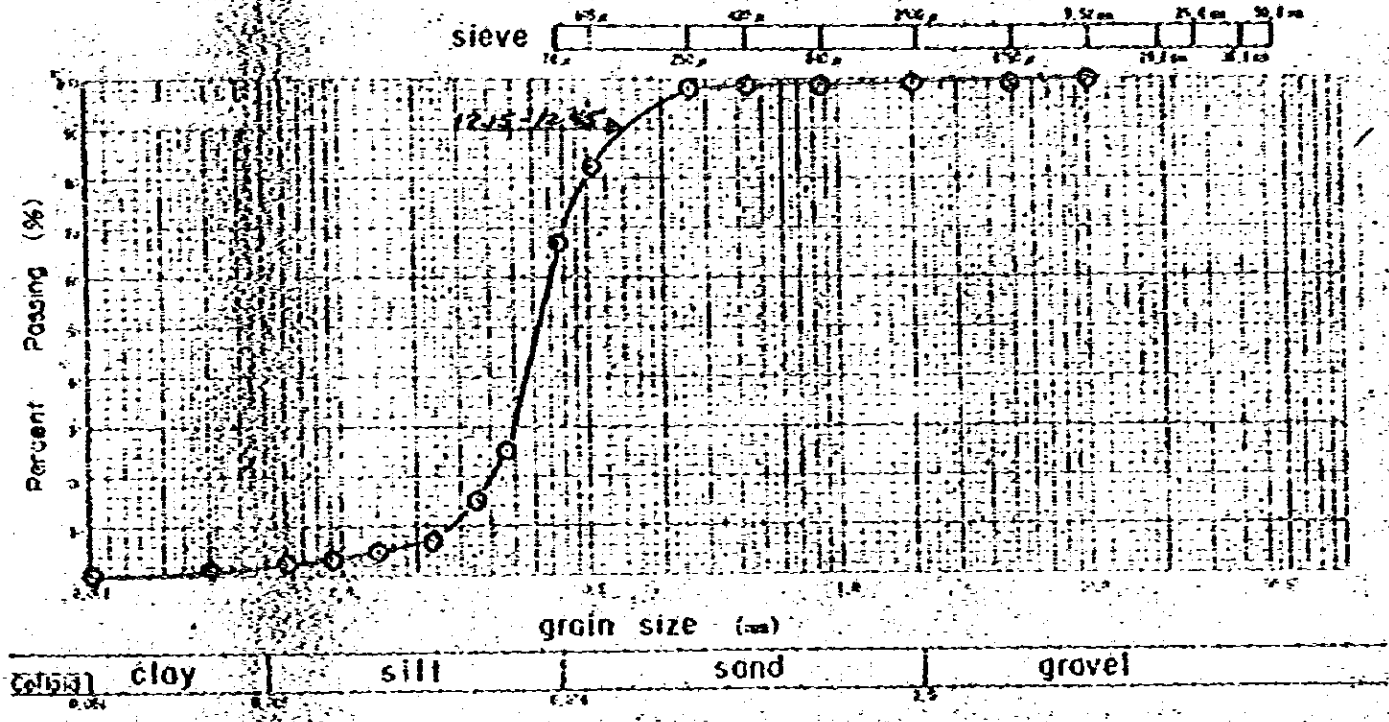
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-1 (12.0 m ~ 12.45 m) Gs: 2.45

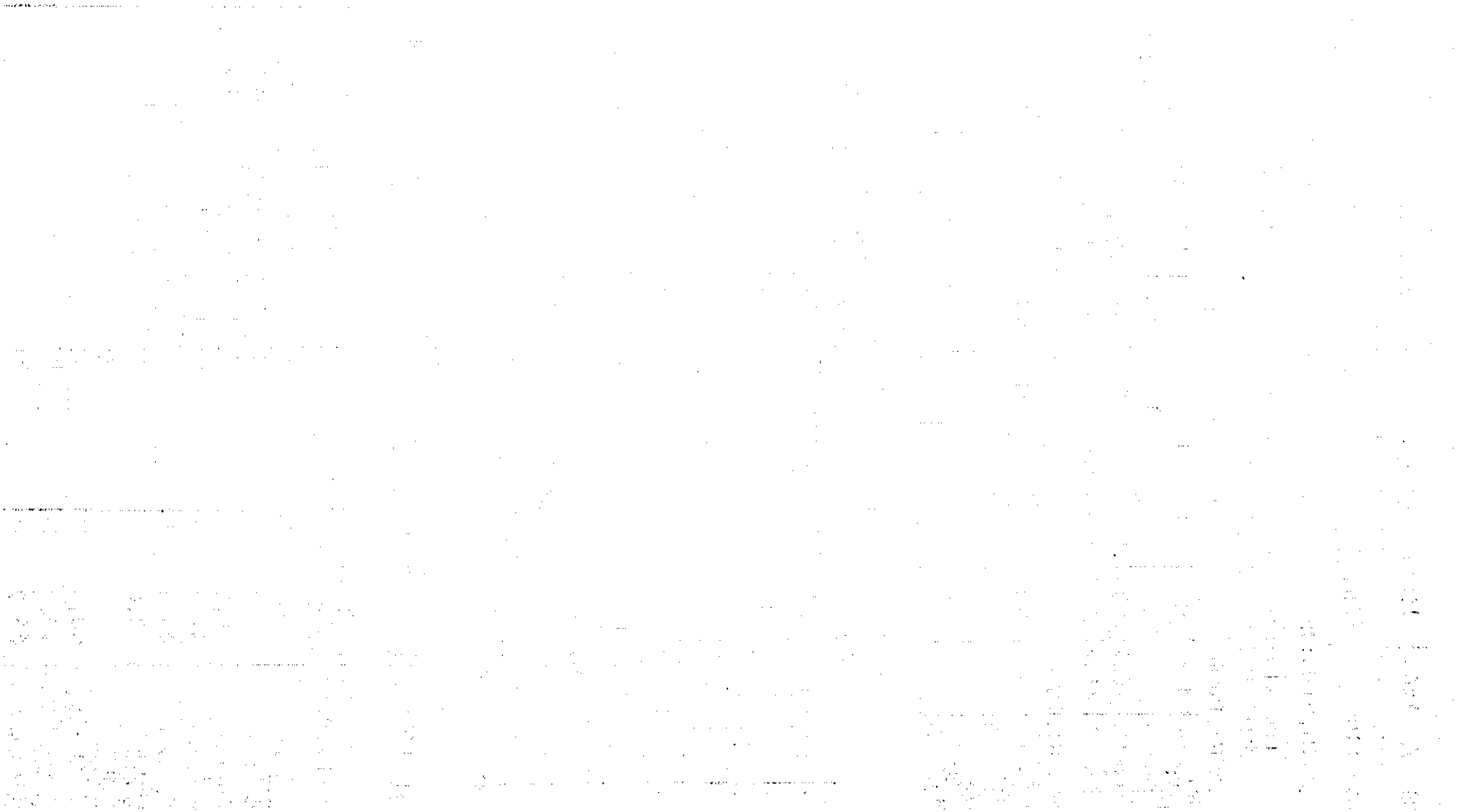
Sieve analysis	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %					100	99.5	99.3	98.9	98.7	98.2	82.1	66.9
Hydrometer analysis	Grain size mm	.047	.035	.023	.014	.009	.006	.003	.001				
	Weight percent %	25.2	14.7	5.3	4.2	3.2	2.1	1.1	0				

Sample No., Depth: (m ~ m) Gs

Sieve analysis	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
Hydrometer analysis	Grain size mm												
	Weight percent %												



Sample No, Depth	No. BH-1 12.0 ~ 12.45	No. m ~ m	Sample No, Depth	No. BH-1 12.0 ~ 12.45	No. m ~ m
Grains in 4.76mm and larger	0.5 %	%	Max. grain size	9.52 mm	mm
Grains in 4.76 ~ 2mm	0.2 %	%	60 % (grain size)	.07 mm	mm
Grains in 2 ~ 0.42mm	0.6 %	%	30 % (grain size)	.05 mm	mm
Grains in 0.42 ~ 0.074mm	31.8 %	%	10 % (grain size)	.028 mm	mm
Silt in 0.074 ~ 0.005mm	64.9 %	%	Coefficient of uniformity	2.16	
Clay less than 0.005mm	2.0 %	%	Coefficient of curvature	1.27	
Colloid less than 0.001mm	0 %	%			
Percent by weight passed through 2000μ sieve	99.3 %	%			
Percent by weight passed through 420μ sieve	98.7 %	%			
Percent by weight passed through 74μ sieve	66.9 %	%			



JIS A 1204	Method of Grain-Size Analysis of Soils	Report Form

Job Site PORT OF IRENE Date 6-4-81

Sample No, Depth: No. BH-1 (16.0 ~ 16.45 m) Technician N. Prado

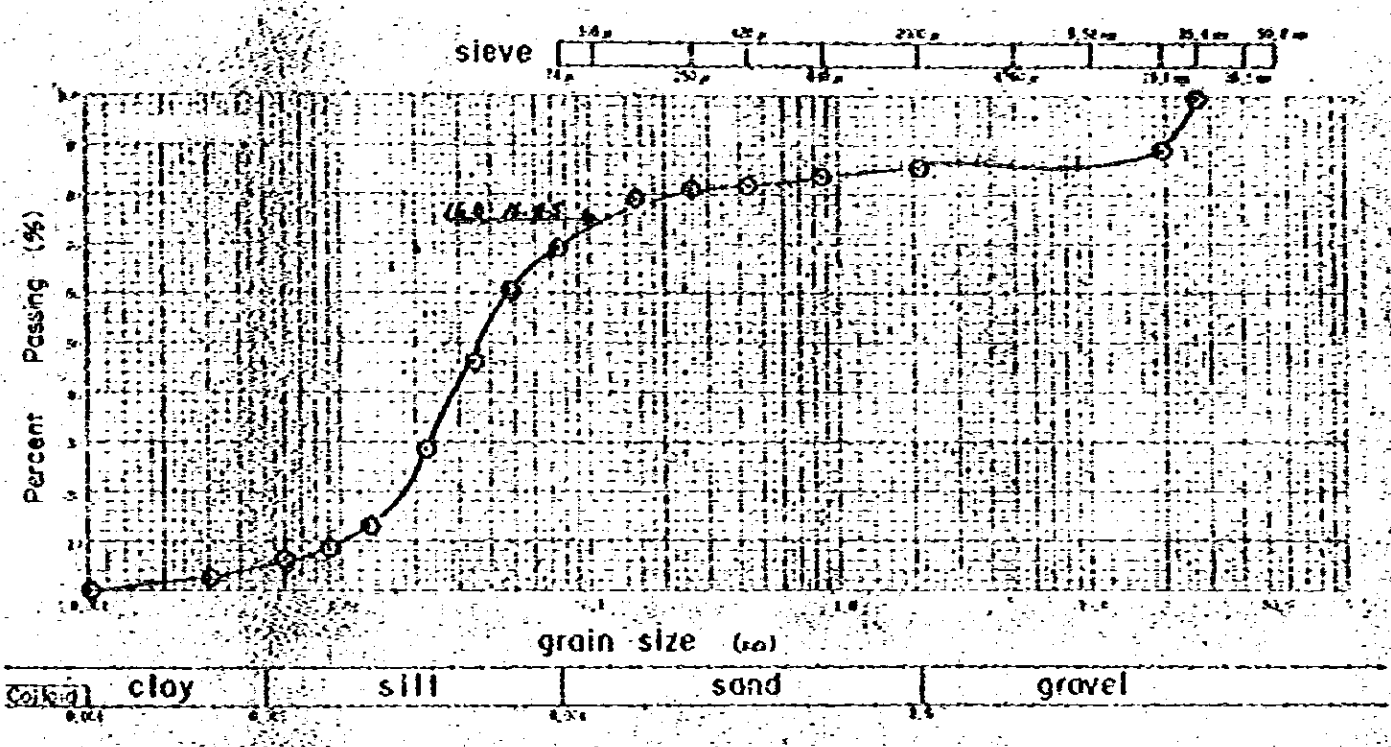
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth (m ~ m) Gs 2.45

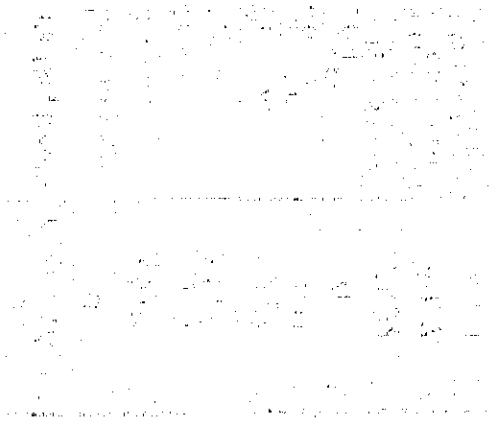
sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %			100	88.1	0	0	84.2	83.1	80.7	80.4	79.1	68.9
hydrometer	Grain size mm	.047	.034	.022	.013	.009	.006	.003	.001				
	Weight percent %	60.5	46.3	29.5	12.6	8.4	6.3	2.1	0				

Sample No., Depth (m ~ m) Gs

sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
hydrometer	Grain size mm												
	Weight percent %												



Sample No, Depth	No. BH-1 16.0 m-16.45 m	No. m~ m	Sample No, Depth	No. BH-1 16.0 m-16.45 m	No. m~ m
Grains in 4.76mm and larger	0 %	%	Max. grain size	25.4 mm	mm
Grains in 4.76 ~ 2mm	15.8 %	%	60 %(grain size)	.047 mm	mm
Grains in 2 ~ 0.42mm	3.5 %	%	30 %(grain size)	.023 mm	mm
Grains in 0.42~0.074mm	11.8 %	%	10 %(grain size)	.01 mm	mm
Silt in 0.074~0.006mm	63.9 %	%	Coefficient of uniformity	4.7	
Clays less than 0.006mm	5.0 %	%	Coefficient of curvature	1.12	
Colloid less than 0.001mm	0.0 %	%			
Percent by weight passing through 2000μ sieve	84.2 %	%			
Percent by weight passing through 420μ sieve	80.7 %	%			
Percent by weight passing through 74μ sieve	68.9 %	%			



JIS A 1204	Method of Grain -- Size Analysis of Soils	Report Form

Job Site: PORT (IRENE Date: 6-23-81

Sample No., Depth: No. BH-1 (20m ~ 20.45m) Technician: N. Prado

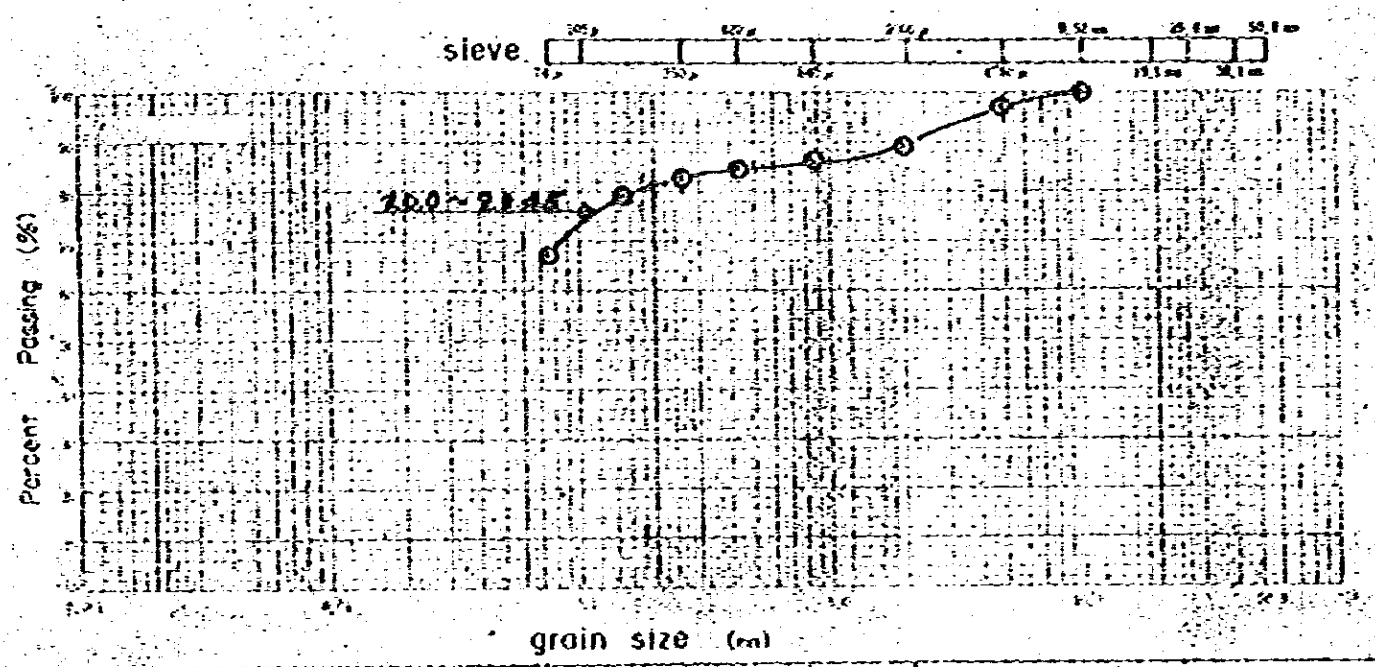
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing.

Sample No., Depth: B_h-1 (20.0m ~ 20.45m) Gs

sieve		50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Grain size mm												
	Weight percent %					100	96.6	88.4	84.8	83.7	82.3	79.4	67.4
	Grain size mm												
	Weight percent %												

Sample No., Depth: (m ~ m) Gs

sieve		50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Grain size mm												
	Weight percent %												
	Grain size mm												
	Weight percent %												



Grain	clay	silt	sand	gravel

Sample No., Depth	No. BH-1 20.0m-20.45	No. m~m	Sample No., Depth	No. BH-1 20.0m-20.45	No. m~m
Grains in 4.76mm and larger	3.4 %	%	Max. grain size	9.52 mm	mm
Grains in 4.76 ~ 2mm	8.2 %	%	50 %(grain size)	mm	mm
Grains in 2 ~ 0.42mm	4.7 %	%	30 %(grain size)	mm	mm
Grains in 0.42 ~ 0.074mm	16.3 %	%	10 %(grain size)	mm	mm
Silt in 0.074 ~ 0.005mm	67.4 %	%	Coefficient of uniformity		
Clays less than 0.005mm	0 %	%	Coefficient of curvature		
Colloid less than 0.001mm	0 %	%			
Percent by weight passing through 2.00m sieve	88.4 %	%			
Percent by weight passing through 420μ sieve	83.7 %	%			
Percent by weight passing through 74μ sieve	67.4 %	%			

JIS A 1205 A 1206 | Determination of the Liquid limit and Plastic limit of Soil | Reporting paper

Job, Site , PORT OF IRENE Date 6-5-81

Technician N. Prado

Sample No, Depth | No. BH-1 12.0m~12.45)

Liquid limit Test			Plastic limit Test	
No.	No. of blows	Moisture content %	No.	Moisture content %
1	45	37.57	1	33.26
2	34	38.42	2	32.73
3	26	41.10	3	
4	19	43.13		
5	12	44.48		
6			Average	32.99

Liquid limit w_L	Plastic limit w_P	Plasticity index I_P
40.9 %	33.0 %	7.9

Remarks: describe preparation method of the sample and etc.

Sample No, Depth | No. BH-1 16.0m~16.45)

Liquid limit Test			Plastic limit Test	
No.	No. of blows	Moisture content %	No.	Moisture content %
1	45	50.66	1	37.99
2	28	52.48	2	37.84
3	21	53.01	3	
4	15	55.61		
5	10	56.45	Ave	37.91
6				

Liquid limit w_L	Plastic limit w_P	Plasticity index I_P
53.6 %	37.9 %	15.7

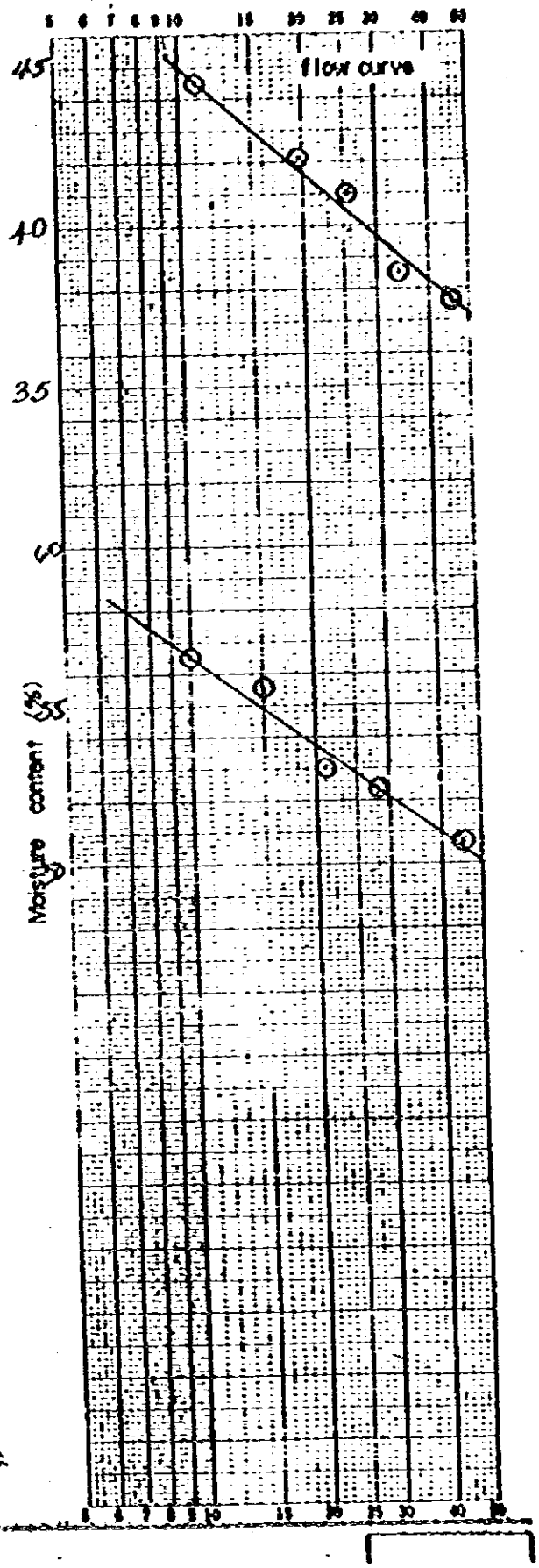
Remarks: describe preparation method of the sample and etc.

Sample No, Depth | No. (m~ m)

Liquid limit Test			Plastic limit Test	
No.	No. of blows	Moisture content %	No.	Moisture content %
1			1	
2			2	
3			3	
4				
5				
6				

Liquid limit w_L	Plastic limit w_P	Plasticity index I_P
%	%	

Remarks: describe preparation method of the sample and etc.



JIS A 1202	Determination of the Specific Gravity of Soil	Reporting paper

Job, Site PORT [illegible] IRENE Date 6-3-81

Technician N. Prado

Sample No, Depth		No. BH-1 (3.0m~3.45m)			No. BH-1 (5.0 m~5.45m)		
Test No		1	2	3	1	2	3
Pycnometer No		43	93	92	73	55	50
Weight of pycnometer + oven dried soil (Wet soil) + water Wb g		161.26	158.86	156.90	164.36	160.47	156.95
Temperature of content when Wb is meas		9 °C	9 °C	9 °C	9 °C	9 °C	9°C
W. of oven dried soil in pycnometer.	container No						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g	15.0	15.0	15.0	15.0	15.0	15.0
① Converted weight of T°C (container + distilled water) Wa g		151.95	149.54	147.68	155.21	151.22	147.72
$W_s + (W_a - W_b)$ g		5.69	5.68	5.78	5.95	5.75	5.83
Specific Gravity at T°C $({}^{T°C}/_{T°C}) = \frac{W_s}{W_s + (W_a - W_b)}$		2.64	2.64	2.60	2.52	2.60	2.57
② Compensation coefficient K		1.0007	1.0007	1.0007	1.0007	1.0007	1.0007
Specific Gravity at 15°C $({}^{T°C}/_{15°C}) = K \times Gs\,({}^{T°C}/_{T°C})$		2.64	2.64	2.60	2.52	2.60	2.57
Averege Value		Gs (T°C/15°C) = 2.63 g/cm³			Gs (T°C/15°C) = 2.56 g/cm³		
Remarks							

(Note) ① is obtained from attached inspection table of pycnometer. ② is from JIS.

Sample No, Depth		No. BH-1 (8.0~8.45m)			No. BH-1 (12.0~12.45)		
Test No		1	2	3	1	2	3
Pycnometer No		44	89	94	48	63	36
Weight of pycnometer + oven dried soil (Wet soil) + water Wb g		157.25	155.56	157.47	157.18	154.50	160.82
Temperature of content when Wb is meas.		9 °C	9 °C	9 °C	9 °C	9 °C	9 °C
W. of oven dried soil in pycnometer.	container No						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g	15.00	15.00	15.00	15.0	15.00	15.00
① Converted weight of T°C (container + distilled water) Wa g		148.06	146.41	148.26	148.39	145.60	151.95
$W_s + (W_a - W_b)$ g		5.81	5.85	5.79	6.21	6.10	6.13
Specific Gravity at T°C $({}^{T°C}/_{T°C}) = \frac{W_s}{W_s + (W_a - W_b)}$		2.58	2.56	2.59	2.42	2.46	2.45
② Compensatin coefficient K		1.0007	1.0007	1.0007	1.0007	1.0007	1.0007
Specific Gravity at 15°C $({}^{T°C}/_{15°C}) = K \times Gs\,({}^{T°C}/_{T°C})$		2.58	2.56	2.59	2.42	2.46	2.45
Average Value		Gs (T°C/15°C) = 2.57 g/cm³			Gs (T°C/15°C) = 2.45 g/cm³		
Remarks							

(Note) ① is obtained from attached inspection table of pycnometer. ② is from JIS

JIS A 1202	Determination of the Specific Gravity of Soil	Reporting paper

Job, Site PORT IRENE Date 6-3-81

Technician N. Prado

Sample No, Depth		No. BH-1 (16.0~16.45)			No. BH-1 (20.0~20.45)		
Test No		1	2	3	1	2	3
Pycnometer No		47	65	32	62	46	32
Weight of pycnometer + oven dried soil(wet soil) + water Wb		154.42	147.61	151.84	155.15	159.77	154.85
Temperature of content when Wb is meas		9 °C	9 °C	9 °C	8 °C	8 °C	8 °C
W. of oven dried soil in pycnometer.	container No						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g	15.0	7.86	15.0	15.0	15.0	15.0
① Converted weight of T°C (container + distilled water) Wa g		145.50	143.03	145.7	145.97	150.65	145.7
$W_s + (W_a - W_b)$ g		6.08	3.28	6.14	5.82	5.88	5.85
Specific Gravity at T°C $G_s(T°C) = \frac{W_s}{W_s + W_a - W_b}$		2.47	2.40	2.44	2.57	2.55	2.56
② Compensation coefficient K		1.0007	1.0007	1.0007	1.0007	1.0007	1.0007
Specific Gravity at 15°C: $G_s(15°C) = K \times G_s(T°C)$		2.47	2.40	2.44	2.57	2.55	2.56
Average Value		Gs (T°C/15°C) = 2.45 g/cm³			Gs (T°C/15°C) = 2.56 g/cm³		
Remarks							

(Note) ① is obtained from attached inspection table of pycnometer. ② is from JIS.

Sample No, Depth		No. (m~ m)			No. (m~ m)		
Test No		1	2	3	1	2	3
Pycnometer No							
Weight of pycnometer + oven dried soil(Wet soil) + water Wb g							
Temperature of content when Wb is meas							
W of oven dried soil in pycnometer.	container No						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g						
① Converted weight of T°C (container + distilled water) Wa g							
$W_s + (W_a - W_b)$ g							
Specific Gravity at T°C $G_s(T°C) = \frac{W_s}{W_s + W_a - W_b}$							
② Compensatin coefficient K							
Specific Gravity at 15°C $G_s(15°C) = K \times G_s(T°C)$							
Average Value		Gs (T°C/15°C) = g/cm³			Gs (T°C/15°C) = g/cm³		
Remarks							

(Note) ① is obtained from attached inspection table of pycnometer. ② is from JIS

JIS A 1204	Method of Grain – Size Analysis of Soils	Report Form

Job Site PORT IBARAKI Date 6-23-81

Sample No. Depth: No. BH-2 (2.0m – 2.45m) Technician No. Prado

Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No. Depth BH-2 (2.0 m – 2.45 m) Gs

Sieve size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Passing percent %					100	99.5	97.9	95.5	92.0	88.6	81.0	45.0
Sieve size mm												
Passing percent %												

Sample No. Depth (m – m) Gs

Sieve size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Passing percent %												
Sieve size mm												
Passing percent %												

Sample No. Depth	BH-2 2.0 m – 2.45 m		BH-2 2.0 m – 2.45 m	
Clays in 4 Zones and Upper	0.5	%		%
4 Zones – Zones	1.6	%		%
5 – 0.42mm	5.9	%		%
0.42 – 0.074mm	47.0	%		%
Silt in 0.074 – 0.005mm	45.0	%		%
Clays less than 0.005mm	0	%		%
Colloid less than 0.001mm	0	%		%
Percent by weight passing through 2000 μ sieve	97.9	%		%
Percent by weight passing through 420 μ sieve	92.0	%		%
Percent by weight passing through 74 μ sieve	45.0	%		%

Sample No. Depth	BH-2 2.0 m – 2.45 m		BH-2 m – m
Max. grain size	9.52	mm	mm
60 % (grain size)		mm	mm
30 % (grain size)		mm	mm
10 % (grain size)		mm	mm
Coefficient of uniformity curvature			
Coefficient of curvature			

JIS A 1204 | Method of Grain-Size Analysis of Soils | Report Form

Job Site: PORT of IRGIB — Date: 6-23-81

Sample No, Depth No.: BH-2 (5,0 ~ 5,45m) — Technikian: N. Prado

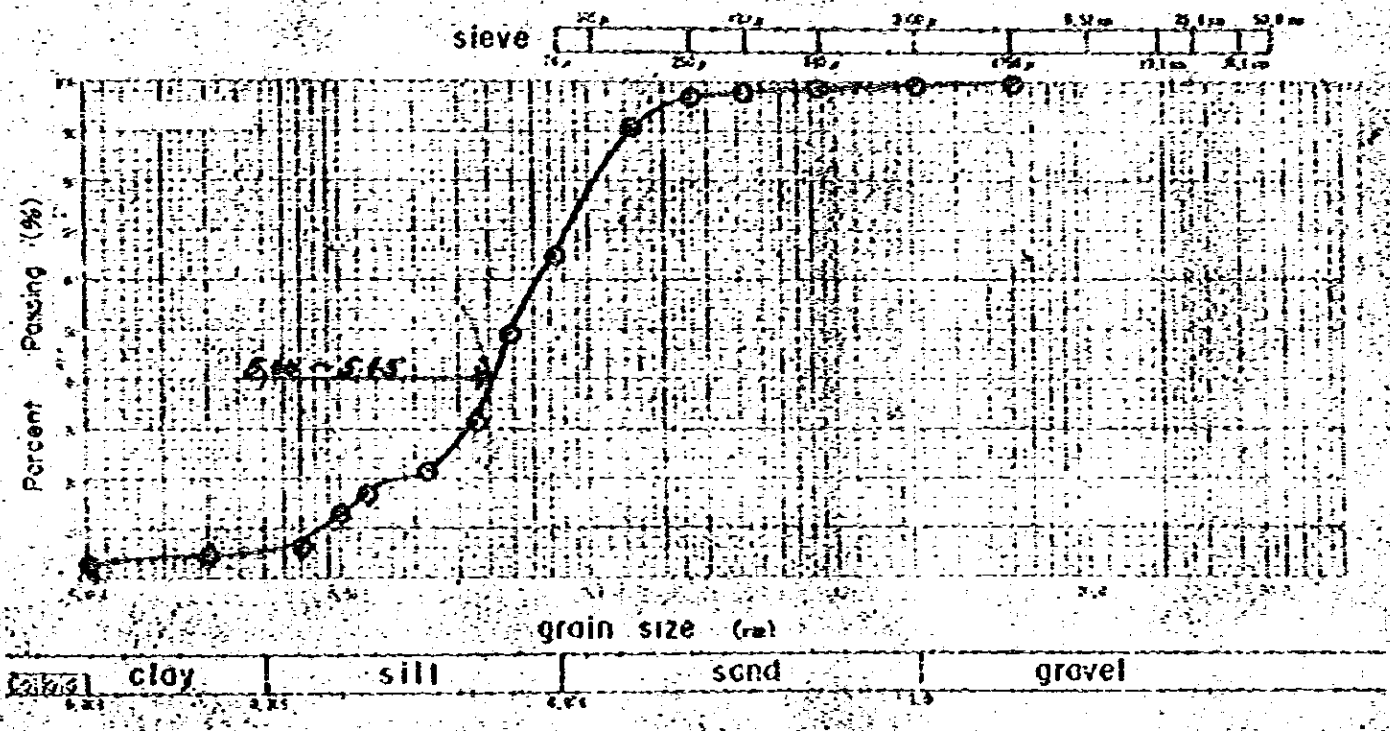
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-2 (5,0 m ~ 5,45m) — Gs: 2,50

Sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %						100	99,3	99,6	97,9	97,3	91,7	64,6
Pipette	Grain size mm	,047	,035	,023	,013	,010	,007	,003	,001				
	Weight percent %	49,8	31,1	20,8	16,6	12,5	6,2	4,1	2,1				

Sample No., Depth: (m ~ m) — Gs:

Sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
Pipette	Grain size mm												
	Weight percent %												



Sample No., Depth	No. BH-2 5,0 m ~ 5,45 m	No. m ~ m	Sample No., Depth	No. BH-2 5,0 m ~ 5,45 m	No. m ~ m
Grains in 4.76mm and larger	0 %	%	Max. grain size	4,76 mm	mm
Grains in 4.76 ~ 2mm	0,7 %	%	60 %(grain size)	,063 mm	mm
Grains in 2 ~ 0.42mm	1,4 %	%	30 %(grain size)	,033 mm	mm
Grains in 0.42 ~ 0.074mm	33,3 %	%	10 %(grain size)	,0082 mm	mm
Silt in 0.074 ~ 0.005mm	58,6 %	%	Coefficient of uniformity	7,7	
Clay less than 0.005mm	3,9 %	%	Coefficient of curvature	2,1	
Grains less than 0.001mm	2,1 %	%			
Percent by weight passing through 200.0 sieve	99,3 %	%			
Percent by weight passing through 42.0 sieve	97,9 %	%			
Percent by weight passing through 19.0 sieve	64,6 %	%			

JIS A 1204 | Method of Grain-Size Analysis of Soils | Report Form

Job Site: PORT ( ) Thesis | Date: 6-23-81

Sample No., Depth: No. BH-2 (9.0 ~ 9.45 m) | Technician: N. Prado

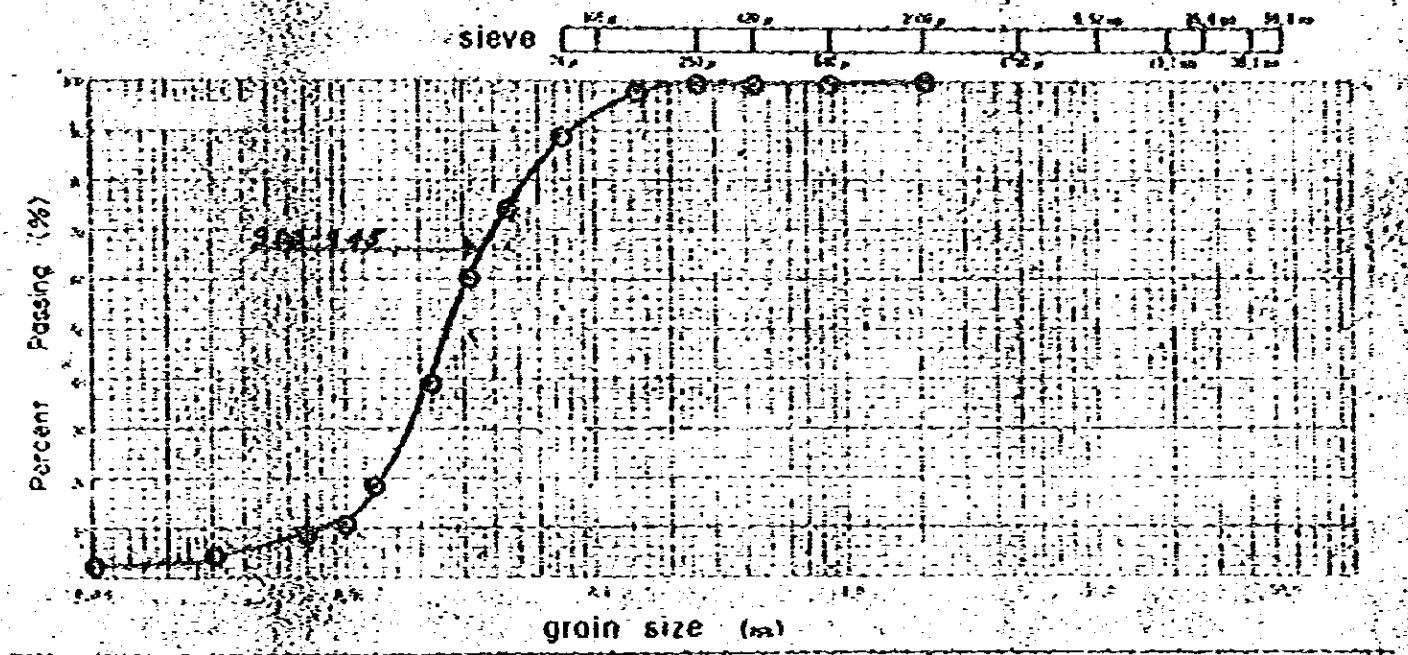
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-2 (9.0 m ~ 9.45 m) Gs: 2.50

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Passing	Weight percent %							100	99.8	99.3	99.1	98.1	89.2
Passing	Grain size mm	.046	0.32	.022	.013	.010	.007	.003	.001				
Passing	Weight percent %	74.1	60.2	39.4	18.7	10.4	8.3	4.2	2.1				

Sample No., Depth: (m ~ m) Gs

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Passing	Weight percent %												
Passing	Grain size mm												
Passing	Weight percent %												



Sample No., Depth	BH-2 9.0 m ~ 9.45 m		Sample No., Depth	BH-2 9.0 m ~ 9.45 m	
Grains in 4.76mm and larger	0	%	Max. grain size	2.00	mm
Grains in 4.76 ~ 2mm	0	%	60 %(grain size)	.032	mm
Grains in 2 ~ 0.42mm	0.7	%	30 %(grain size)	.018	mm
Grains in 0.42 ~ 0.074mm	10.1	%	10 %(grain size)	.008	mm
Silt in 0.074 ~ 0.005mm	62.2	%	Coefficient of uniformity	4.0	
Clays less than 0.005mm	19	%	Coefficient of curvature	1.3	
Colloid less than 0.001mm	2.1	%			
Percent by weight passing through 2.00 sieve	100	%			
Percent by weight passing through 0.42 sieve	99.3	%			
Percent by weight passing through 0.074 sieve	89.2	%			

JIS A 1204	Method of Grain-Size Analysis of Soils	Report Form

Job Site: PORT OF TRENB Date: 6-23-81

Sample No, Depth: No. BH-2 (12.0~12.60) Technician: N. Prado

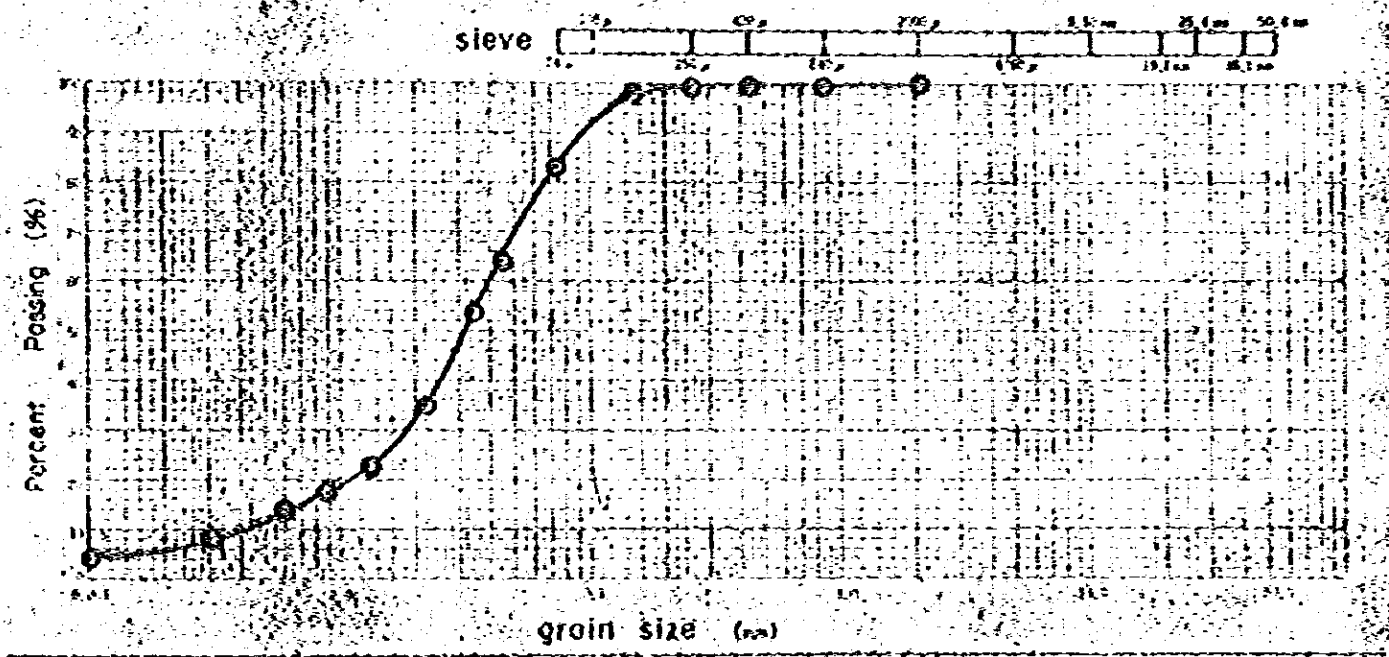
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-2 (12.0 m -12.60 m) Gs: 2.49

upper	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %							100	99.4	99.2	99.1	98.8	83.2
lower	Grain size mm	.046	.034	.022	.013	.009	.007	.003	.001				
	Weight percent %	64.5	54.1	35.4	22.9	16.7	14.6	6.3	4.2				

Sample No, Depth: (m ~ m) Gs

upper	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
lower	Grain size mm												
	Weight percent %												



Sample No., Depth	No. BH-2 12.0~12.60	%	No. m~m	%
Grains in 47mm and larger	0	%		%
Grains in 4.76 ~ 2mm	0	%		%
Grains in 2 ~ 0.42mm	0.8	%		%
Grains in 0.42 ~ 0.074mm	16.0	%		%
Silt in 0.074 ~ 0.005mm	71.2	%		%
Clay less than 0.005mm	12.6	%		%
Colloid less than 0.001mm	4.2	%		%
Percent by weight passing through 0.074mm sieve	100	%		%
Percent of weight passing through 0.42mm sieve	99.2	%		%
Percent by weight passing through 2.0mm sieve	83.2	%		%

Sample No., Depth	No. BH-2 12.0~12.60	No. m~m
Max. grain size	2.00 mm	mm
60 % grain size	.04 mm	mm
30 % grain size	.018 mm	mm
10 % grain size	.0042 mm	mm
Coefficient of uniformity	9.5	
Coefficient of curvature	1.9	

JIS A 1204	Method of Grain – Size Analysis of Soils	Report Form

Job Site: PORT OF IRENE Date: 6-23-81

Sample No, Depth: No. BH-2 (15.0m ~ 15.45m) Technichn: N. Prado

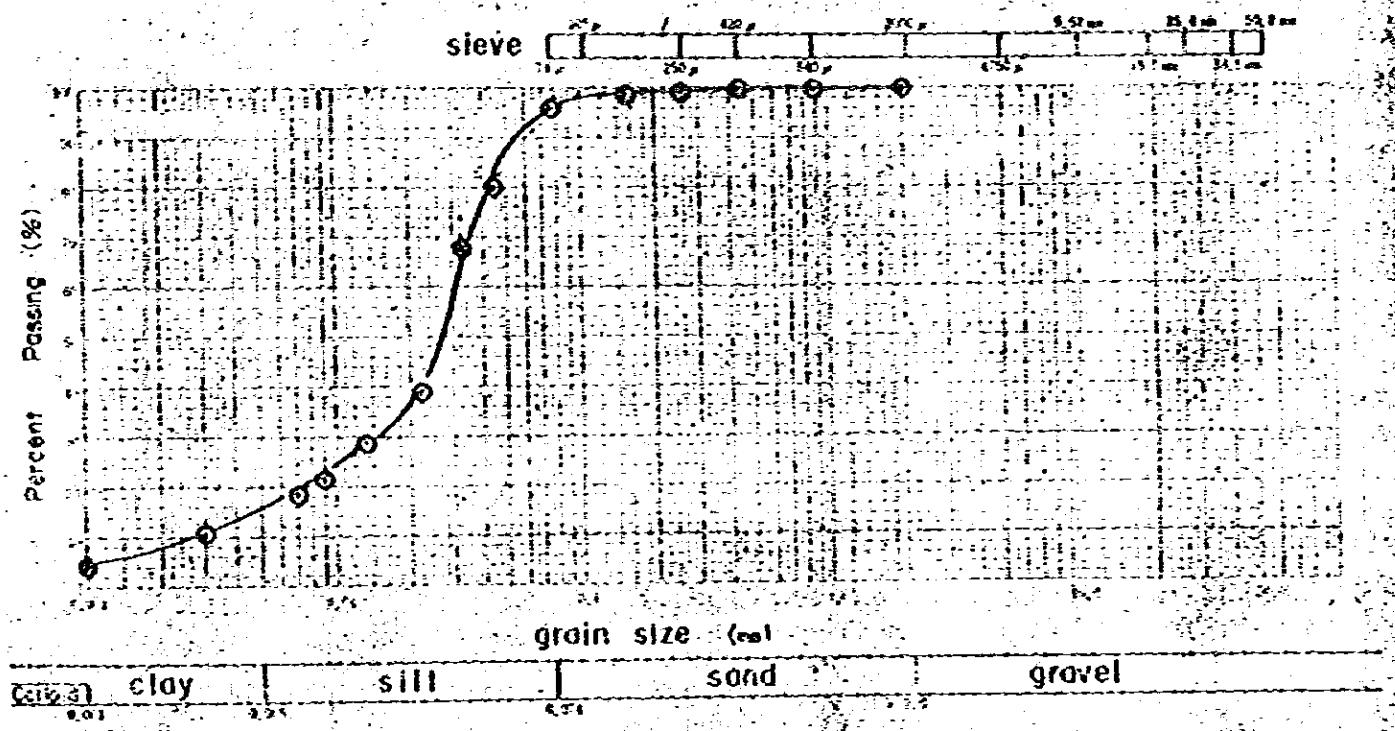
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-2 (15.0m ~ 15.45m) Gs: 2.50

Sieve size	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %							100	99.8	99.6	99.5	99.4	96.8
Sedimentation	Grain size mm	.044	.032	.022	.013	.009	.007	.003	.001				
	Weight percent %	80.9	68.1	39.4	29.1	20.6	18.7	10.4	4.2				

Sample No., Depth: (m ~ m) Gs

Sieve size	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
Sedimentation	Grain size mm												
	Weight percent %												



Sample No., Depth	No. BH-2 15.0~15.45m	No. m~m	Sample No., Depth	No. BH-2 15.0m~15.45m	No. m~m
Grains in 4.76mm and larger	0 %	%	Max. grain size	2.00 mm	mm
Grains in 4.75 ~ 2mm	0 %	%	60 %(grain size)	.031 mm	mm
Grains in 2 ~ 0.42mm	0.4 %	%	30 %(grain size)	.015 mm	mm
Grains in 0.42 ~ 0.074mm	2.8 %	%	10 %(grain size)	.0026 mm	mm
Silt in 0.074 ~ 0.005mm	80.8 %	%	Coefficient of uniformity	11.9	
Clays less than 0.005mm	11.8 %	%	Coefficient of curvature	2.8	
Colloid less than 0.001mm	4.2 %	%			
Percent by weight passing through 2000μ sieve	100 %	%			
Percent by weight passing through 420μ sieve	99.6 %	%			
Percent by weight passing through 74μ sieve	96.8 %	%			

JIS A 1205 **Determination of the Liquid limit and Plastic limit of Soil** — Reporting paper

Job, Site: PORT IRENE — Date: 6-23-81

Technician: N. Prado

Sample No., Depth — No. BH-2 (9.0 m ~ 9.45 m)

Liquid limit Test			Plastic limit Test	
No.	No. of blows	Moisture content %	No.	Moisture content %
1	10	48.0	1	24.6
2	18	46.2	2	23.3
3	25	45.8	3	
4	38	44.6		
5	50	43.8		
6			Average	

Liquid limit w_L	Plastic limit w_P	Plasticity index I_P
45.6 %	24.0 %	21.6

Remarks: describe preparation method of the sample and etc.

Sample No., Depth — No. BH-2 (12.0 m ~ 12.45 m)

Liquid limit Test			Plastic limit Test	
No.	No. of blows	Moisture content %	No.	Moisture content %
1	13	54.1	1	23.1
2	15	53.1	2	24.0
3	25	52.2	3	
4	38	49.8		
5	50	48.8		
6				

Liquid limit w_L	Plastic limit w_P	Plasticity index I_P
51.6 %	23.5 %	28.1

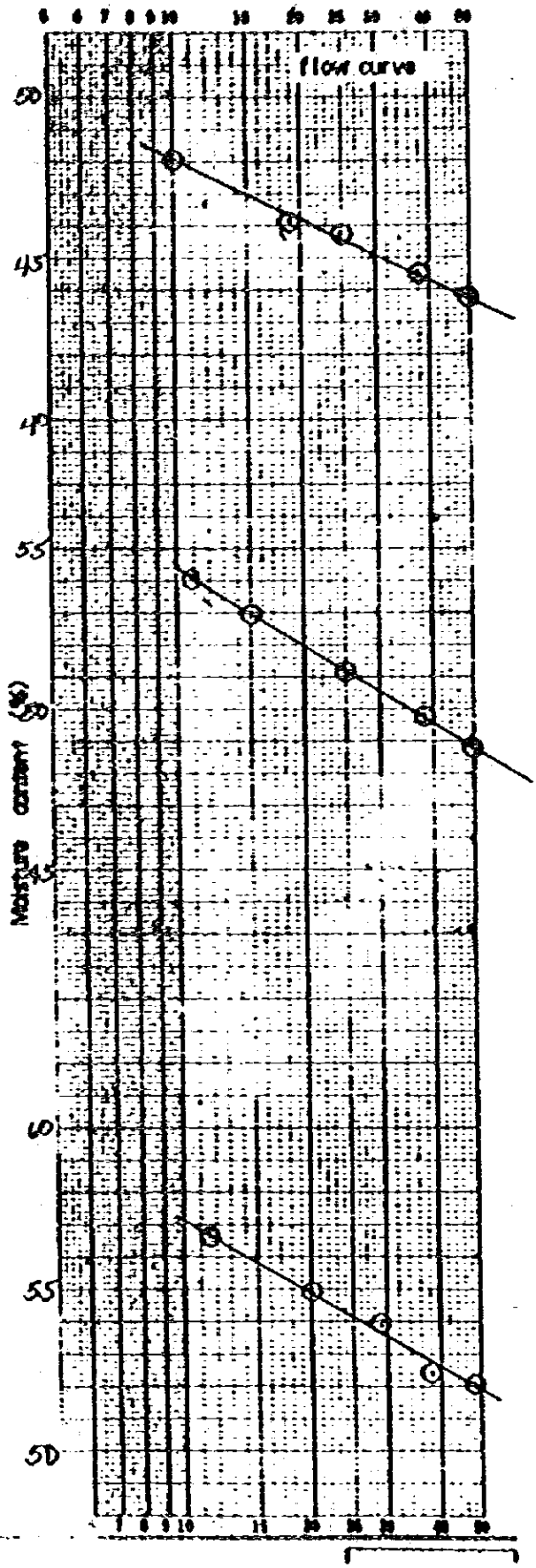
Remarks: describe preparation method of the sample and etc.

Sample No., Depth — No. BH-2 (15.0 m ~ 15.45 m)

Liquid limit Test			Plastic limit Test	
No.	No. of blows	Moisture content %	No.	Moisture content %
1	13	56.6	1	25.4
2	20	54.9	2	23.6
3	29	54.0	3	
4	38	52.4		
5	48	52.1		
6				

Liquid limit w_L	Plastic limit w_P	Plasticity index I_P
54.0 %	24.5 %	29.5

Remarks: describe preparation method of the sample and etc.



JIS A 1202	Determination of the Specific Gravity of Soil	Reporting paper

Job, Site PORT IRENE Date 6-19-81

Technicion N. Prado

Sample No., Depth		No. BH-2 (2.0m~2.45m)			No. BH-2 (9.0m~9.45m)		
Test No		1	2	3	1	2	3
Pycnometer No		65	44	89	50	43	49
Weight of pycnometer + oven dried soil(wet soil) + water Wb		152.27	157.33	155.64	156.75	160.98	151.88
Temperature of content when Wb is meas		8 °C	8 °C	8 °C	8 °C	8 °C	8 °C
W. of oven dried soil in pycnometer.	container No.						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g	15.0	15.0	15.0	15.0	15.0	15.0
①Converted weight at T°C (container + distilled water) Wa g		143.03	148.06	146.40	147.77	151.95	142.85
$W_s + (W_a - W_b)$ g		5.76	5.73	5.76	6.02	5.97	5.97
Specific Gravity at T°C $G_{T°C} = \frac{W_s}{W_s + (W_a - W_b)}$		2.60	2.61	2.60	2.49	2.51	2.51
②Compensation coefficient K		1.0007	1.0007	1.0007	1.0007	1.0007	1.0007
Specific Gravity at 15°C $G_{15°C} = K \times G_{T°C}$		2.60	2.61	2.60	2.49	2.51	2.51
Average Value		Gs (T°C/15°C) = 2.60 g/cm³			Gs (T°C/15°C) = 2.50 g/cm³		
Remarks							

(Note) (1) is obtained from attached inspection table of pycrometer ② is from JIS.

Sample No., Depth		No. BH-2 (12.0~12.45)			No. BH-2 (15.0m~15.45m)		
Test No		1	2	3	1	2	3
Pycnometer No		45	95	59	73	55	67
Weight of pycnometer + oven dried soil(Wet soil) + water Wb g		158.50	157.74	157.32	164.38	160.26	151.69
Temperature of content when Wb is meas.		8 °C	8 °C	8 °C	8 °C	8 °C	8 °C
W of oven dried soil in pycnometer.	container No.						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g	15.0	15.0	15.0	15.0	15.0	15.0
①Converted weight at T°C (container + distilled water) Wa g		149.5	148.50	148.4	155.31	151.22	142.77
$W_s + (W_a - W_b)$ g		6.00	6.01	6.08	5.93	5.96	6.08
Specific Gravity at T°C $G_{T°C} = \frac{W_s}{W_s + (W_a - W_b)}$		2.50	2.50	2.47	2.52	2.52	2.47
② Compensatin coefficient K		1.0007	1.0007	1.0007	1.0007	1.0007	1.0007
Specific Gravity at 15°C $G_{15°C} = K \times G_{T°C}$		2.50	2.50	2.47	2.52	2.52	2.47
Average Value		Gs (T°C/15°C) = 2.49 g/cm³			Gs (T°C/15°C) = 2.50 g/cm³		
Remarks.							

(Note) (1) is obtained from attached inspection table of pycnometer. ② is from JIS

JIS A 1202	Determination of the Specific Gravity of Soil	Reporting paper

Job, Site PORT · IRENE Date 6-19-81

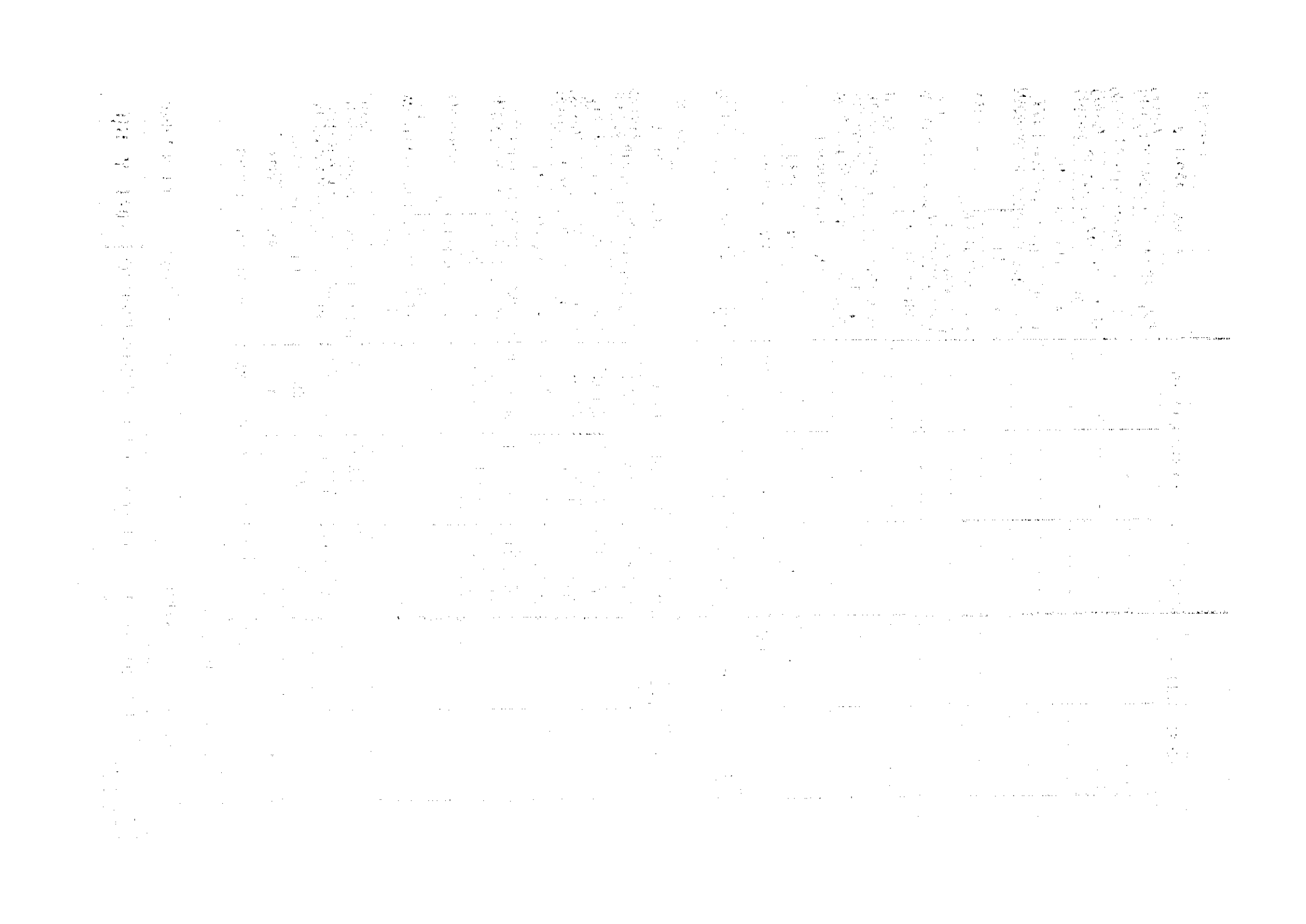
Technicion N. Prado

Sample No, Depth		No. B11-2 (5.0m~5.45m)			No. (m~ m)		
Test No.		1	2	3	1	2	3
Pycnometer No		52	47	38			
Weight of pycnometer + oven dried soil(wet soil) + water Wb		156.95	154.53	158.96			
Temperature of content when Wb is meas		8 °C	8 °C	8 °C			
W: of oven dried soil in pycnometer.	container No						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g	15.0	15.0	15.0			
①Converted weight at T°C (container + distilled water) Wa g		147.98	145.5	149.5			
$W_s + (W_a - W_b)$ g		6.03	5.97	5.98			
Specific Gravity at T°C $\rho_s^{T°C} = \frac{W_s}{W_s + W_a - W_b}$		2.49	2.51	2.50			
②Compensation coefficient K		1.0007	1.0007	1.0007			
Specific Gravity at 15°C: $\rho_s^{T°C/15°C} = K \times Gs(\rho_s^{T°C})$		2.49	2.51	2.50			
Average Value		Gs (T°C/15°C) = 2.50 g/cm³			Gs (T°C/15°C) = g/cm³		
Remarks							

(Note) (1) is obtained from attached inspection table of pycnometer. ② is from JIS.

Sample No., Depth		No. (m~ m)			No. (m~ m)		
Test No		1	2	3	1	2	3
Pycnometer No.							
Weight of pycnometer + oven dried soil(Wet soil) + water Wb g							
Temperature of content when Wb is meas.							
W of oven dried soil in pycnometer.	container No						
	Weight (container + dried soil) g						
	Wt of container g						
	W_s g						
①Converted weight at T°C (container + distilled water) Wa g							
$W_s + (W_a - W_b)$ g							
Specific Gravity at T°C, $\rho_s^{T°C} = \frac{W_s}{W_s + (W_a - W_b)}$							
② Compensation coefficient K							
Specific Gravity at 15°C: $\rho_s^{T°C/15°C} = K \times Gs(\rho_s^{T°C})$							
Average Value		Gs (T°C/15°C) = g/cm³			Gs (T°C/15°C) = g/cm³		
Remarks.							

(Note) (1) is obtained from attached inspection table of pycnometer. ② is from JIS



Unconfined Compression Test

Reporting paper

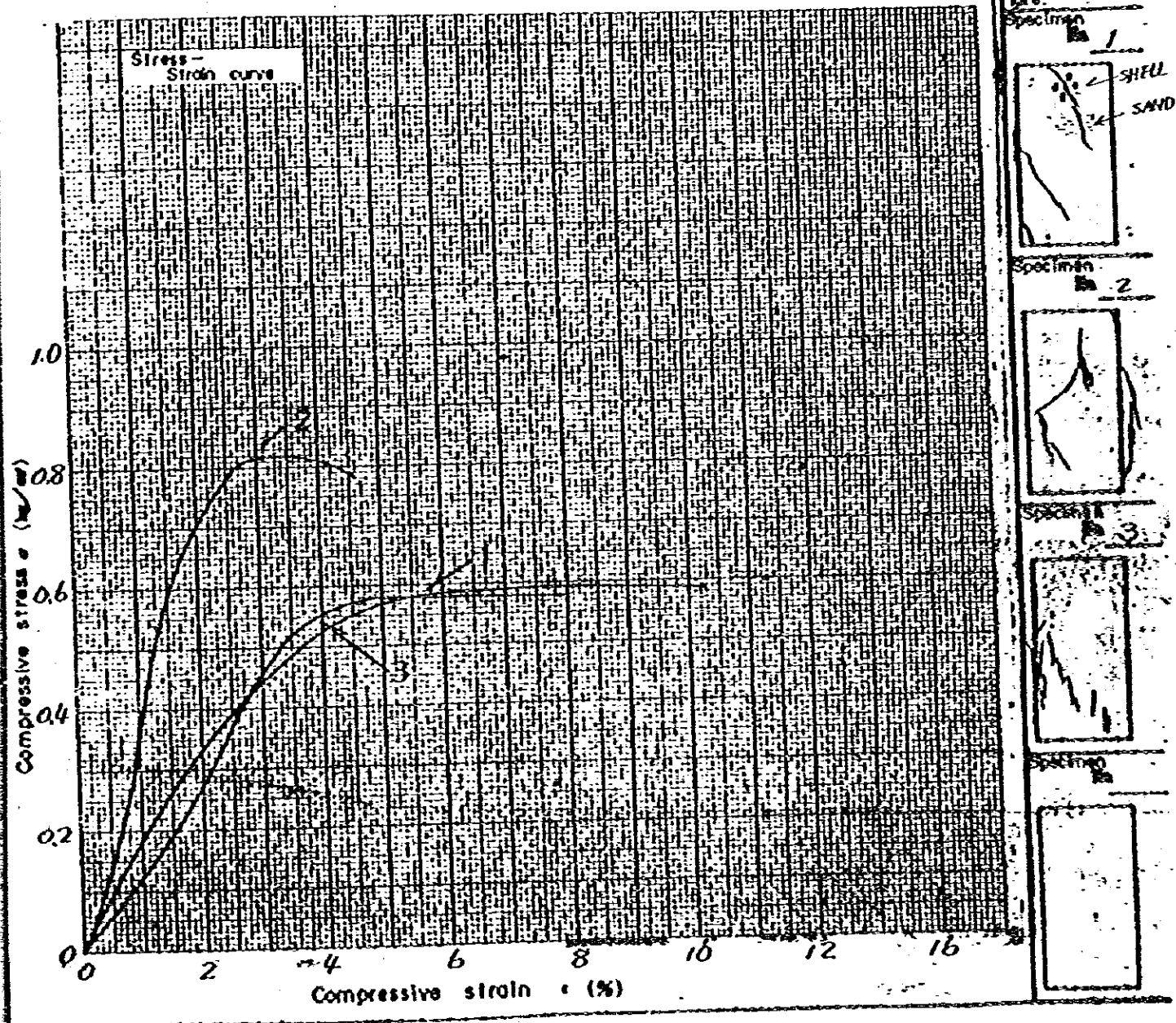
Job, Site PORT IRENE Date Jun 10, 1981

Sample No., Depth No. BH - 2 (12,00m ~ 12,80m) Technician J. MANUEL

Soil classification ____ Gravity of soil G_s 2,49 t/m³ Plasticity index I_p ____

Strain rate 1 %/min Load gage : No. ____ Load gage capacity 0,036 kg

Specimen No.	Sample condition	Size (cm) H	Size (cm) D	γ (kg/cm²)	w (%)	e	S_r (%)	q_u (kg/cm²)	ε (%)	E_{50} (kg/cm²)	S_t
1		8.75	3.53	1.62	45.5	1.24		0.589	12.6	10.9	
2		8.75	3.54	1.58	45.5	1.29		0.815	3.43	33.9	
3		8.76	3.52	1.64	45.5	1.21		0.611	10.3	16.9	



Sketch of specimen after failure.

Specimen No. 1

Specimen No. 2

Specimen No. 3

Specimen No. ____

Unconfined Compression Test

Reporting paper

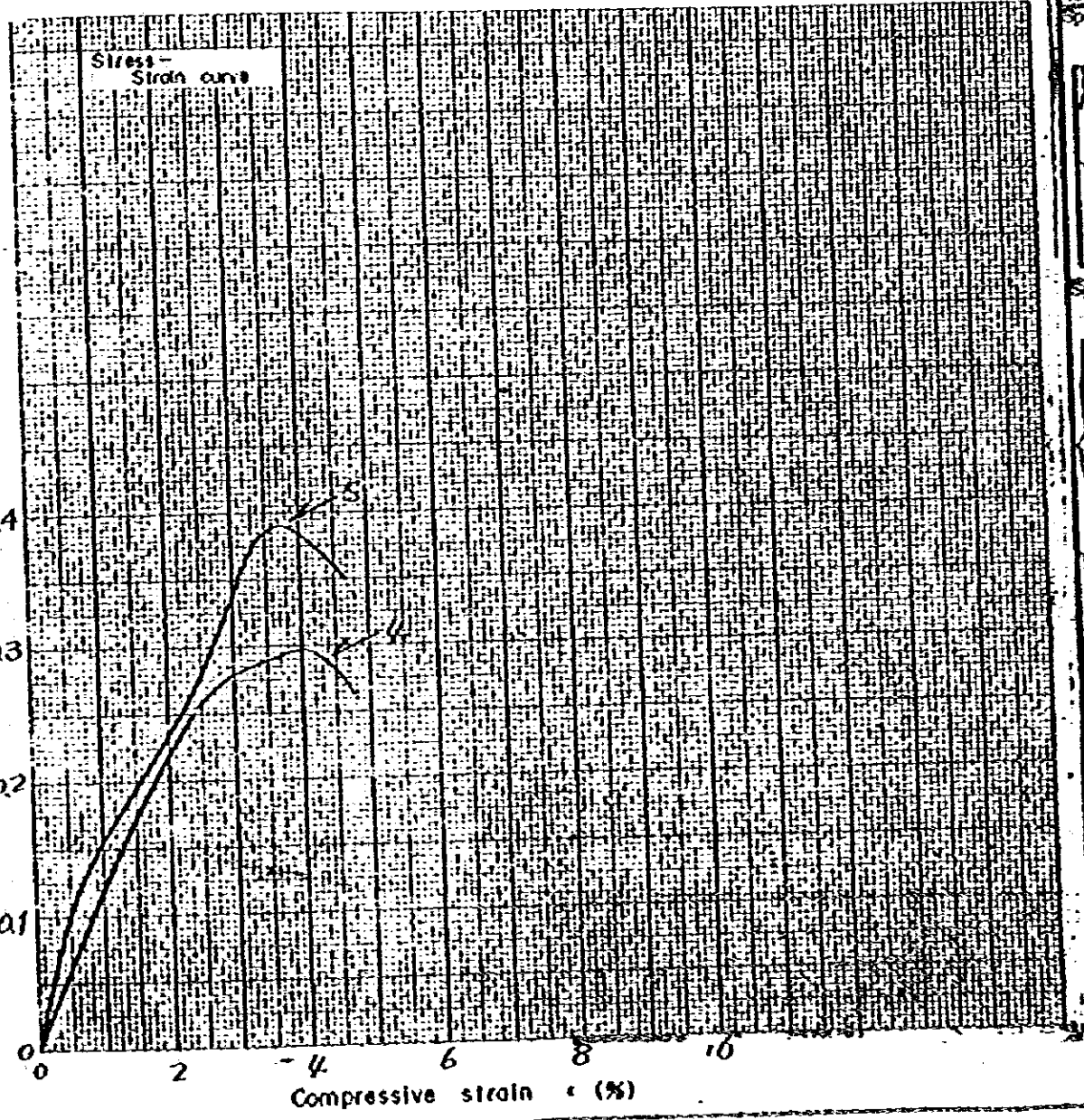
Job, Site: PORT IRENE BH - 2 Date: Jun 10, 1981

Sample No., Depth: No (12.00 m ~ 12.80m) Technician: V. MANUEL

Soil classification: Gravity of soil G_s 2.49 g/cm³ Plasticity index I_p:

Strain rate: 1 %/min · Load gage: No Load gage capacity: 0.036 kg

Specimen No	Sample condition	Size (cm) H	Size (cm) D	γ (g/cm³)	w (%)	e	S_r (%)	q_u (kg/cm²)	ε_f (%)	E_{50} (kg/cm²)	A_s
4		8.74	3.53	1.62	57.8	1.43		0.294	4.11	11.3	
5		8.75	3.52	1.62	57.8	1.43		0.356	3.66	13.7	



Sketch of specimen after failure.

Specimen No. 4

Specimen No. 5

Specimen No.

Specimen No.

Unconfined Compression Test

Reporting paper

Job, Site PORT IBERIA

Date Jun. 10, 1981

Sample No., Depth No BH - 2 15.00 m ~ 15.75m

Technician V. MANUEL

Soil classification

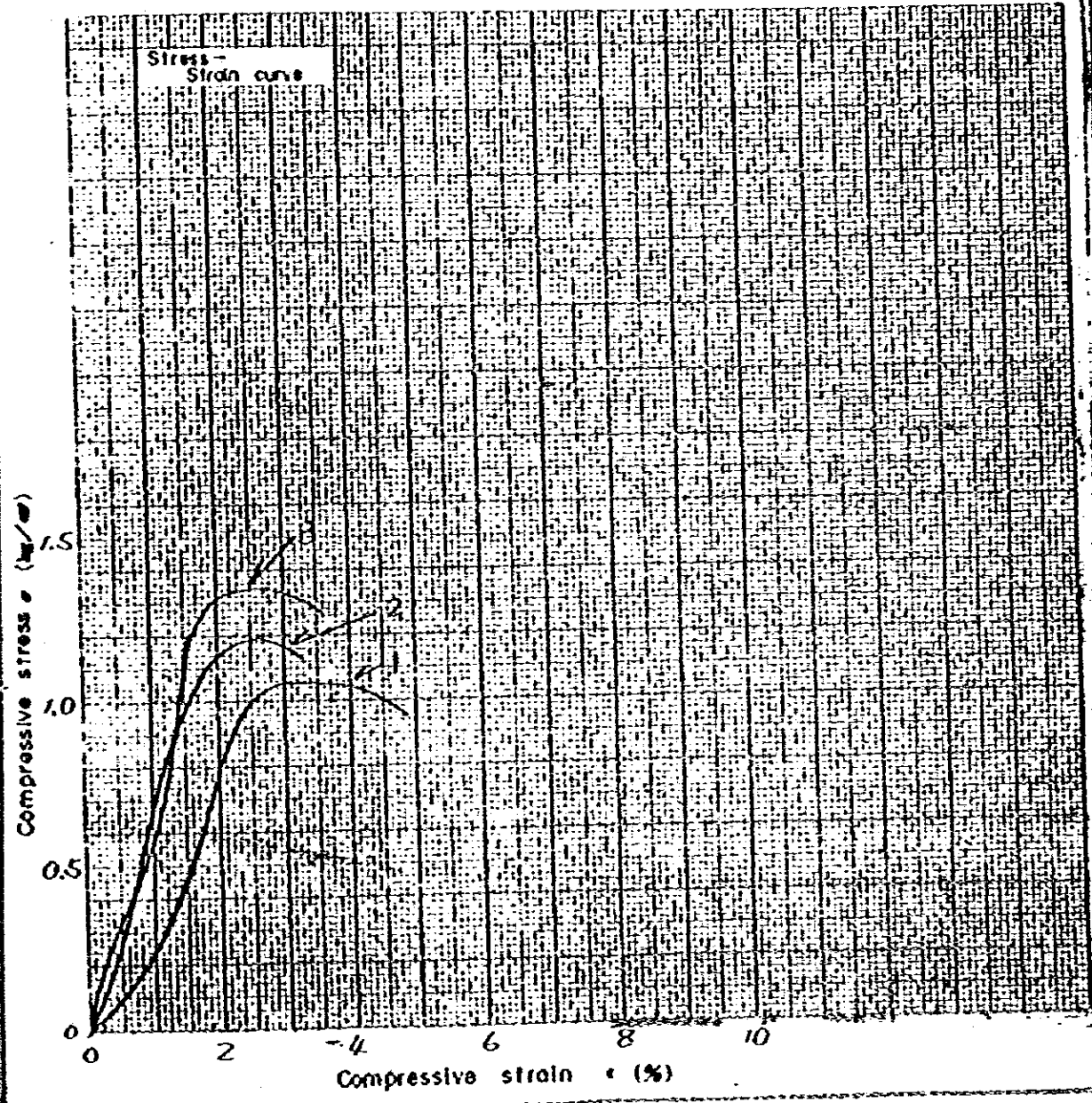
Gravity of soil G_s 2.50 t/m³

Plasticity index I_p

Strain rate 1 %/min · Load gage : No

Load gage capacity 0.036 kg

Specimen No	Sample condition	Size (cm) H	Size (cm) D	γ(g/cm³)	w(%)	e	S_r(%)	q_u(kg/cm²)	ε(%)	E_{50}(kg/cm²)	S_t
1		8.76	3.54	1.63	55.6	1.39		1.05	3.4	30.9	
2		8.76	3.57	1.64	55.6	1.38		1.18	2.3	62.1	
3		8.74	3.58	1.62	55.6	1.40		1.34	2.5	58.3	



Sketch of specimen after failure.

Specimen No. 1

Specimen No. 2

Specimen No. 3

Specimen No.

Unconfined Compression Test

Reporting paper

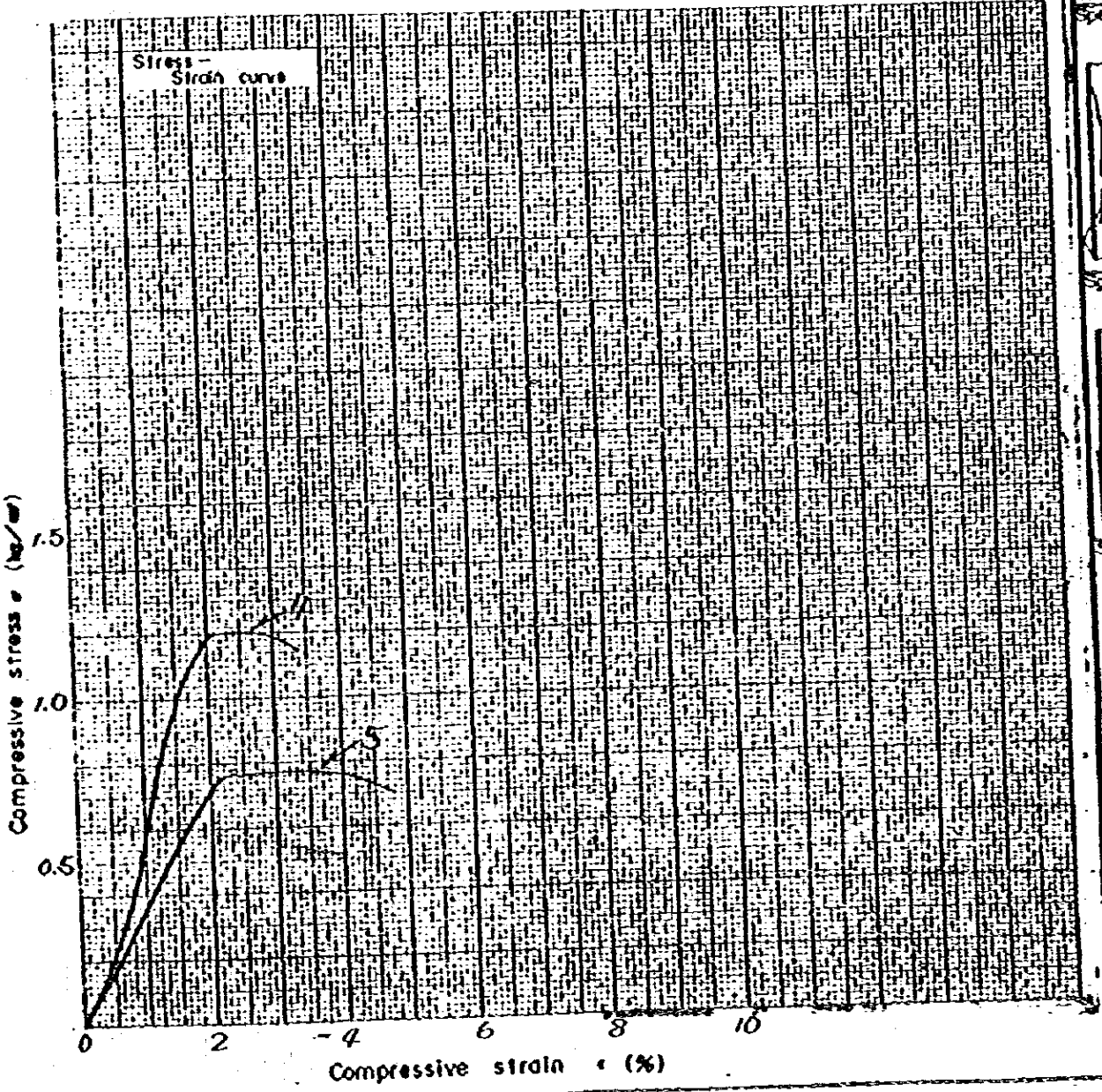
Job, Site PORT IRENE — Date Jun 10, 1981

Sample No., Depth No BH- 2 (15.00m ~15.75m) — Technician V. MANUEL

Soil classification — Gravity of soil G_s 2.50 t/m³ — Plasticity index I_p

Strain rate 1 %/min · Load gage : No — Load gage capacity 0.036 kg

Specimen No	Sample condition	Size (cm) H	Size (cm) D	γ (g/cm³)	w (%)	e	S_r (%)	q_u (kg/cm²)	ε (%)	E_{50} (kg/cm²)	S_t
4		8.75	3.54	1.65	55.6	1.36		1.20	2.3	60.1	
5		8.75	3.55	1.60	55.6	1.43		0.77	3.0	30.8	



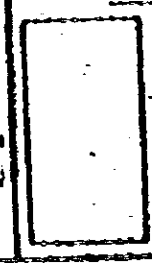
Sketch of specimen after failure.

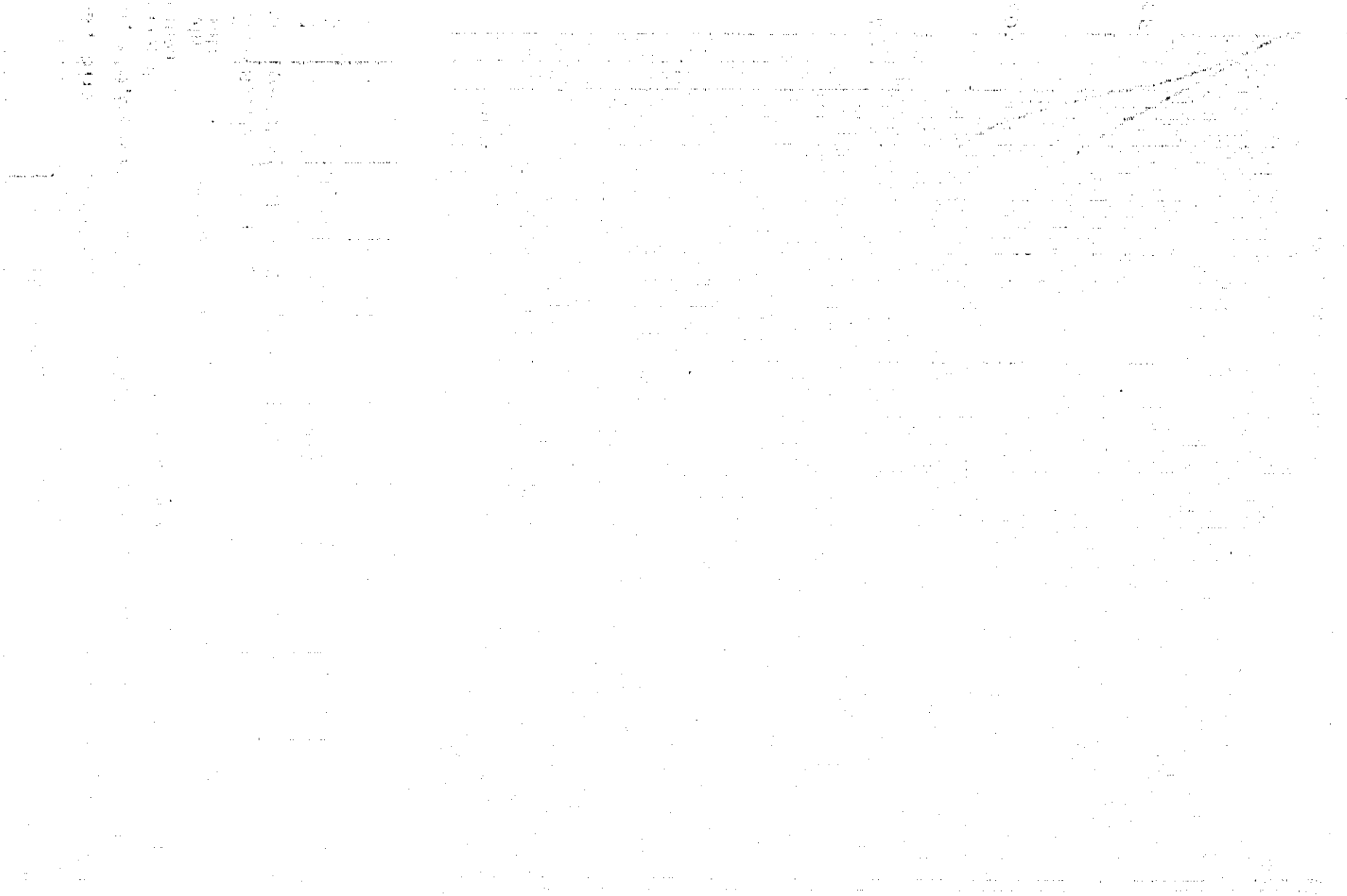
Specimen No 4

Specimen No

Specimen No

Specimen No





JIS A 1204	Method of Grain-Size Analysis of Soils	Report Form

Job Site: PORT / IRENE Date: 6-23-81

Sample No, Depth: No. BH-3 (5.0 ~ 5.45m) Technician: N. Prado

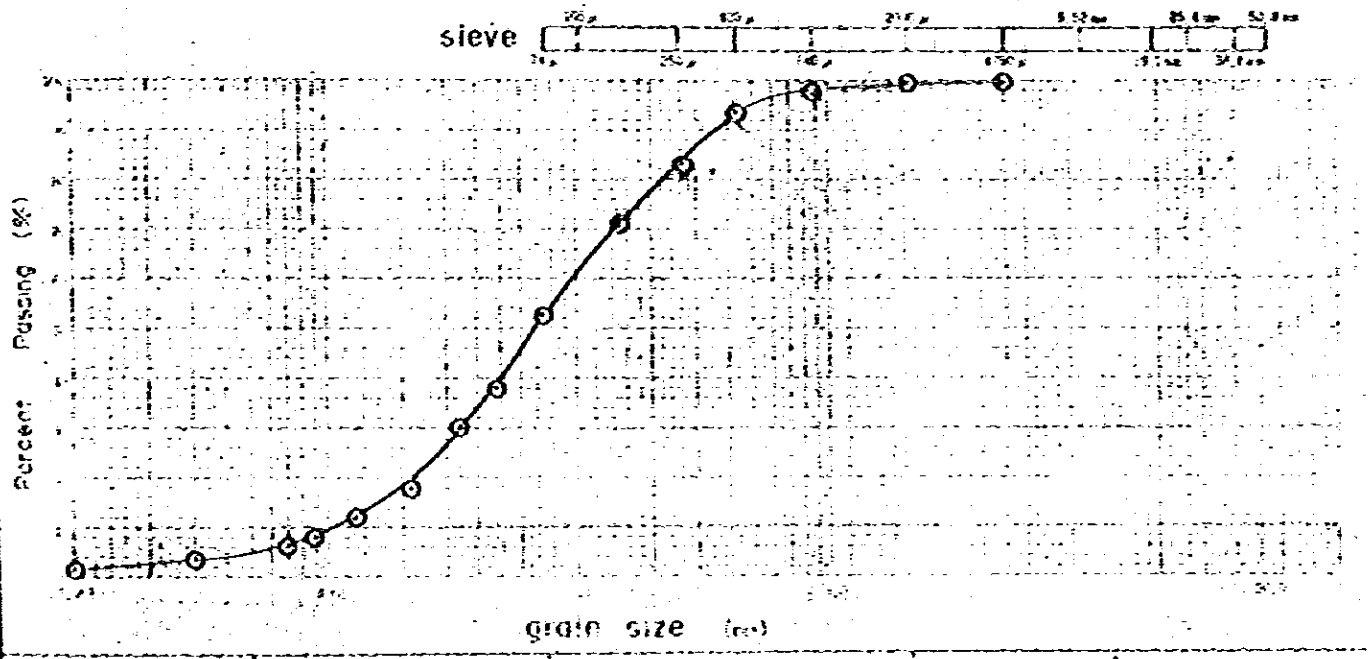
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-3 (5.0 m-5.45 m) Gs: 2.61

Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Weight percent %						100	99.1	97.9	93.9	83.9	71.5	53.8
Grain size mm	.048	.034	.022	.013	.009	.007	.003	.001				
Weight percent %	38.3	30.3	18.2	12.1	8.1	6.1	4.0	2.0				

Sample No, Depth: (m ~ m) Gs:

Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Weight percent %												
Grain size mm												
Weight percent %												



Sample No, Depth	No. BH-3 5.0 m~5.45 m	No. m~ m
Grain size 4.76mm and larger	0 %	%
Grain size 4.76 ~ 2mm	0.9 %	%
Grain size 2 ~ 0.42mm	5.2 %	%
Grain size 0.42~0.074mm	40.1 %	%
Grain size 0.074~0.005mm	48.8 %	%
Grain size finer than 0.005mm	3.0 %	%
Coagulation 0.005mm	2.0 %	%
Percent passing 2.00mm sieve	99.1 %	%
Percent passing 0.42mm sieve	93.9 %	%
Percent passing 0.074mm sieve	53.8 %	%

Sample No, Depth	No. BH-3 5.0 m~5.45 m	No. m~ m
Max. grain size	4.76 mm	mm
60 % grain size	.1 mm	mm
30 % grain size	.034 mm	mm
10 % grain size	.01 mm	mm
Coefficient of uniformity	10.0	
Coefficient of curvature	1.2	

JIS A 1204 | Method of Grain – Size Analysis of Soils | Report Form

Job Site PORT (/ IRENE Date 6-23-91

Sample No, Depth No. BH-3 (9.0m ~ 9.60m) Technician N. Prado

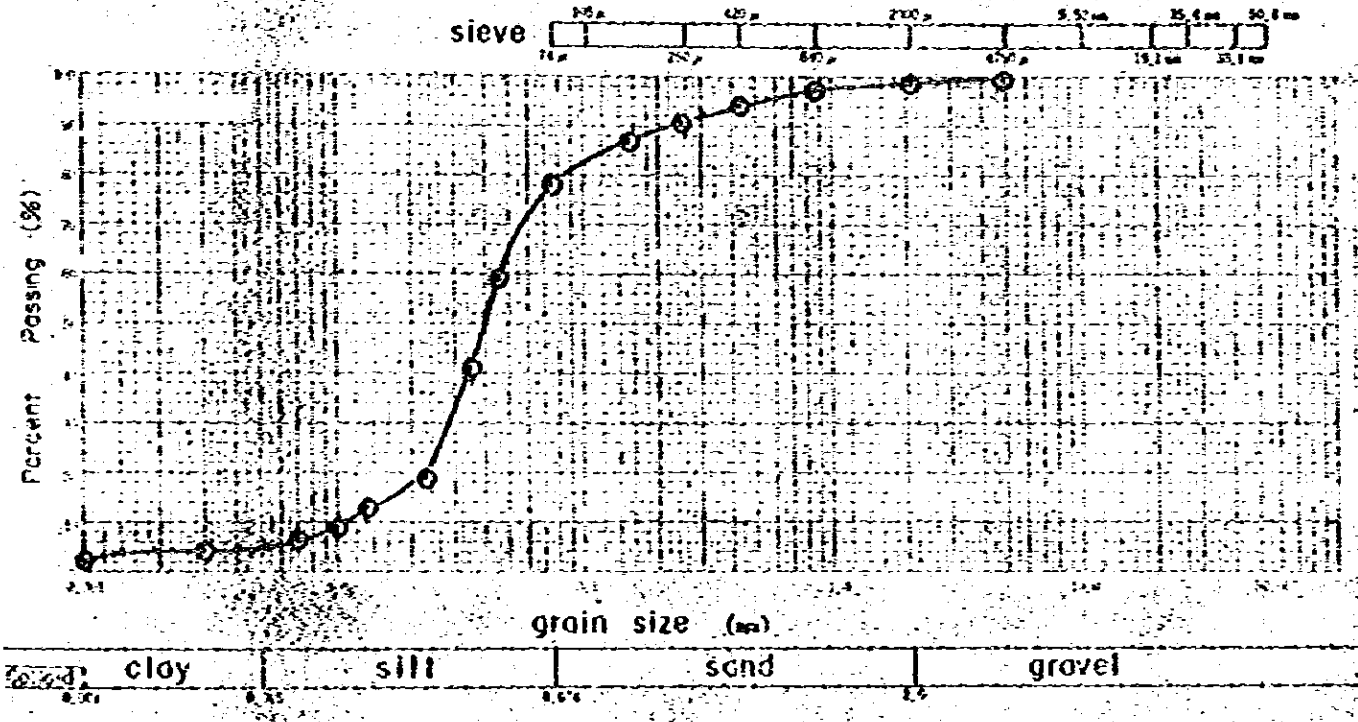
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth BH-3 (9.0 m ~ 9.60 m) Gs 2.69

sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %						100	99.7	97.7	94.3	91.3	87.1	78.1
hydrometer	Grain size mm	.048	.034	.023	.013	.010	.007	.003	.001				
	Weight percent %	59.1	41.6	18.7	12.5	8.3	6.2	4.1	2.1				

Sample No., Depth (m ~ m) Gs

sieve	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	Weight percent %												
hydrometer	Grain size mm												
	Weight percent %												



Sample No, Depth	No. BH-3 9.0 m ~ 9.45 m	No. m ~ m	Sample No, Depth	No. BH-3 9.0 m ~ 9.45 m	No. m ~ m
Grains in 4.76mm and larger	0 %	%	Max. grain size	4.76 mm	mm
Grains in 4.76 ~ 2mm	0.3 %	%	60 % (grain size)	.047 mm	mm
Grains in 2 ~ 0.42mm	5.4 %	%	30 % (grain size)	.028 mm	mm
Grains in 0.42 ~ 0.074mm	16.2 %	%	10 % (grain size)	.011 mm	mm
Silt in 0.074 ~ 0.005mm	73.1 %	%	Coefficient of uniformity	4.3	
Clays less than 0.005mm	2.9 %	%	Coefficient of curvature	1.5	
Colloid less than 0.001mm	2.1 %	%			
Percent by weight passing through 2.00mm sieve	99.7 %	%			
Percent by weight passing through 0.42mm sieve	94.3 %	%			
Percent by weight passing through 0.074mm sieve	78.1 %	%			

JIS A 1204 | Method of Grain – Size Analysis of Soils | Report Form

Job Site: PORT IRENE | Date: 6-23-81

Sample No., Depth: No. BH-3 (12.0m ~ 12.45m) | Technician: N. Prado

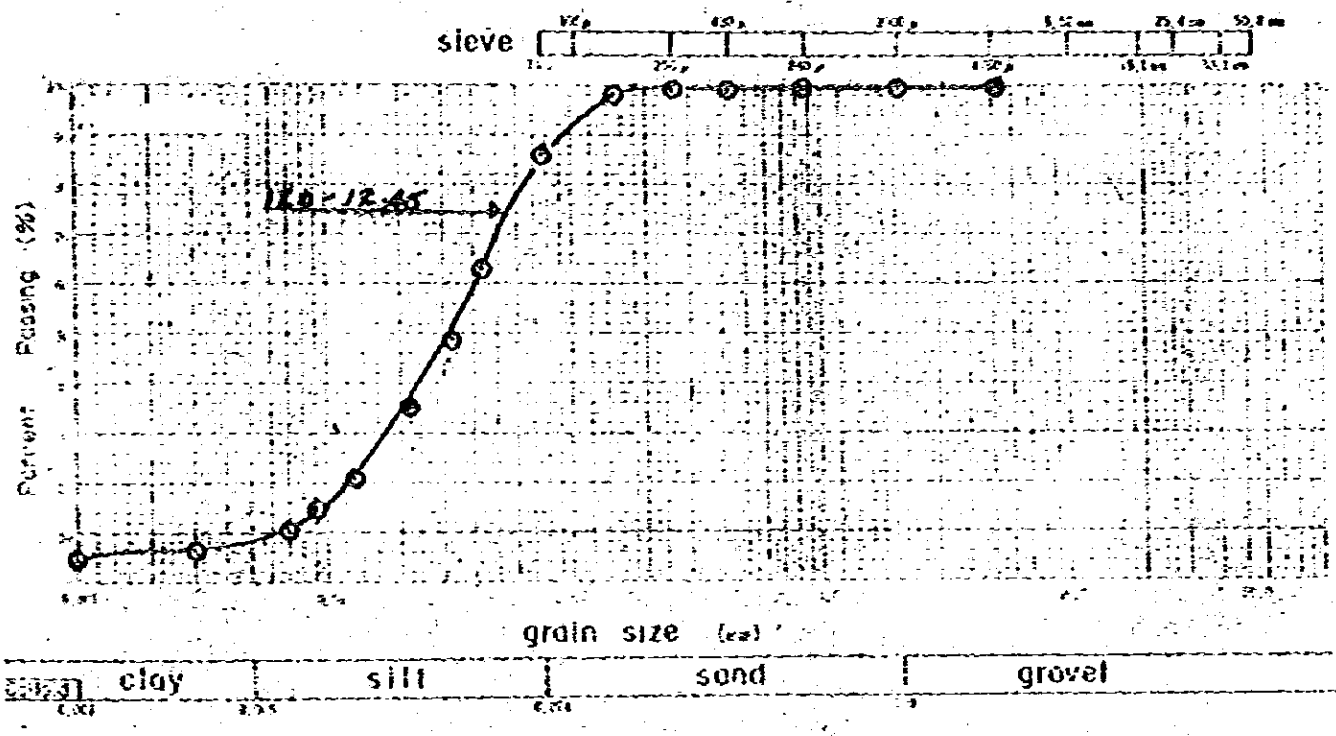
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-3 (12.0m ~ 12.45m) Gs: 2.55

Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Weight percent %						100	99.7	99.5	99.2	98.9	98.7	86.1
Grain size mm	.044	.033	.022	.013	.009	.007	.003	.001				
Weight percent %	63.6	49.2	35.1	20.5	14.4	10.3	6.2	4.1				

Sample No., Depth: (m ~ m) Gs

Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Weight percent %												
Grain size mm												
Weight percent %												



Sample No., Depth	No. BH-3 12.0~12.45	No. m~m	Sample No., Depth	No. BH-3 12.0 m 12.45	No. m~m
Gravel (4.76mm and larger)	0 %	%	Max. grain size	4.76 mm	mm
Gravel (4.76 ~ 2mm)	0.3 %	%	60 %(grain size)	.041 mm	mm
Gravel (2 ~ 0.42mm)	0.5 %	%	30 %(grain size)	.017 mm	mm
Sand (0.42~0.074mm)	13.1 %	%	10 %(grain size)	.0063 mm	mm
Silt (0.074~0.005 mm)	78.1 %	%	Coefficient of uniformity	6.5	
Clay less than 0.005mm	3.9 %	%	Coefficient of curvature	1.12	
Colloid less than 0.001mm	4.1 %	%			
Gravel (4.76mm and larger) + sand (2.00 ~ 0.074mm)	99.7 %	%			
Gravel (4.76mm and larger) + sand (2.00 ~ 0.074mm) + silt (0.074 ~ 0.005mm)	99.2 %	%			
Gravel (4.76mm and larger) + sand (2.00 ~ 0.074mm) + silt (0.074 ~ 0.005mm) + clay less than 0.005mm	86.1 %	%			

JIS A 1204	Method of Grain-Size Analysis of Soils	Report Form

Job Site: PORT IRENE Date: 6-23-81

Sample No, Depth: No. BH-3 (16.0m ~ 16.45m) Technician: N. Prado

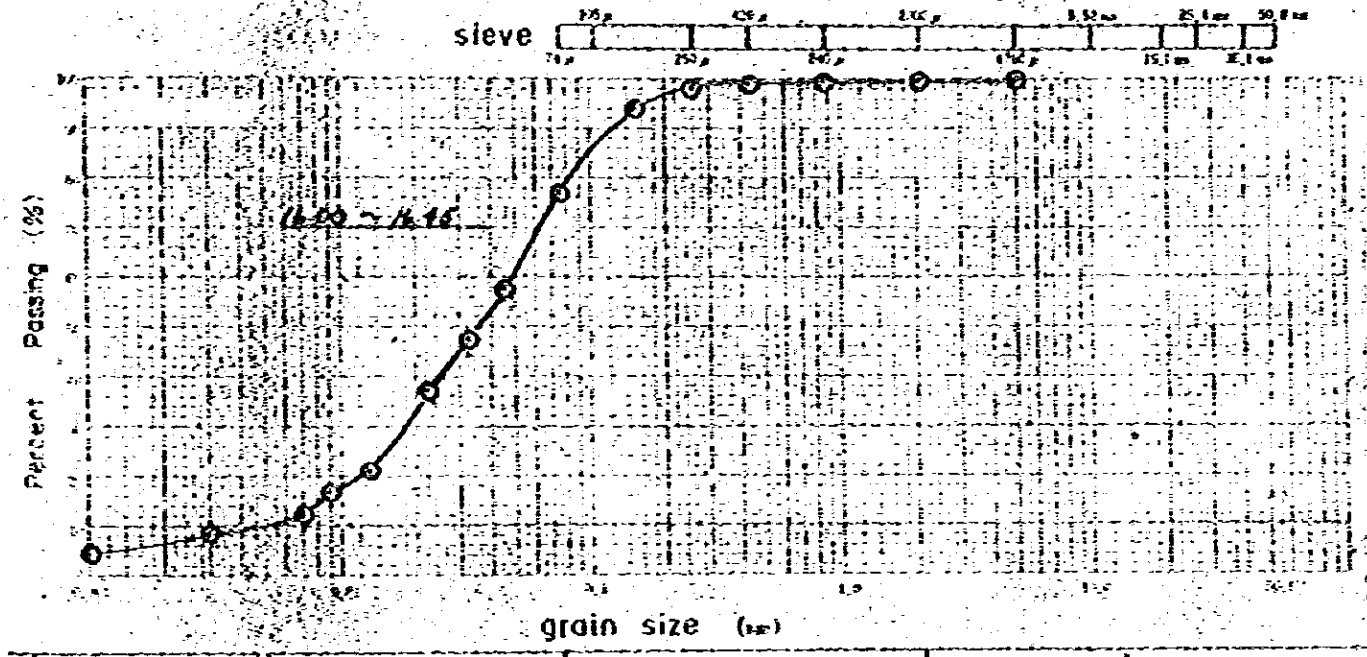
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth: BH-3 (16.0m ~ 16.45m) Gs: 2.5/4

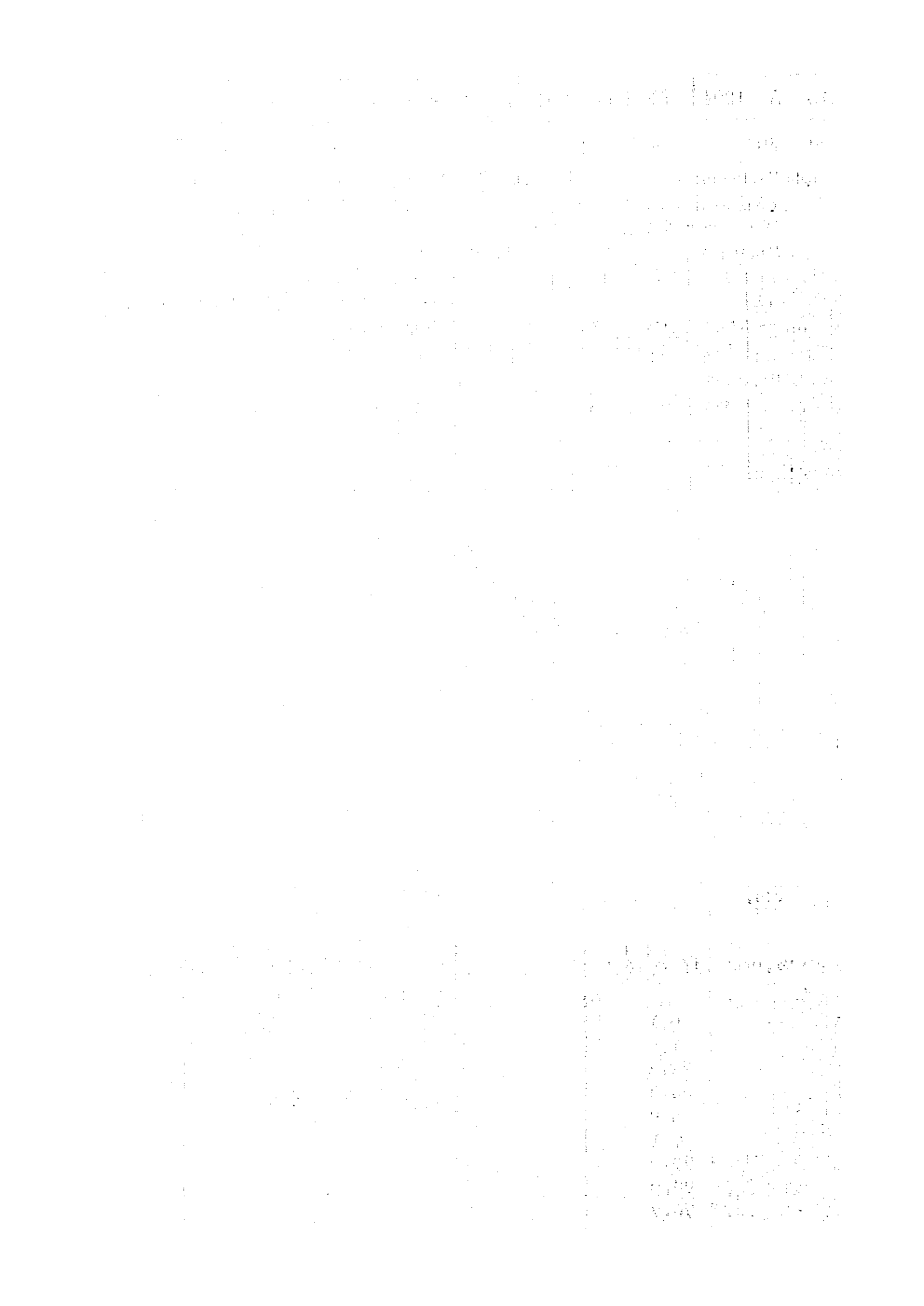
	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
sieve	Weight percent %						100	99.9	99.4	98.9	98.2	94.9	76.7
hydrometer	Grain size mm	.045	.033	.022	.013	.009	.007	.003	.001				
	Weight percent %	57.5	47.3	37.0	20.6	16.4	12.3	8.2	4.1				

Sample No., Depth: (m ~ m) Gs

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
sieve	Weight percent %												
hydrometer	Grain size mm												
	Weight percent %												



Sample No, Depth	No. BH-3 16.0-16.45	No. m ~ m	Sample No, Depth	No. BH-3 16.0m ~ 16.45	No. m ~ m
Grains in 4.76mm and larger	0.1 %	%	Max. grain size	4.76 mm	mm
Grains in 4.76 ~ 2mm	0.1 %	%	60 %(grain size)	.05 mm	mm
Grains in 2 ~ 0.42mm	1.0 %	%	30 %(grain size)	.018 mm	mm
Grains in 0.42 ~ 0.074mm	22.2 %	%	10 %(grain size)	.005 mm	mm
Silt in 0.074 ~ 0.006mm	66.7 %	%	Coefficient of uniformity	10.0	
Clays less than 0.006mm	5.9 %	%	Coefficient of curvature	1.3	
Colloid less than 0.001mm	4.1 %	%			
Percent by weight passing through 2.00m sieve	99.9 %	%			
Percent by weight passing through 420μ sieve	98.9 %	%			
Percent by weight passing through 74μ sieve	76.7 %	%			



JIS A 1204	Method of Grain-Size Analysis of Soils	Report Form

Job Site PORT / IRENE Date 6-23-81

Sample No., Depth: No. BH-3 (20.0m-20.45m) Technician N. Prado

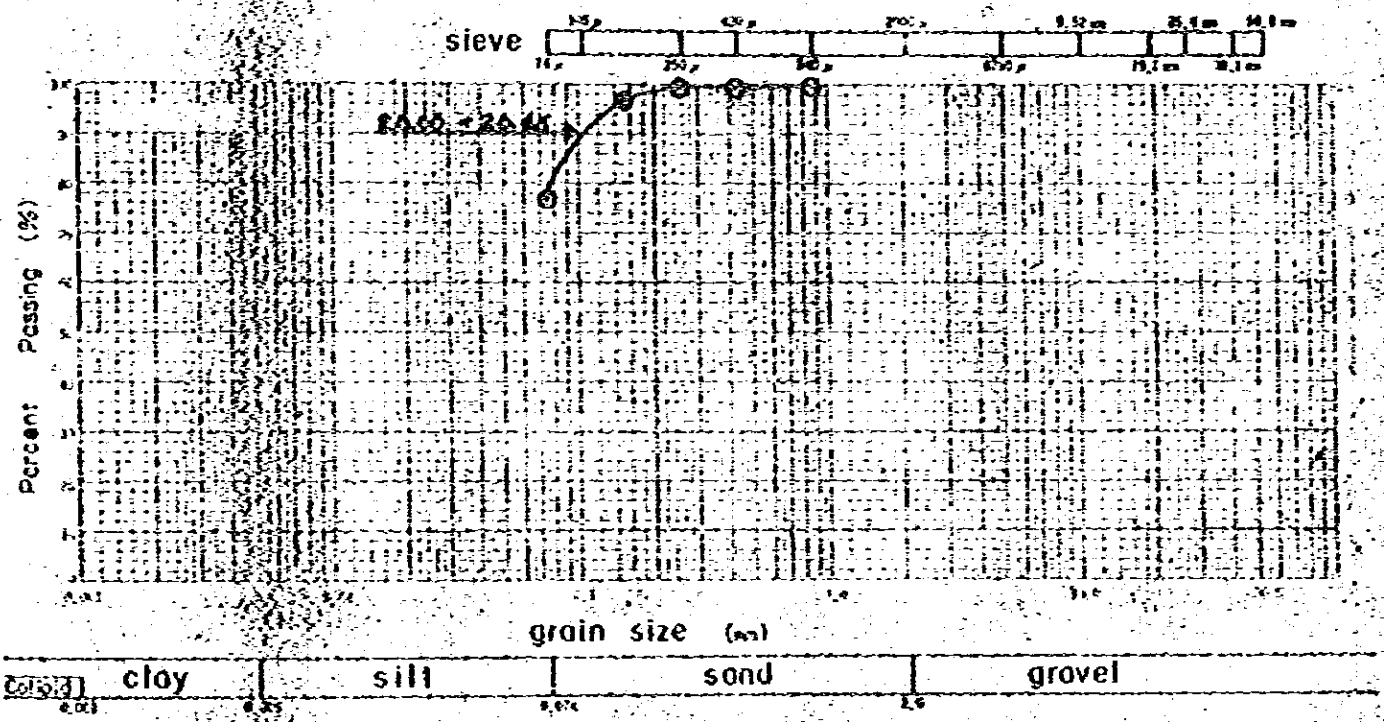
Table of relationship between grain-size used for illustrating grain-size accumulation curve and weight percent of total passing

Sample No., Depth BH-3 (20.0m-20.45m) Gs

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Sieve	Weight percent %								100	99.7	99.4	96.4	77.2
Hydrometer	Grain size mm												
	Weight percent %												

Sample No., Depth (m ~ m) Gs

	Grain size mm	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
Sieve	Weight percent %												
Hydrometer	Grain size mm												
	Weight percent %												



Sample No., Depth	No. BH-3 20.0m~20.45m		No. m~ m		Sample No., Depth	No. BH-3 20.0m~20.45m		No. m~ m	
Grains in 4.76mm and larger	0	%		%	Max. grain size	0.84	mm		mm
Grains in 4.75 ~ 2mm	0	%		%	60 % grain size		mm		mm
Grains in 2 ~ 0.42mm	0.3	%		%	30 % grain size		mm		mm
Grains in 0.42~0.074mm	22.5	%		%	10 % grain size		mm		mm
Silt in 0.074~0.005mm	77.2	%		%	Coefficient of uniformity				
Clays less than 0.005mm	0	%		%	Coefficient of curvature				
Colloid less than 0.001mm	0	%		%					
Percent by weight passing through 2.00m sieve	100	%		%					
Percent by weight passing through 0.42m sieve	99.7	%		%					
Percent by weight passing through 0.74m sieve	77.2	%		%					