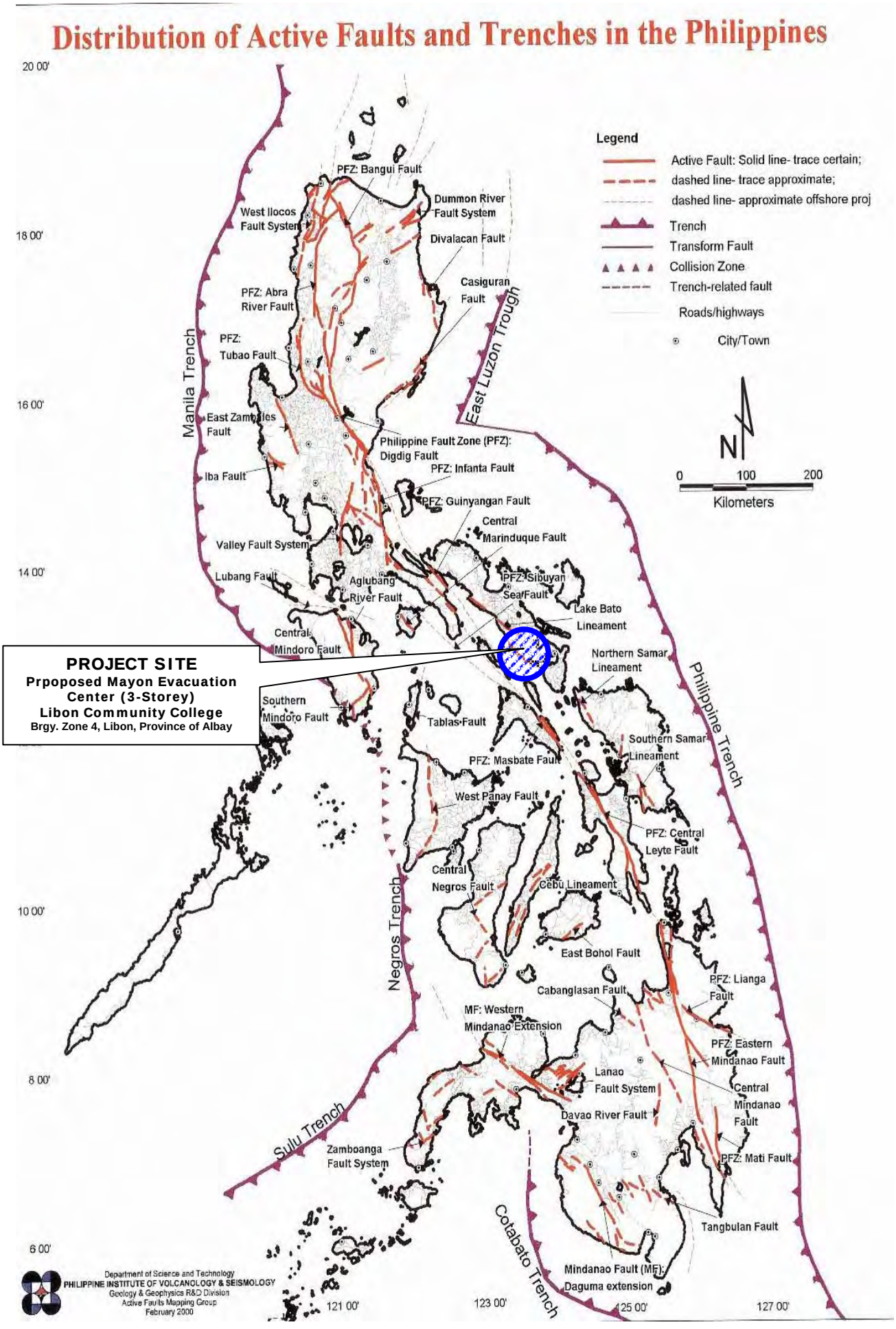
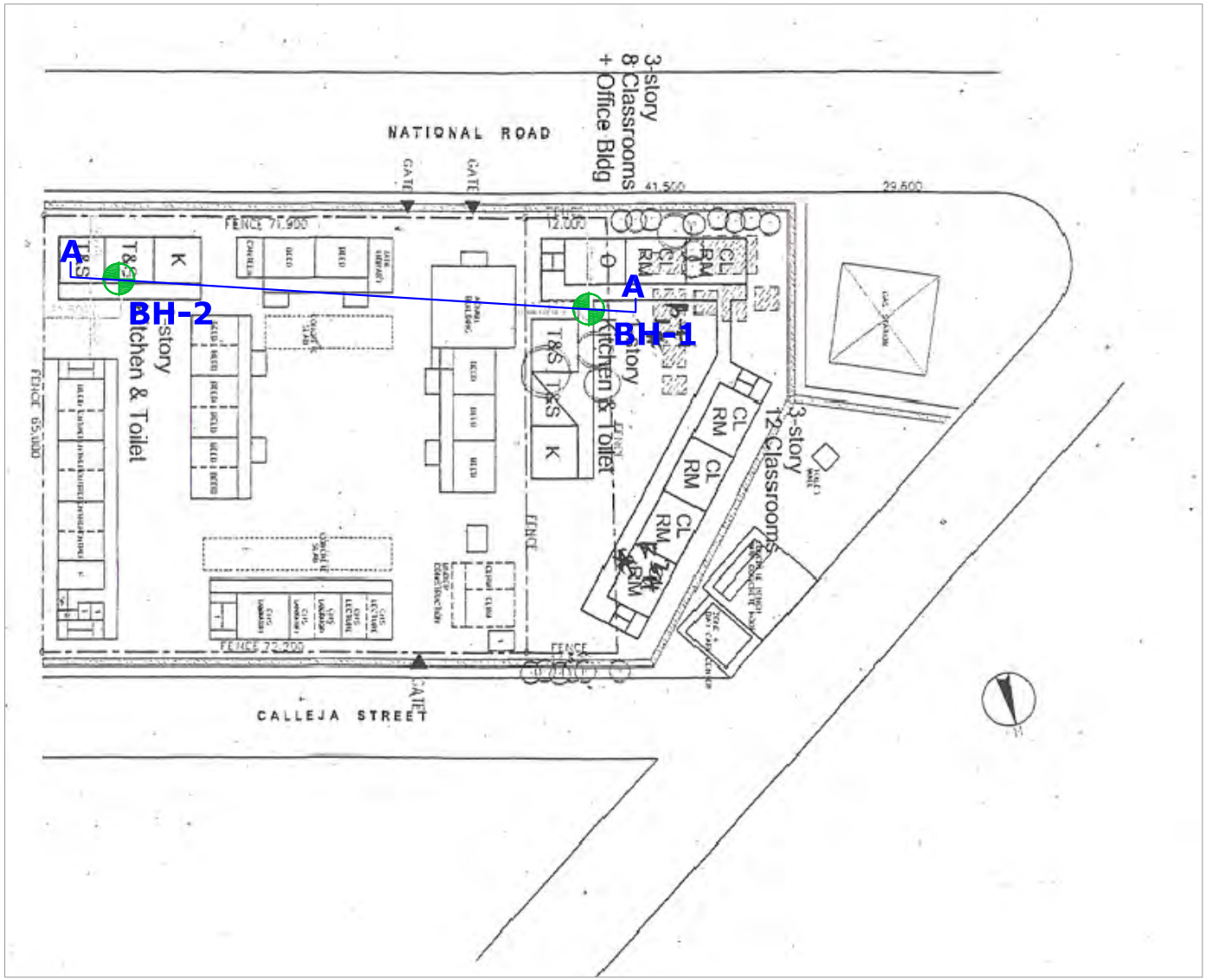
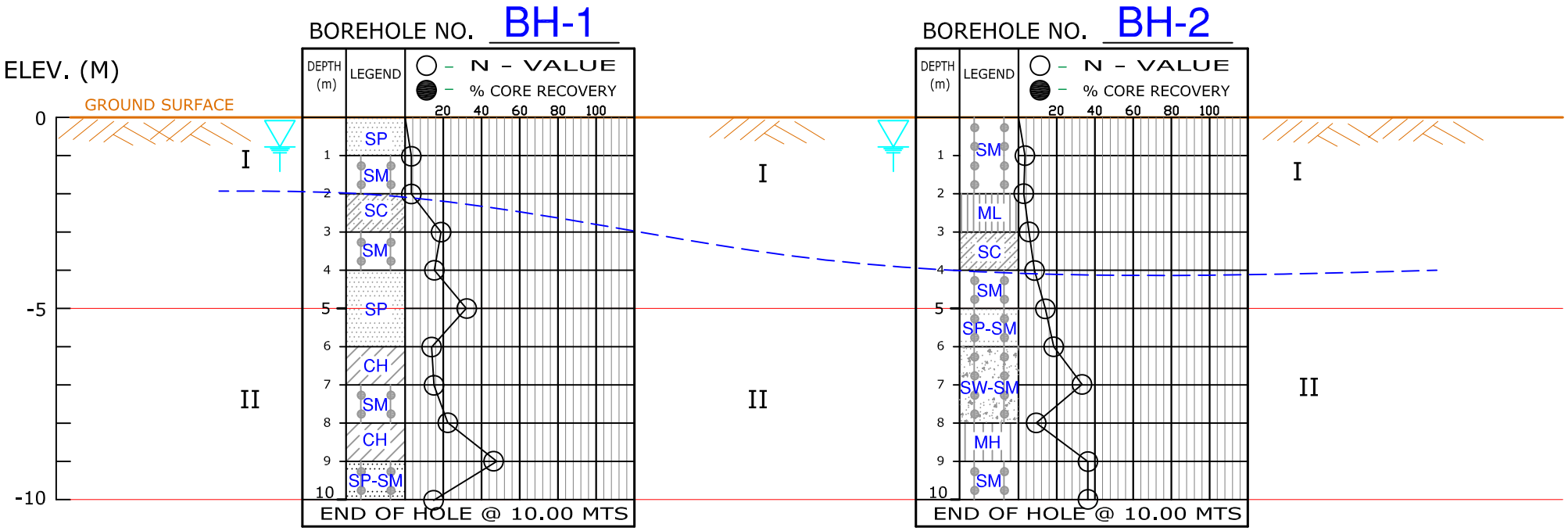
APPENDICES


Distribution of Active Faults and Trenches in the Philippines
Legend
Active Fault: Solid line- trace certain;
dashed line- trace approximate;
dashed line- approximate offshore proj
Trench
Transform Fault
Collision Zone
Trench-related fault
Roads/highways
City/Town
N
0
100
200
Kilometers
PROJECT SITE
Prpoposed Mayon Evacuation Center (3-Storey)
Libon Community College
Brgy. Zone 4, Libon, Province of Albay
PFZ: Bangui Fault
West Ilocos Fault System
Dummon River Fault System
Divalacan Fault
Casiguran Fault
PFZ: Abra River Fault
PFZ: Tubao Fault
East Zambales Fault
Philippine Fault Zone (PFZ): Digdig Fault
PFZ: Infanta Fault
PFZ: Guinyangan Fault
Central Marinduque Fault
Iba Fault
Valley Fault System
Lubang Fault
Aglubang River Fault
PFZ: Sibuyan Sea Fault
Lake Bato Lineament
Central Mindoro Fault
Northern Samar Lineament
Southern Mindoro Fault
Tablas Fault
Southern Samar Lineament
PFZ: Masbate Fault
West Panay Fault
PFZ: Central Leyte Fault
Central Negros Fault
Cebu Lineament
East Bohol Fault
Cabanglasan Fault
PFZ: Lianga Fault
MF: Western Mindanao Extension
PFZ: Eastern Mindanao Fault
Lanao Fault System
Central Mindanao Fault
Davao River Fault
Zamboanga Fault System
PFZ: Mati Fault
Tangbulan Fault
Mindanao Fault (MF): Daguma extension
Manila Trench
East Luzon Trough
Philippine Trench
Negros Trench
Sulu Trench
Cotabato Trench
20 00'
18 00'
16 00'
14 00'
10 00'
8 00'
6 00'
121 00'
123 00'
125 00'
127 00'
Department of Science and Technology
PHILIPPINE INSTITUTE OF VOLCANOLOGY & SEISMOLOGY
Geology & Geophysics R&D Division
Active Faults Mapping Group
February 2000



VICINITY MAP

CONTRACTOR **GEOTECHNICS PHILIPPINES, INC.** 119 SAUYO ROAD, NOVALICHES, QUEZON CITY	PROJECT TITLE **Proposed Mayon Evacuation Center (Libon Community College)** Brgy. Zone 4 Libon, Province of Albay	SCALE NTS	SHEET CONTENTS **LOCATION PLAN/VICINITY MAP**	JOB NO. **2209-10.R1**
			CLIENT **MOHRI, ARCHITECT & ASSOCIATES, INC.**	SHEET NO. 1/1



SECTION A - A

L E G E N D :

- CH - Silty C L A Y
- CL - Sandy C L A Y
- MH - Clayey S I L T
- ML - Sandy S I L T
- SC - Clayey S A N D
- SM - Silty S A N D
- GM - Silty G R A V E L
- SC-SM - Clayey silty S A N D
- SP - Poorly graded SAND
- SW - Well graded SAND
- SP-SM - Poorly graded SAND w/ silt
- SW-SM - Well graded SAND w/ silt
- GP - Poorly graded GRAVEL
- GW - Well graded GRAVEL
- GP-GM - Poorly graded GRAVEL w/ silt
- GW-GM - Well graded GRAVEL w/ silt
- SD - SANDSTONE
- GC-GM - Clayey silty GRAVEL
- COBBLES
- GVL - GRAVEL
- SILTSTONE
- Silty TUFF
- Sandy TUFF
- SHALE

I - N-VALUE<10 (LIQUEFIABLE ZONE)
II - N-VALUE>10
III - REFUSAL (WEATHERED ZONE)
IV - CORING / HARD FORMATION

CONTRACTOR
GEOTECHNICS PHILIPPINES, INC.
119 SAUYO ROAD, NOVALICHES, QUEZON CITY

PROJECT TITLE:
Proposed Mayon Evacuation Center (Libon Community College)
Brgy. Zone 4 Libon, Province of Albay

SHEET CONTENTS:
S O I L P R O F I L E
SCALE : N. T. S.

CLIENT:
MOHRI, ARCHITECT & ASSOCIATES, INC.

DRAWN BY:
MARIA ANTONIETTE P. CUNAHAP

CHECKED BY:
A. B. A. / M. R. R.

CERTIFIED BY:
AUTHORIZED SIGNATORY

JOB NO.
2209-10.R1

SHEET NO.
1/1

GEOTECHNICS PHILIPPINES, INCORPORATED

SOILS AND MATERIALS TESTING LABORATORY

119 SAUYO ROAD, NOVALICHES, QUEZON CITY
TEL. NO. 938-2124 \ 456-1140 \ 930-6555

DPWH-BRS Accredited

CLIENT	**MOHRI, ARCHITECT & ASSOCIATES, INC.**		BOREHOLE NO. **BH- 1**
PROJECT	**Proposed Mayon Evacuation Center (Libon Community College)**		JOB NO. 2209-10.R1-FBL-01
LOCATION	Brgy. Zone 4 Libon, Province of Albay	DRILLED R. POLIDAN	SHEET 1 of 1
RIG	KSK SMALL	LOGGED R. POLIDAN	0.00 to 10.00 meters
	Hammer Weight 63.50 Kg.	DATE STARTED Oct. 16, 2010	GROUND LEVEL - m.
	Fall Height 76.20 cm.	DATE COMPLETED Oct. 16, 2010	WATER LEVEL 0.75 m.
METHOD	WASH BORING	NORTHING -	EASTING -

FINAL BORING LOG

DEPTH (m)	SOIL SYMBOL	SAMPLE NUMBER	TYPE OF SAMPLING	REC (cm)	RQD (%)	PL NMC LL (20 40 60 80 100)	PI	CONSISTENCY	N-VALUE (0 20 40 60 80 100) / % Core Recovery	SOIL DESCRIPTION	OTHER TEST DATA
1.00		S-1	SPT	45	-		NP	VERY LOOSE	4	(SP) Poorly graded SAND with traces of gravel; dark gray; dry NB: (2)(2)(2)	
2.00		S-2	SPT	45	-		NP		4	(SM) Silty SAND fine to medium grained; dark gray; moist NB: (3)(2)(2)	
3.00		S-3	SPT	45	-		8	MEDIUM DENSE	18	(SC) Clayey SAND with traces of gravel; dark gray; very moist NB: (6)(8)(10)	
4.00		S-4	SPT	42	-		NP		15	(SM) Silty SAND fine to coarse grained with traces of gravel; dark gray; moist NB: (5)(6)(9)	
5.00		S-5	SPT	39	-		NP	DENSE	32	(SP) Poorly graded SAND with fine to coarse gravel; dark gray; moist NB: (10)(15)(17)	
6.00		S-6	SPT	45	-		NP	MEDIUM DENSE	14	....with fine gravel NB: (8)(7)(7)	
7.00		S-7	SPT	45	-		37	STIFF	15	(CH) Fat CLAY with few sand; dark gray; very moist NB: (3)(5)(10)	
8.00		S-8	SPT	37	-		NP	MEDIUM DENSE	23	(SM) Silty SAND fine to coarse grained with traces of gravel; dark gray; very moist NB: (6)(9)(14)	
9.00		S-9	SPT	45	-		38	HARD	46	(CH) Fat CLAY with few sand; dark gray; very moist NB: (16)(19)(27)	
10.00		S-10	SPT	45	-		NP	MEDIUM DENSE	15	(SP-SM) Poorly graded SAND with silt; dark gray; moist NB: (12)(6)(9) END OF BORING AT 10.00 METERS	

Type of Sampling

- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING (CRG)

Type of Soil

- Silty CLAY
- Clayey SILT
- Clayey SAND
- Silty SAND
- Clayey silty SAND
- SAND
- Silty GRAVEL
- Well graded GRAVEL with silt
- GRAVEL
- SILTSTONE
- TUFF
- Tuffeceous SILTSTONE

CONSISTENCY

COHESIVE SOILS		COHENSIONLESS SOILS	
N-VALUE	CONSISTENCY	N-VALUE	CONSISTENCY
0 - 2	VERY SOFT	0 - 4	VERY LOOSE
2 - 4	SOFT	4 - 10	LOOSE
4 - 8	FIRM	10 - 30	MEDIUM DENSE
8 - 15	STIFF	30 - 50	DENSE
15 - 30	VERY STIFF	> 50	VERY DENSE
> 30	HARD		

MOISTURE

MOISTURE CONTENT	
RANGES	VALUES
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
> 100	SATURATED

PERCENTAGE

% of SAND and GRAVEL	
RANGES	VALUES
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

REMARKS: Rec = Recovery in Centimeters NB = No. of Blows HW = Hammer Weight

Reference Joint Spacing: #1 >30cm. 10 cm. >#3>3cm. #5 <1cm.

30 cm.>#2>10cm. 3 cm. >#4>1cm.

RQD = Rock Quality Designation SCR = Solid Core Recovery

Description of Strata is according to Unified Soil Classification System

Prepared by : **M. P. CUNAHAP**

Checked by : **A.B.A. / M.R.R.**

Certified by :

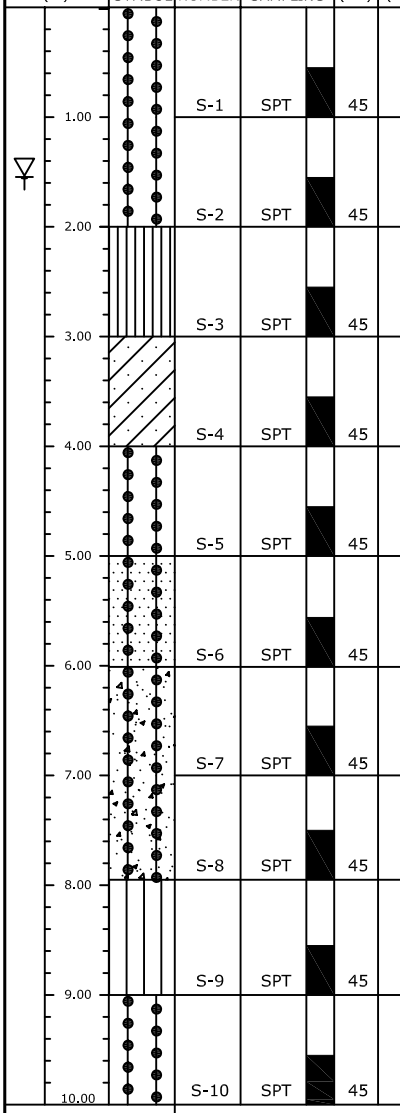
AUTHORIZED SIGNATORY

Date Issued :

GEOTECHNICS PHILIPPINES, INCORPORATED
SOILS AND MATERIALS TESTING LABORATORY
119 SAUYO ROAD, NOVALICHES, QUEZON CITY
TEL. NO. 938-2124 \ 456-1140 \ 930-6555
DPWH-BRS Accredited

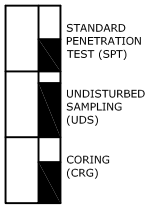
CLIENT	**MOHRI, ARCHITECT & ASSOCIATES, INC.**		BOREHOLE NO. **BH- 2**
PROJECT	**Proposed Mayon Evacuation Center (Libon Community College)**		JOB NO. 2209-10.R1-FBL-02
LOCATION	Brgy. Zone 4 Libon, Province of Albay	DRILLED R. POLIDAN	SHEET 1 of 1
RIG	KSK SMALL	LOGGED R. POLIDAN	0.00 to 10.00 meters
	Hammer Weight 63.50 Kg.	DATE STARTED Oct. 16, 2010	GROUND LEVEL - m.
	Fall Height 76.20 cm.	DATE COMPLETED Oct. 16, 2010	WATER LEVEL 1.57 m.
METHOD	WASH BORING	NORTHING -	EASTING -

FINAL BORING LOG

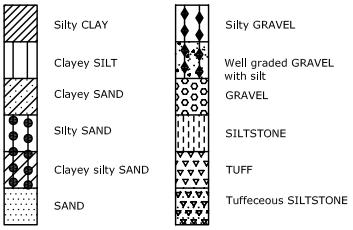


DEPTH (m)	SOIL SYMBOL	SAMPLE NUMBER	TYPE OF SAMPLING	REC (cm)	RQD (%)	PI	CONSISTENCY	N-VALUE	SOIL DESCRIPTION	OTHER TEST DATA
1.00		S-1	SPT	45	-	NP	VERY LOOSE	3	(SM) Silty SAND fine to medium grained; dark gray; moist NB: (2)(2)(1)	
2.00		S-2	SPT	45	-	NP		2	....fine to coarse grained with traces of gravel NB: (2)(1)(1)	
3.00		S-3	SPT	45	-	16	FIRM	6	(ML) Sandy SILT; dark gray; very moist NB: (5)(3)(3)	
4.00		S-4	SPT	45	-	11	LOOSE	8	(SC) Clayey SAND with traces of gravel; dark gray; very moist NB: (10)(5)(3)	
5.00		S-5	SPT	45	-	NP	MEDIUM DENSE	13	(SM) Silty SAND fine to coarse grained with traces of gravel; dark gray; very moist NB: (9)(8)(5)	
6.00		S-6	SPT	45	-	NP		18	(SP-SM) Poorly graded SAND with silt and traces of gravel; dark gray; moist NB: (10)(9)(9)	
7.00		S-7	SPT	45	-	NP	DENSE	32	(SW-SM) Well graded SAND with few gravel; dark gray; moist NB: (13)(15)(17)	
8.00		S-8	SPT	45	-	NP	LOOSE	9	....with traces of gravel NB: (6)(5)(4)	
9.00		S-9	SPT	45	-	26	HARD	36	(MH) Elastic SILT with some sand; dark gray; very moist NB: (15)(17)(19)	
10.00		S-10	SPT	45	-	NP	DENSE	36	(SM) Silty SAND fine to coarse grained with traces of gravel; dark gray; moist NB: (14)(16)(20)	
									END OF BORING AT 10.00 METERS	

Type of Sampling



Type of Soil



CONSISTENCY

COHESIVE SOILS N-VALUE	CONSISTENCY	COHENSIONLESS SOILS N-VALUE	CONSISTENCY
0 - 2	VERY SOFT	0 - 4	VERY LOOSE
2 - 4	SOFT	4 - 10	LOOSE
4 - 8	FIRM	10 - 30	MEDIUM DENSE
8 - 15	STIFF	30 - 50	DENSE
15 - 30	VERY STIFF	> 50	VERY DENSE
> 30	HARD		

MOISTURE

MOISTURE CONTENT RANGES	VALUES
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
> 100	SATURATED

PERCENTAGE

% of SAND and GRAVEL RANGES	VALUES
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

REMARKS: Rec = Recovery in Centimeters NB = No. of Blows HW = Hammer Weight

Reference Joint Spacing: #1 >30cm. 10 cm. >#3>3cm. #5 <1cm.

30 cm.>#2>10cm. 3 cm. >#4>1cm.

RQD = Rock Quality Designation SCR = Solid Core Recovery

Description of Strata is according to Unified Soil Classification System

Prepared by : **M. P. CUNAHAP**
Checked by : **A.B.A. / M.R.R.**
Certified by :
AUTHORIZED SIGNATORY
Date Issued :

GEOTECHNICS PHILIPPINES, INC.
SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

CLIENT..... **MOHRI, ARCHITECT & ASSOCIATES, INC.** JOB NUMBER..... 2209-10.R1-SUM-1
PROJECT..... **Proposed Mayon Evacuation Center (Libon Community College)** DATE OF RECIEPT.... October 19, 2010
LOCATION.... Brgy. Zone 4 Libon, Province of Albay DATE OF TEST..... October 21-28, 2010

SUMMARY OF LABORATORY TESTS

SAMPLE NUMBER	DEPTH (m)	NMC (%)	ATTERBERG LIMIT, (%)			USCS Class.	SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										Remarks
			LL	PL	PI		1	3/4	3/8	4	10	20	40	60	140	200	
BH-1																	
1	0.55 - 1.00	9	-	NP	-	SP			100	95	83	63	33	12	5	3	-
2	1.55 - 2.00	29	-	NP	-	SM				100	97	90	74	56	21	14	-
3	2.55 - 3.00	36	40	32	8	SC		100	98	97	94	85	75	65	47	45	-
4	3.55 - 4.00	30	-	NP	-	SM			100	96	91	81	57	34	18	16	-
5	4.55 - 5.00	17	-	NP	-	SP	100	83	70	60	52	40	25	11	3	2	-
6	5.55 - 6.00	21	-	NP	-	SP		100	75	58	46	34	21	12	5	4	-
7	6.55 - 7.00	59	69	32	37	CH					100	99	98	96	91	90	-
8	7.55 - 8.00	35	-	NP	-	SM			100	99	98	96	87	73	30	24	-
9	8.55 - 9.00	60	70	32	38	CH						100	99	97	94	92	-
10	9.55 - 10.00	23	-	NP	-	SP-SM				100	99	94	54	20	6	5	-
BH-2																	
1	0.55 - 1.00	23	-	NP	-	SM				100	98	95	85	65	30	25	-
2	1.55 - 2.00	23	-	NP	-	SM			100	98	94	84	68	47	27	23	-
3	2.55 - 3.00	40	48	32	16	ML				100	98	93	83	73	62	58	-
4	3.55 - 4.00	39	44	33	11	SC			100	99	98	93	83	70	50	47	-
5	4.55 - 5.00	30	-	NP	-	SM		100	99	98	97	93	84	61	29	24	-
6	5.55 - 6.00	19	-	NP	-	SP-SM			100	99	97	81	42	22	9	7	-
7	6.55 - 7.00	20	-	NP	-	SW-SM			100	93	82	58	31	18	8	7	-
8	7.55 - 8.00	20	-	NP	-	SW-SM		100	99	95	89	73	45	25	11	8	-
9	8.55 - 9.00	50	58	32	26	MH				100	99	97	94	89	73	67	-
10	9.55 - 10.00	28	-	NP	-	SM			100	99	99	98	90	66	28	22	-

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: * with hydrometer

COMPUTER PRINT-OUT
By: *MARIA ANTONIETTE P. CUNAHAP*
Encoder

Data Chkd by: ABA / MRR
Quality Assurance

Date Issued _____

CERTIFIED BY:

AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-01-1
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 21-22, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-1

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
1	0.55-1.00	105.98	98.22	7.76	9.74	88.48	9	
2	1.55-2.00	95.35	76.15	19.20	9.91	66.24	29	
3	2.55-3.00	100.31	76.36	23.95	9.56	66.80	36	
4	3.55-4.00	111.50	88.05	23.45	9.53	78.52	30	
5	4.55-5.00	117.08	101.57	15.51	10.29	91.28	17	
6	5.55-6.00	122.28	102.55	19.73	9.84	92.71	21	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
PLASTIC LIMIT											

Uncertainty Results: Water Content (%) = ± 0.0304 Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-498

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-01-2
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 21-22, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-1

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
7	6.55-7.00	83.18	55.90	27.28	9.82	46.08	59	
8	7.55-8.00	118.20	89.93	28.27	9.53	80.40	35	
9	8.55-9.00	103.70	68.40	35.30	9.58	58.82	60	
10	9.55-10.00	116.13	95.93	20.20	9.42	86.51	23	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
PLASTIC LIMIT											

Uncertainty Results: Water Content (%) = ± 0.0482 Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-498

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-02-1
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 26-27, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-2

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
1	0.55-1.00	110.73	91.53	19.20	9.53	82.00	23	
2	1.55-2.00	123.74	102.59	21.15	9.54	93.05	23	
3	2.55-3.00	117.60	86.96	30.64	9.72	77.24	40	
4	3.55-4.00	105.90	79.03	26.87	9.60	69.43	39	
5	4.55-5.00	122.70	96.31	26.39	9.60	86.71	30	
6	5.55-6.00	103.77	88.73	15.04	9.57	79.16	19	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
PLASTIC LIMIT											

Uncertainty Results: Water Content (%) = ± 0.0295 Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-499

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-02-2
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 26-27, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-2

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
7	6.55-7.00	115.10	97.26	17.84	9.70	87.56	20	
8	7.55-8.00	119.05	101.05	18.00	9.51	91.54	20	
9	8.55-9.00	111.70	77.75	33.95	9.63	68.12	50	
10	9.55-10.00	115.43	91.96	23.47	9.37	82.59	28	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
PLASTIC LIMIT											

Uncertainty Results: Water Content (%) = ± 0.0313 Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-499

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

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PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-01-1
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location.... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 25-26, 2010

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

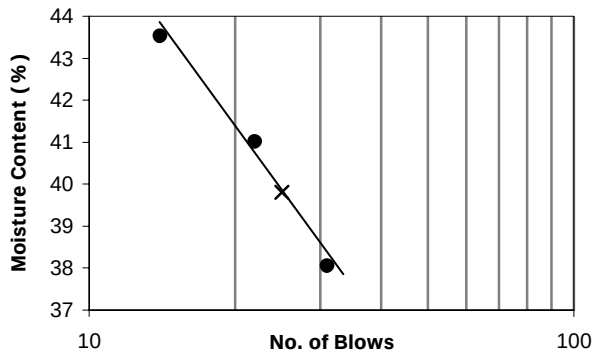
ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-1** DEPTH (m)..... 2.55-3.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-3 USCS CLASS..... SC Clayey SAND

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	A2	A37	A82	B32	B5
WET SOIL + DISH (g)	33.84	35.97	38.16	22.81	22.78
DRY SOIL + DISH (g)	27.17	28.33	29.56	19.59	19.56
WATER (g)	6.67	7.64	8.60	3.22	3.22
DISH MASS (g)	9.64	9.70	9.80	9.53	9.51
DRY SOIL (g)	17.53	18.63	19.76	10.06	10.05
MOISTURE CONTENT	38.05	41.01	43.52	32.01	32.04
NUMBER OF BLOWS	31	22	14	32	

% RETAINED ON 0.425mm 24.63

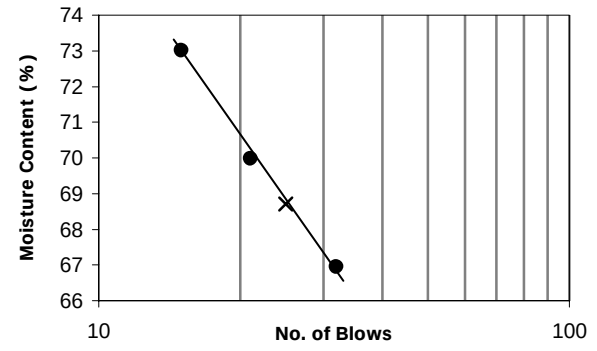


LL = 40 PL = 32 PI = 8

BOREHOLE NO..... **BH-1** DEPTH (m)..... 6.55-7.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-7 USCS CLASS..... CH Fat CLAY

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	B17	B24	B90	C73	C40
WET SOIL + DISH (g)	32.47	35.59	38.24	22.68	22.72
DRY SOIL + DISH (g)	23.31	24.94	26.25	19.52	19.55
WATER (g)	9.16	10.65	11.99	3.16	3.17
DISH MASS (g)	9.63	9.72	9.83	9.55	9.56
DRY SOIL (g)	13.68	15.22	16.42	9.97	9.99
MOISTURE CONTENT	66.96	69.97	73.02	31.70	31.73
NUMBER OF BLOWS	32	21	15	32	

% RETAINED ON 0.425mm 1.78



LL = 69 PL = 32 PI = 37

Uncertainty Results: I Liquid Limit = ± 0.1137 Plastic Limit = ± 0.1994
II Liquid Limit = ± 0.1453 Plastic Limit = ± 0.2010

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-646

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA / MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-01-2
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location.... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 25-26, 2010

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

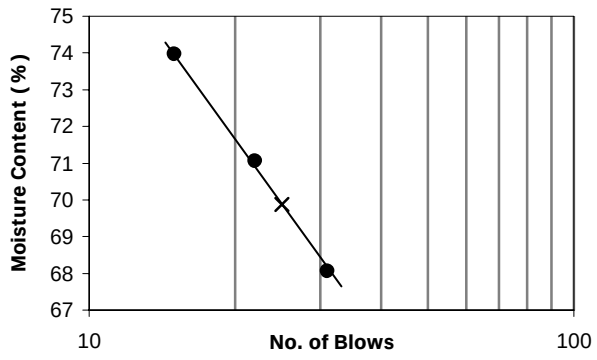
ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-1** DEPTH (m)..... 8.55-9.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-9 USCS CLASS..... CH Fat CLAY

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	A29	A11	A21	B49	B55
WET SOIL + DISH (g)	32.54	35.74	38.40	22.69	22.75
DRY SOIL + DISH (g)	23.27	24.94	26.26	19.48	19.55
WATER (g)	9.27	10.80	12.14	3.21	3.20
DISH MASS (g)	9.65	9.74	9.85	9.52	9.55
DRY SOIL (g)	13.62	15.20	16.41	9.96	10.00
MOISTURE CONTENT	68.06	71.05	73.98	32.23	32.00
NUMBER OF BLOWS	31	22	15	32	

% RETAINED ON 0.425mm 1.09

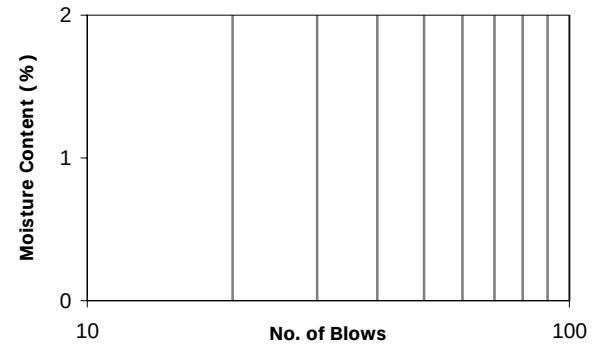


LL = 70 PL = 32 PI = 38

BOREHOLE NO..... DEPTH (m)..... SOIL DESCRIPTION.....
SAMPLE NO..... USCS CLASS.....

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER					
WET SOIL + DISH (g)					
DRY SOIL + DISH (g)					
WATER (g)					
DISH MASS (g)					
DRY SOIL (g)					
MOISTURE CONTENT					
NUMBER OF BLOWS					

% RETAINED ON 0.425mm .....



LL = PL = PI =

Uncertainty Results: I Liquid Limit = ± 0.1454 Plastic Limit = ± 0.2015
II Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-646

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA / MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

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PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-02-1
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location.... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 27-28, 2010

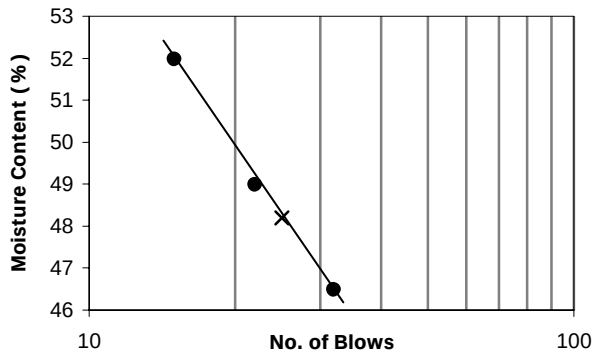
TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-2** DEPTH (m)..... 2.55-3.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-3 USCS CLASS..... ML Sandy SILT

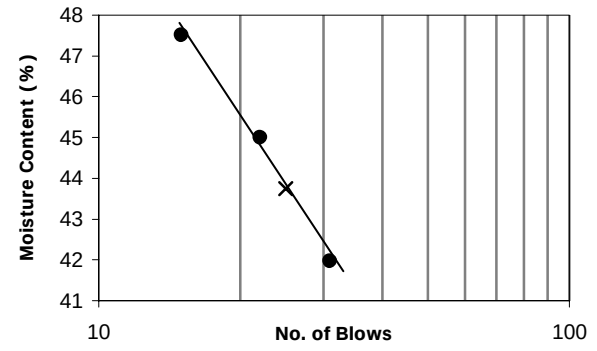
MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	A29	A86	A6	B51	B2
WET SOIL + DISH (g)	32.56	35.41	38.24	22.69	22.72
DRY SOIL + DISH (g)	25.29	26.97	28.53	19.46	19.49
WATER (g)	7.27	8.44	9.71	3.23	3.23
DISH MASS (g)	9.65	9.74	9.85	9.51	9.49
DRY SOIL (g)	15.64	17.23	18.68	9.95	10.00
MOISTURE CONTENT	46.48	48.98	51.98	32.46	32.30
NUMBER OF BLOWS	32	22	15	32	
% RETAINED ON 0.425mm					16.56



LL = 48 PL = 32 PI = 16

BOREHOLE NO..... **BH-2** DEPTH (m)..... 3.55-4.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-4 USCS CLASS..... SC Clayey SAND

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	B62	B21	B9	A48	A91
WET SOIL + DISH (g)	32.62	35.54	38.32	22.70	22.73
DRY SOIL + DISH (g)	25.82	27.52	29.15	19.43	19.45
WATER (g)	6.80	8.02	9.17	3.27	3.28
DISH MASS (g)	9.62	9.70	9.85	9.48	9.50
DRY SOIL (g)	16.20	17.82	19.30	9.95	9.95
MOISTURE CONTENT	41.98	45.01	47.51	32.86	32.96
NUMBER OF BLOWS	31	22	15	33	
% RETAINED ON 0.425mm					16.56



LL = 44 PL = 33 PI = 11

Uncertainty Results: I Liquid Limit = ± 0.1275 Plastic Limit = ± 0.2019
II Liquid Limit = ± 0.1227 Plastic Limit = ± 0.2021

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-647

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA / MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.
SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-02-2
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location.... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 27-28, 2010

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

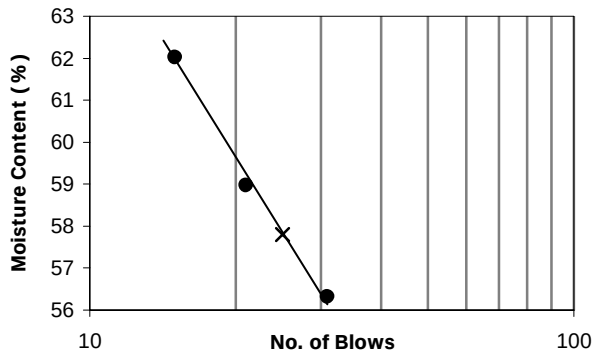
ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-2** DEPTH (m)..... 8.55-9.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-9 USCS CLASS..... MH Elastic SILT

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	A43	A8	A93	B82	B5
WET SOIL + DISH (g)	32.47	35.28	38.22	22.68	22.74
DRY SOIL + DISH (g)	24.23	25.79	27.34	19.49	19.54
WATER (g)	8.24	9.49	10.88	3.19	3.20
DISH MASS (g)	9.60	9.70	9.80	9.49	9.51
DRY SOIL (g)	14.63	16.09	17.54	10.00	10.03
MOISTURE CONTENT	56.32	58.98	62.03	31.90	31.90
NUMBER OF BLOWS	31	21	15	32	

% RETAINED ON 0.425mm 6.34

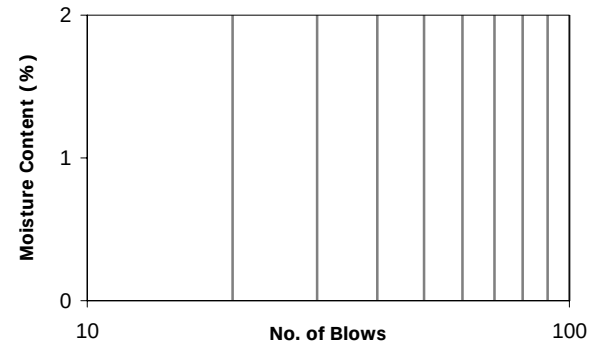


LL = 58 PL = 32 PI = 26

BOREHOLE NO..... DEPTH (m)..... SOIL DESCRIPTION.....
SAMPLE NO..... USCS CLASS.....

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER					
WET SOIL + DISH (g)					
DRY SOIL + DISH (g)					
WATER (g)					
DISH MASS (g)					
DRY SOIL (g)					
MOISTURE CONTENT					
NUMBER OF BLOWS					

% RETAINED ON 0.425mm .....



LL = PL = PI =

Uncertainty Results: I Liquid Limit = ± 0.1355 Plastic Limit = ± 0.2005
II Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-647

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA / MRR
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SOILS AND MATERIALS TESTING LABORATORY
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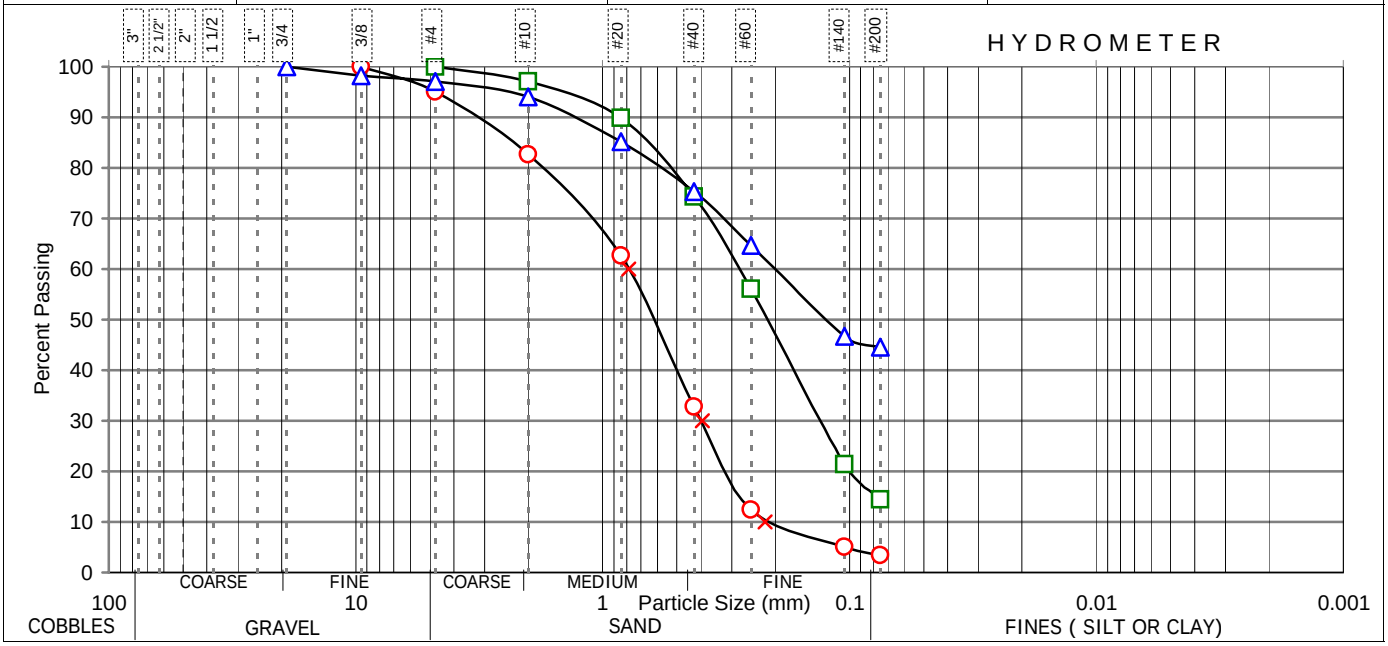
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-1
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 22, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-1**	○ 1	□ 2	△ 3
DEPTH (m).....		0.55-1.00	1.55-2.00	2.55-3.00
SOIL DESCRIPTION.....		Poorly graded SAND	Silty SAND	Clayey SAND

SIEVE SIZE		Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									100
3/8	9.5			100				1.16	1.74	98
4	4.75	4.34	4.91	95			100	1.93	2.89	97
10	2.0	15.39	17.39	83	1.96	2.96	97	3.97	5.94	94
20	0.8	33.02	37.32	63	6.73	10.16	90	9.89	14.81	85
40	0.425	59.43	67.17	33	17.01	25.68	74	16.45	24.63	75
60	0.25	77.49	87.58	12	29.09	43.92	56	23.59	35.31	65
140	0.105	84.00	94.94	5	52.05	78.58	21	35.62	53.32	47
200	0.075	85.42	96.54	3	56.68	85.57	14	37.03	55.43	45
OVEN DRIED MASS			88.48 gms			66.24 gms			66.80 gms	



* - with Hydrometer

REMARKS : S-1: Cu = 3.56 Cc = 0.90

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0488 LAB.FILE NO.:GSA-10-400

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

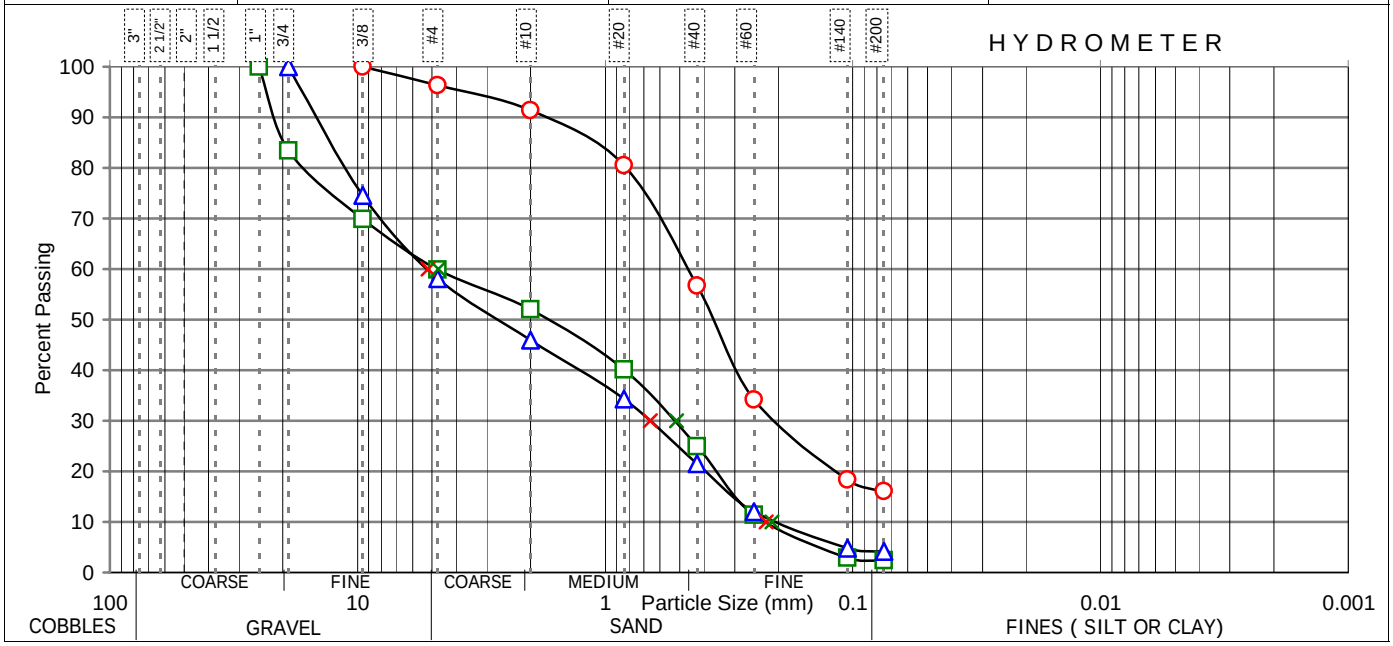
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-2
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 22, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

		○ 4	□ 5	△ 6
BH / SAMPLE NO.....	**BH-1**			
DEPTH (m).....		3.55-4.00	4.55-5.00	5.55-6.00
SOIL DESCRIPTION.....		Silty SAND	Poorly graded SAND	Poorly graded SAND

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0						100			
3/4	19.0				15.10	16.54	83			100
3/8	9.5			100	27.52	30.15	70	23.58	25.43	75
4	4.75	2.89	3.68	96	36.66	40.16	60	38.81	41.86	58
10	2.0	6.74	8.58	91	43.81	48.00	52	50.07	54.01	46
20	0.8	15.28	19.46	81	54.68	59.90	40	60.94	65.73	34
40	0.425	34.04	43.35	57	68.55	75.10	25	72.80	78.52	21
60	0.25	51.72	65.87	34	80.88	88.61	11	81.60	88.02	12
140	0.105	64.12	81.66	18	88.65	97.12	3	88.20	95.14	5
200	0.075	65.86	83.88	16	89.03	97.54	2	88.78	95.76	4
OVEN DRIED MASS		78.52 gms			91.28 gms			92.71 gms		



* - with Hydrometer

REMARKS : S-5: Cu = 23.17 Cc = 0.37

S-6: Cu = 22.34 Cc = 0.26

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

TESTED BY : ARTURO Q. AQUINO

LABORATORY TECHNICIAN

CERTIFIED BY : _____

AUTHORIZED SIGNATORY

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

Uncertainty Results: % Finer = ± 0.0408 LAB.FILE NO.:GSA-10-400

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

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LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
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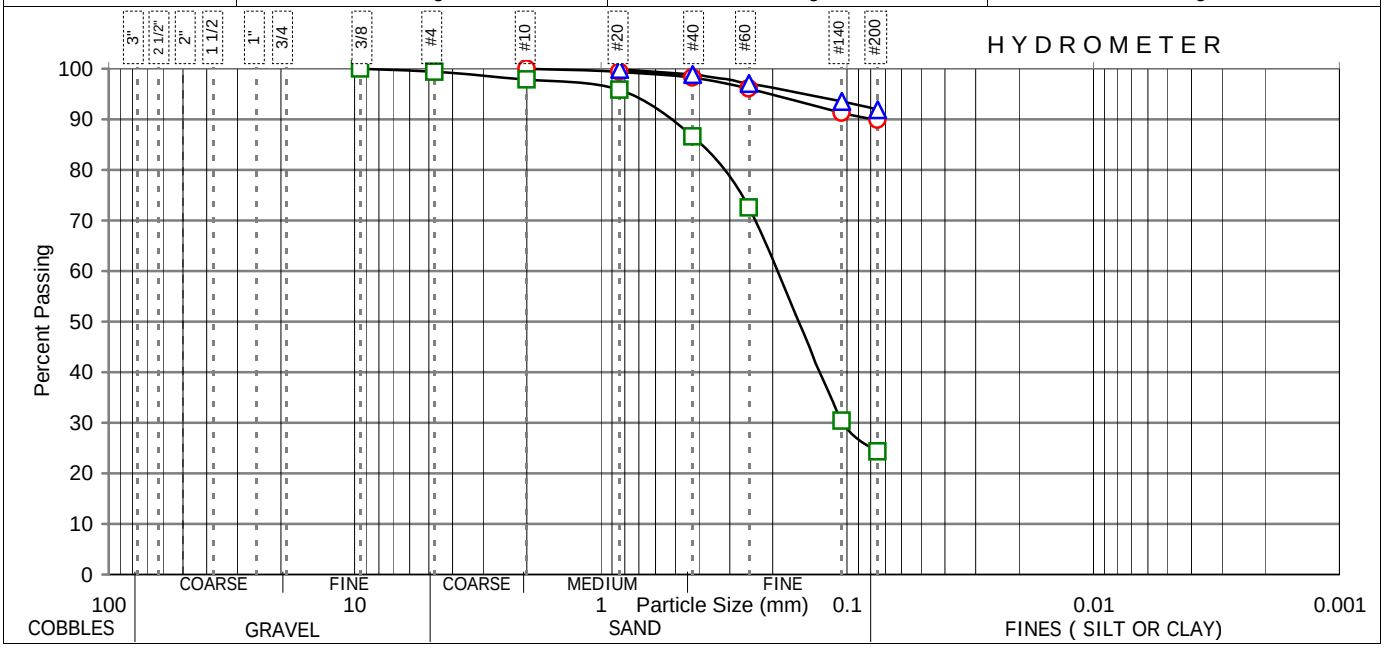
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-3
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 22, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-1**	○ 7	□ 8	△ 9
DEPTH (m).....		6.55-7.00	7.55-8.00	8.55-9.00
SOIL DESCRIPTION.....		Fat CLAY	Silty SAND	Fat CLAY

SIEVE SIZE		Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									
3/8	9.5						100			
4	4.75				0.50	0.62	99			
10	2.0			100	1.77	2.20	98			
20	0.8	0.30	0.65	99	3.32	4.13	96	0.10	0.17	100
40	0.425	0.82	1.78	98	10.78	13.41	87	0.64	1.09	99
60	0.25	1.81	3.93	96	22.05	27.43	73	1.70	2.89	97
140	0.105	4.00	8.68	91	55.94	69.58	30	3.80	6.46	94
200	0.075	4.68	10.16	90	60.81	75.63	24	4.75	8.08	92
OVEN DRIED MASS			46.08 gms			80.40 gms			58.82 gms	



* - with Hydrometer

REMARKS :

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0536 LAB.FILE NO.:GSA-10-400

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

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LA-2006-097B

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119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

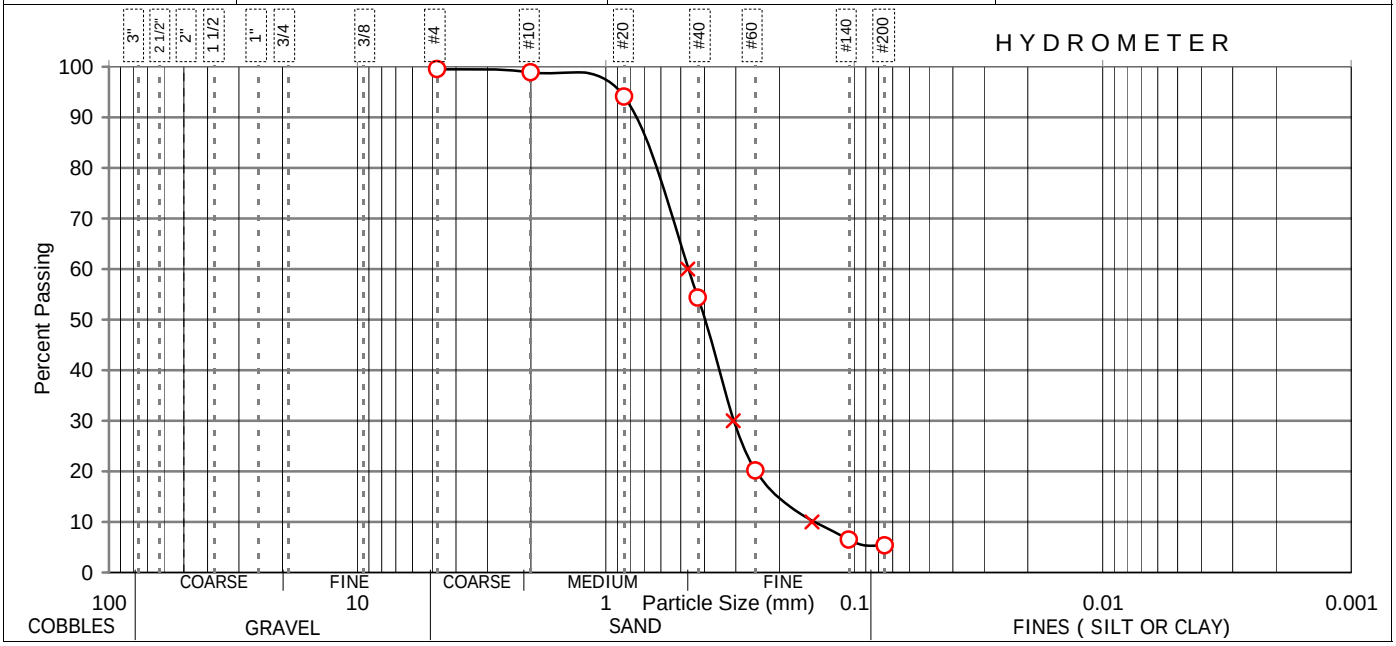
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-4
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 22, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO..... **BH-1** ○10 □ △
DEPTH (m)..... 9.55-10.00
SOIL DESCRIPTION..... Poorly graded SAND with silt

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									
3/8	9.5									
4	4.75	0.40	0.46	100						
10	2.0	0.94	1.09	99						
20	0.8	5.11	5.91	94						
40	0.425	39.51	45.67	54						
60	0.25	69.12	79.90	20						
140	0.105	80.90	93.52	6						
200	0.075	81.94	94.72	5						
OVEN DRIED MASS		86.51 gms								



* - with Hydrometer

REMARKS : S-10: Cu = 3.16 Cc = 1.35

SAMPLE SUBMITTED BY:
☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

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Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0391 LAB.FILE NO.:GSA-10-400

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

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LA-2006-097B

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119 Sauyo Road, Novaliches, Quezon City

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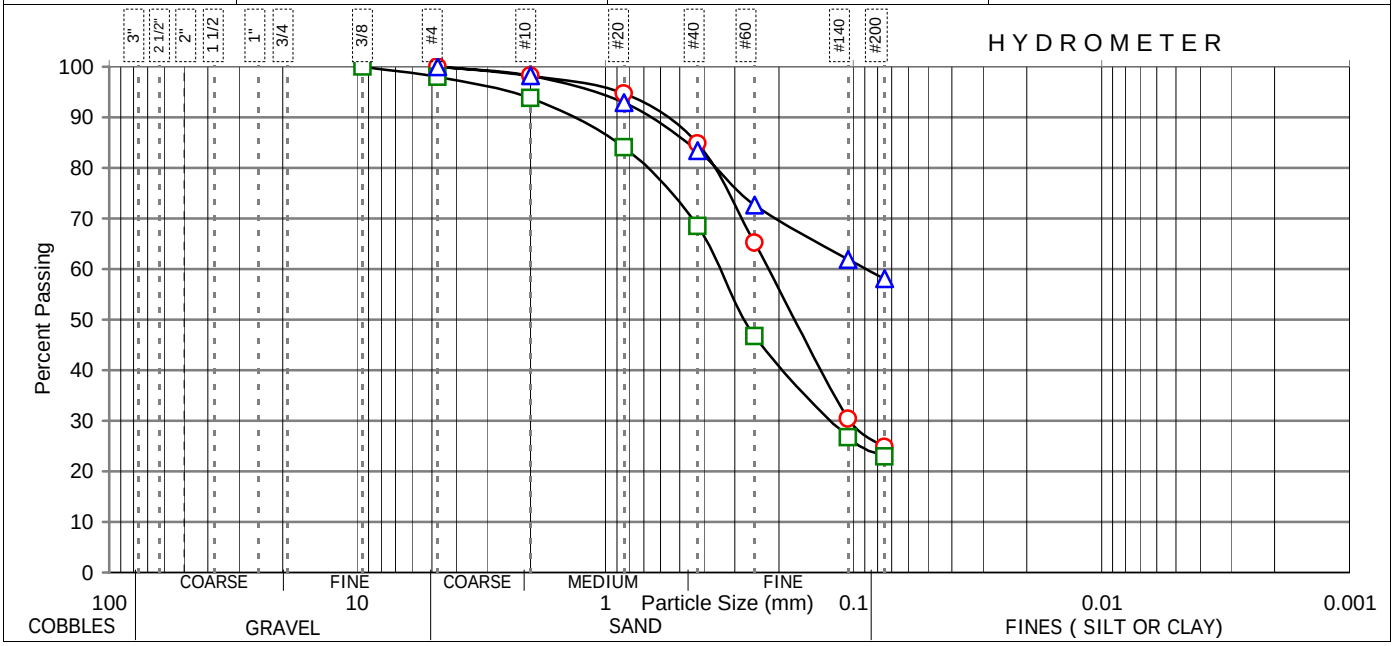
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-02-1
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 27, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-2**	○ 1	□ 2	△ 3
DEPTH (m).....		0.55-1.00	1.55-2.00	2.55-3.00
SOIL DESCRIPTION.....		Silty SAND	Silty SAND	Sandy SILT

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									
3/8	9.5						100			
4	4.75			100	1.91	2.05	98			100
10	2.0	1.41	1.72	98	5.83	6.27	94	1.37	1.77	98
20	0.8	4.38	5.34	95	14.85	15.96	84	5.47	7.08	93
40	0.425	12.42	15.15	85	29.37	31.56	68	12.79	16.56	83
60	0.25	28.51	34.77	65	49.55	53.25	47	21.13	27.36	73
140	0.105	57.11	69.65	30	68.22	73.32	27	29.40	38.06	62
200	0.075	61.65	75.18	25	71.75	77.11	23	32.38	41.92	58
OVEN DRIED MASS		82.00 gms			93.05 gms			77.24 gms		



* - with Hydrometer

REMARKS :

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0375 LAB.FILE NO.:GSA-10-401

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

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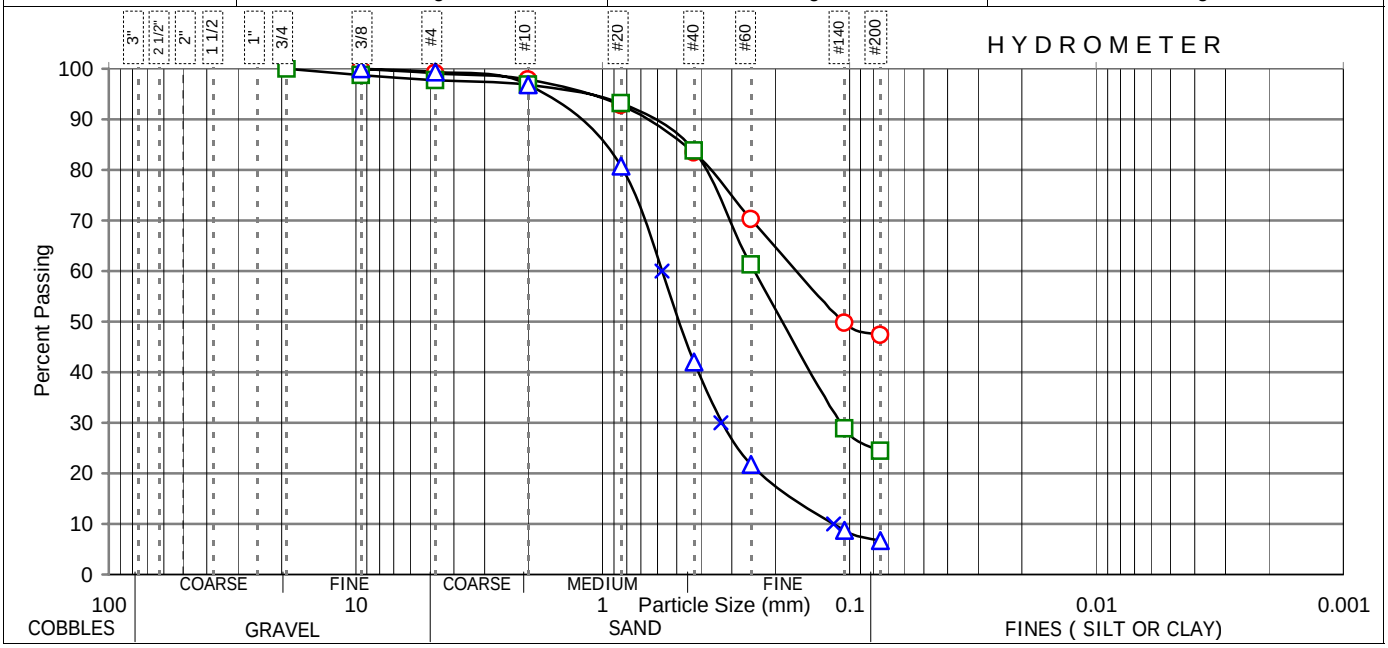
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-02-2
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 27, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-2**	○ 4	□ 5	△ 6
DEPTH (m).....		3.55-4.00	4.55-5.00	5.55-6.00
SOIL DESCRIPTION.....		Clayey SAND	Silty SAND	Poorly graded SAND with silt

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0						100			
3/8	9.5			100	1.12	1.29	99			100
4	4.75	0.61	0.88	99	2.00	2.31	98	0.50	0.63	99
10	2.0	1.47	2.12	98	2.71	3.13	97	2.48	3.13	97
20	0.8	5.04	7.26	93	5.96	6.87	93	15.23	19.24	81
40	0.425	11.50	16.56	83	14.10	16.26	84	45.91	58.00	42
60	0.25	20.64	29.73	70	33.58	38.73	61	61.89	78.18	22
140	0.105	34.90	50.27	50	61.72	71.18	29	72.20	91.21	9
200	0.075	36.52	52.60	47	65.52	75.56	24	73.80	93.23	7
OVEN DRIED MASS		69.43 gms			86.71 gms			79.16 gms		



* - with Hydrometer

REMARKS : S-6: Cu = 4.95 Cc = 1.66

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0424 LAB.FILE NO.:GSA-10-401

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

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PNS ISO/IEC 17025:2005
LA-2006-097B

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DPWH-BRS Accredited

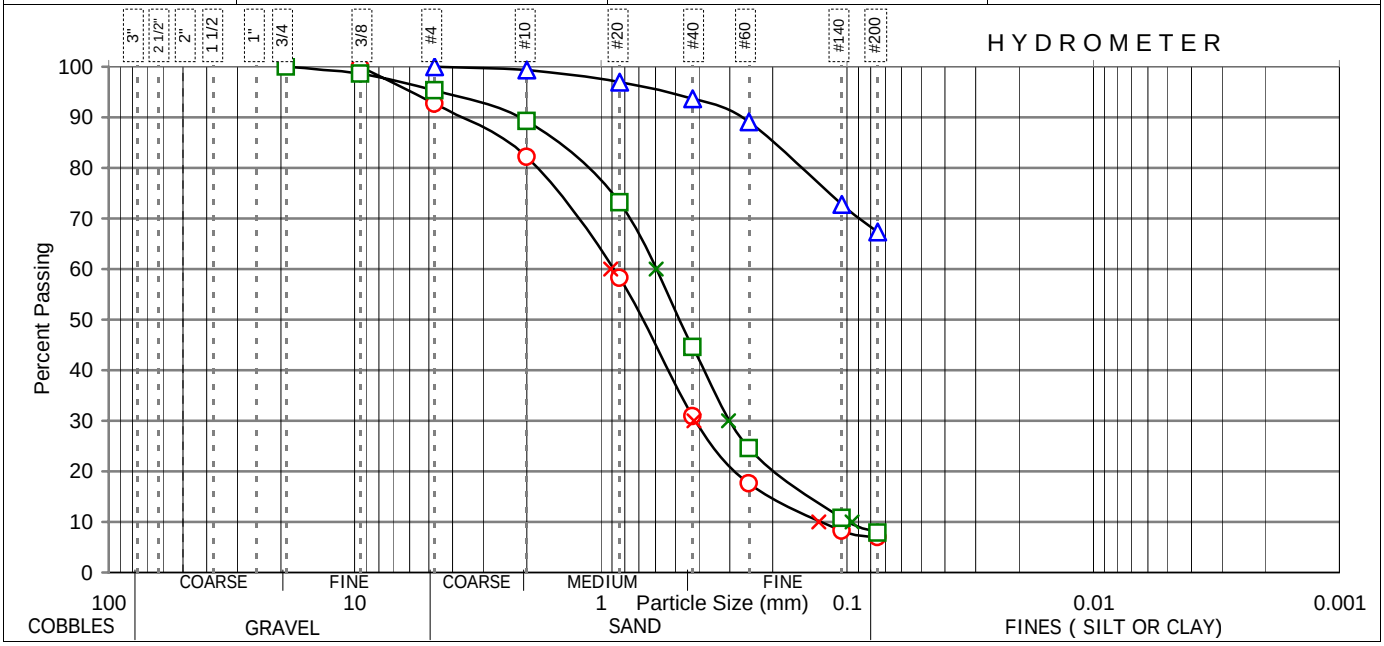
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-02-3
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 27, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-2**	○ 7	□ 8	△ 9
DEPTH (m).....		6.55-7.00	7.55-8.00	8.55-9.00
SOIL DESCRIPTION.....		Well graded SAND with silt	Well graded SAND with silt	Elastic SILT

SIEVE SIZE		Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0						100			
3/8	9.5			100	1.24	1.35	99			
4	4.75	6.48	7.40	93	4.25	4.64	95			100
10	2.0	15.66	17.88	82	9.87	10.78	89	0.46	0.68	99
20	0.8	36.63	41.83	58	24.54	26.81	73	2.05	3.01	97
40	0.425	60.47	69.06	31	50.78	55.47	45	4.32	6.34	94
60	0.25	72.10	82.34	18	69.02	75.40	25	7.41	10.88	89
140	0.105	80.38	91.80	8	81.66	89.21	11	18.53	27.20	73
200	0.075	81.45	93.02	7	84.35	92.15	8	22.25	32.66	67
OVEN DRIED MASS			87.56 gms			91.54 gms			68.12 gms	



* - with Hydrometer

REMARKS :

S-7:	Cu =	7.01	Cc =	1.47
S-8:	Cu =	6.27	Cc =	1.62

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

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Encoder

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Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0383 LAB.FILE NO.:GSA-10-401

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

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LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

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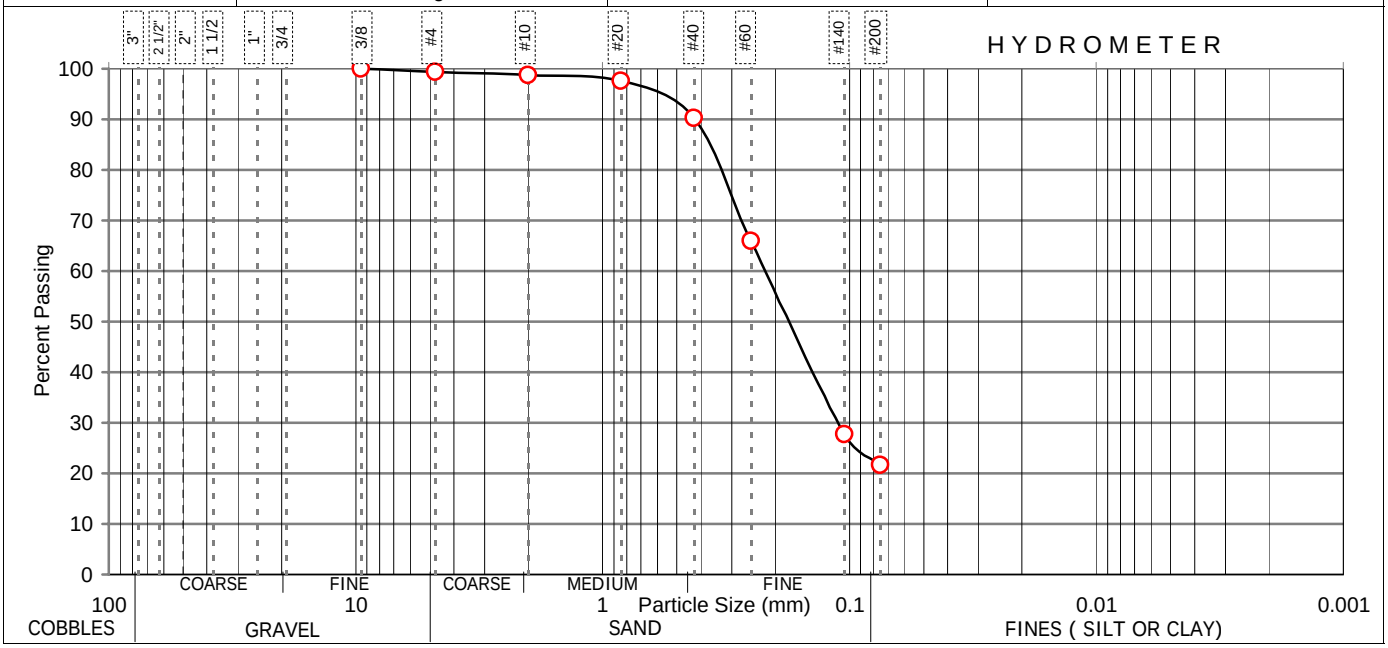
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-02-4
Project..... **Proposed Mayon Evacuation Center (Libon Community College)**	Date of Receipt..... October 19, 2010
Location..... Brgy. Zone 4 Libon, Province of Albay	Date of Test..... October 27, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO..... **BH-2** ○10 □ △
DEPTH (m)..... 9.55-10.00
SOIL DESCRIPTION..... Silty SAND

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									
3/8	9.5			100						
4	4.75	0.50	0.61	99						
10	2.0	1.03	1.25	99						
20	0.8	1.98	2.40	98						
40	0.425	8.00	9.69	90						
60	0.25	28.14	34.07	66						
140	0.105	59.65	72.22	28						
200	0.075	64.74	78.39	22						
OVEN DRIED MASS			82.59 gms							



* - with Hydrometer

REMARKS :

SAMPLE SUBMITTED BY:
☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0378 LAB.FILE NO.:GSA-10-401

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

FINAL REPORT

SUBSURFACE INVESTIGATION

PROPOSED MAYON EVACUATION CENTER (2-STOREY)

POLANGUI NORTH CENTRAL SCHOOL
CENTRO ORIENTAL, PROVINCE OF ALBAY

MOHRI, ARCHITECT & ASSOCIATES, INC.

OCTOBER 2010
JOB NO. 2209-10.R1

GEOTECHNICS PHILIPPINES, INC.
GEOTECHNICAL & FOUNDATION CONSULTANTS

DPWH-BRS Accredited

FINAL REPORT

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119 Sauyo Road, Novaliches
Quezon City, Philippines

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Business development : 9306555
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Email : jmcgpi@gmail.com

FINAL REPORT

SUB-SURFACE INVESTIGATION FOR THE PROPOSED MAYON EVACUATION CENTER (2-STOREY) LOCATED AT POLANGUI NORTH CENTRA SCHOOL, CENTRO ORIENTAL, PROVINCE OF ALBAY

1.0 Introduction:

Geotechnics Philippines, Incorporated (GPI) completed the subsurface soil investigation for the proposed Mayon Evacuation Center. The proposed site explored is located at Centro Oriental, Province of Albay.

Two (2) boreholes were drilled at the proposed site from October 17 to October 18, 2010. Borings were undertaken down to 10m for both BH-1 and BH-2 below existing natural ground line. Borehole locations are as indicated on the accompanying Boring Plan and Soil Profile Sheets.

The subsurface soil exploration was undertaken upon the request of Mohri, Architect & Associates, Inc. in order to gain information on the subsurface conditions and bearing characteristics of the underlying soils at site.

The undersigned was tasked to evaluate the results of the completed subsurface soil exploration and to recommend a suitable foundation solution for the proposed structure.

This report embodies the undersigned's engineering analysis and recommendations based mainly on the results of the geotechnical soil borings and pertinent laboratory tests performed on extracted samples.

The results of geotechnical soil borings and laboratory tests can be referred to in the attachments accompanying this report.

2.0 Objectives:

The geotechnical investigation aims to determine the following:

- Soil Profile
- Engineering properties of the Soil Strata
- Bearing Capacities and Foundation Types
- Settlement conditions of critical areas
- Comment on ground stability and liquefaction potential of the site
- Provide Excavation and Fill Guidelines

In addition to the above mentioned items, matters on implementation and construction shall be given as required.

3.0 Field Exploration and Investigation

The field exploration implored continuous was boring and the Standard Penetration Test (SPT) were performed at the last 45cm of every change strata or 1.0 meter intervals. The blow counts (N value or NB) were recorded as disturbed samples from the split spoon sampler were retrieved for laboratory testing. The recovered samples were described semi qualitative in terms of extracted length. The extracted soil samples

were wrapped in double plastic bags for moisture and sample protection and were transported to the laboratory for further testing of engineering properties.

3.1 Standard Penetration Test

The Standard Penetration Test (SPT) is a field test used in determining the shear strength of soils from an established correlation. The SPT requires the count of the number of blows that it would take a standard split spoon sampler to penetrate its last 30.5cm (12inches) of the sampler. The standard mass is 63.5 kilograms and the height of the drop is 76.2cm specified as a free drop.

3.2 Ground Water Table

The ground water table (GWT) elevation was observed at least 4 hours from the completion of the borehole up to demobilization.

4.0 Laboratory Investigation

The retrieved samples were brought to the laboratory in Sauyo Road, Novaliches, Quezon City. Various tests were conducted on all extracted samples with test procedures conforming to the American Standards for Testing Materials (ASTM). The following are the laboratory tests conducted on the soil samples.

Type of Test	ASTM Designation	Description of Test
Soil Classification for Engineering Purposes - Unified Soil Classification System	ASTM D 2487-05	• Standard in classifying the type of soil based on composition and physical properties • These were classified in accordance to grain size, composition, percentage of size in the distribution
Particle Size Distribution - Sieve Analysis	ASTM D 422-63 (Reapproved 2002)	• The test allows the dried or wet soil to pass through a series of sieves in order to determine the distribution of grain sizes. • The distributions of the particles are graphed on a semi log scale • This test aids the previous test in classification
Moisture Content	ASTM D 2216-05	• The test aims to determine the natural content of water in the soil • This is taken as the ratio of water to the ratio of the soil particles • The test uses a weighing scale measuring the initial weight of the soil and the final weight of the soil after drying it in the oven
Atterberg Limits Liquid Limit, Plastic Limit and Plasticity Index	ASTM D4318-05	• Tests determining the limits of cohesive soils in behaving as a plastic or a flowing medium by incrementally changing the water content • The plastic limit is determined by rolling a clay sample to around 1/8 of an inch or 3mm • The liquid limit uses the liquid limit device and determines the number of blows it would take for the slit to close • Correlative values can be used for settlement relations

The results of the laboratory investigation are appended.

5.0 Borehole Stratigraphy

Two (2) boreholes were driven to investigate the subsurface. The following are the findings:

5.1 Borehole BH-1

Depth (m)	Soil Classification	Consistency	N-Value
0.00 - 1.00	Elastic SILT	Very Stiff	26
1.00 - 4.00	Silty SAND	Firm	11 ~ 18
4.00 - 5.00	Silty SAND	Loose	7
5.00 - 10.00	Poorly graded	Dense - Firm	18 ~ 31

The ground water was measured at 1.05 meters from the existing ground.

5.2 Borehole - BH-2

Depth (m)	Soil Classification	Consistency	N-Value
0.00 - 1.00	Elastic SILT	Stiff	13
1.00 - 2.00	Elastic SILT	Firm	8
2.00 - 4.00	Silty SAND	Firm	13 ~ 25
4.00 - 5.00	Silty SAND	Loose	8
5.00 - 6.00	Silty SAND	Firm	27
6.00 - 7.00	Elastic SILT	Very Stiff	16
7.00 - 10.00	SAND	Dense to Firm	10 ~ 32

The ground water was measured at 1.05 meters from the existing ground.

6.0 Soil Properties

The following are the adapted soil properties for the investigated strata:

Soil Parameters			
Gravels, Sands, Silty Sands and Clayey Sands (Non-cohesive)			
Sands	c	φ	γ (kcf)
Very Loose	0	26	0.085
Loose	0	28	0.100
Medium Dense	0	30	0.110
Dense	0	32	0.120
Very Dense	0	35	0.130
Silts and Clays (Cohesive)			
Silts and Clays	c	φ	γ (kcf)
Very Soft	=(N*10)/2 from Braja Das	0	0.100
Soft		0	0.105
Firm		0	0.115
Stiff		0	0.120
Very Stiff		0	0.125
Hard		0	0.130

7.0 Liquefaction Potential

The boreholes showed thin layer of potentially liquefiable layer between 4~5 meters deep. However, the impact would be minimal as dense layer are found in between loose formation.

8.0 Bearing Capacity and Foundation Type

Shallow Foundations

Shallow Foundations have good bearing capacities. The following are the allowable net bearing capacities based on Terzaghi's Bearing Capacity Equation:

BH-1:

Depth (m)	Bearing Capacity (kPa)
1.0	96
1.5	96

BH-2:

Depth	Bearing Capacity (kPa)
1.0	96
1.5	96

The associated settlement on the other hand is within the tolerable engineering settlement of 25mm. It is suggested that structural tie beam be installed to hold the foundation rigid during major earthquakes.

9.0 Excavation and Fill

The contractor of the proposed structure is advised to rail the excavation at night and during break times so as to ensure the general safety of the public specially childrens. Existing structures, whether temporary or permanent that are adjacent, the excavation should be protected from damages. Dewatering shall be necessary as the water table is shallow.

Fill for the excavation for footings and may utilize the same materials. On the other hand, grade and subgrade materials should be sandy frictional materials.

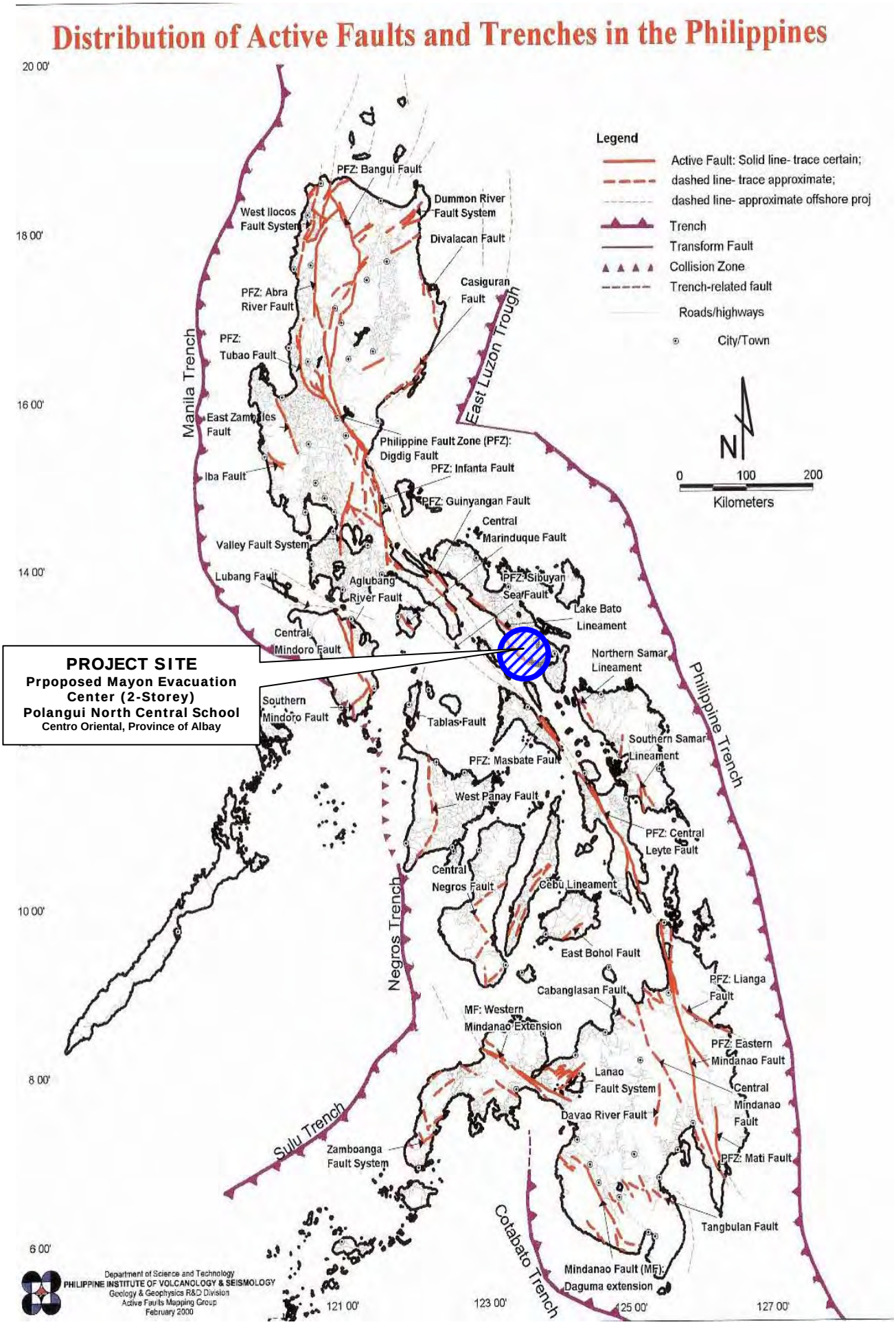
Fill should be compacted at 95% its maximum dry density. Should the amount of soil be inept, sandy fill may be utilized and should be compacted in the same degree. In both cases, the height of fill should be reviewed and adjusted accordingly to adapt minimal settlements.

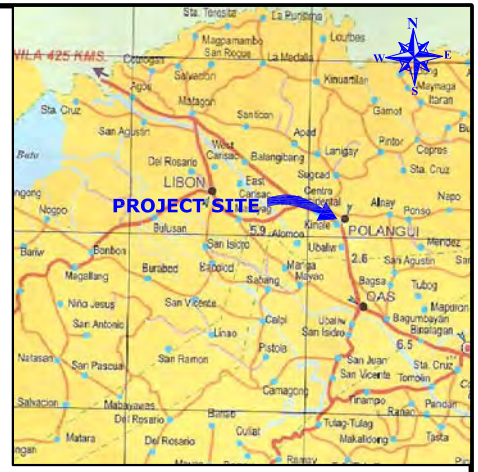
Borehole Conclusions and Recommendations

The conclusions and recommendations are based on the data of two (2) boreholes. Deviations from these are expected and should be minimal as the boreholes are typical of an alluvial formation. Should there be any major deviation in the substrata be detected during the excavation phase, may the undersigned thru Geotechnics Philippines Inc (02-930-6555) be contacted immediately for proper reassessment.

DIOSDADO A. URENA
CE Reg. No. 053884
PTR No. 3228274
Issued on January 8, 2010
Issued at Quezon City

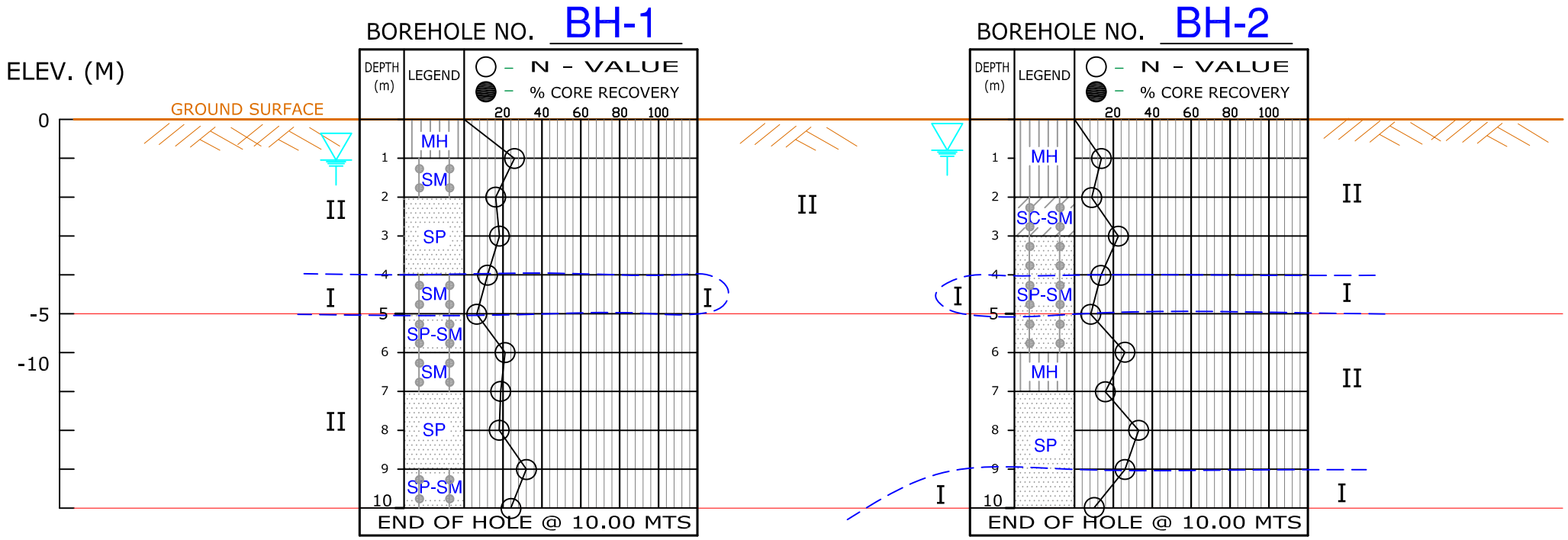
APPENDICES


Distribution of Active Faults and Trenches in the Philippines
PROJECT SITE
Prpoposed Mayon Evacuation Center (2-Storey)
Polangui North Central School
Centro Oriental, Province of Albay
Legend
Active Fault: Solid line- trace certain;
dashed line- trace approximate;
dashed line- approximate offshore proj
Trench
Transform Fault
Collision Zone
Trench-related fault
Roads/highways
City/Town
N
0 100 200
Kilometers
PFZ: Bangui Fault
West Ilocos Fault System
Dummon River Fault System
Divalacan Fault
Casiguran Fault
PFZ: Abra River Fault
PFZ: Tubao Fault
East Zambales Fault
Philippine Fault Zone (PFZ): Digdig Fault
PFZ: Infanta Fault
Iba Fault
PFZ: Guinyangan Fault
Central Marinduque Fault
Valley Fault System
Lubang Fault
Aglubang River Fault
PFZ: Sibuyan Sea Fault
Lake Bato Lineament
Central Mindoro Fault
Northern Samar Lineament
Southern Mindoro Fault
Tablas Fault
Southern Samar Lineament
PFZ: Masbate Fault
West Panay Fault
PFZ: Central Leyte Fault
Central Negros Fault
Cebu Lineament
East Bohol Fault
PFZ: Lianga Fault
Cabanglasan Fault
MF: Western Mindanao Extension
PFZ: Eastern Mindanao Fault
Lanao Fault System
Central Mindanao Fault
Davao River Fault
Zamboanga Fault System
PFZ: Mati Fault
Tangbulan Fault
Mindanao Fault (MF): Daguma extension
Manila Trench
East Luzon Trough
Philippine Trench
Negros Trench
Sulu Trench
Cotabato Trench
20 00'
18 00'
16 00'
14 00'
10 00'
8 00'
6 00'
121 00'
123 00'
125 00'
127 00'
Department of Science and Technology
PHILIPPINE INSTITUTE OF VOLCANOLOGY & SEISMOLOGY
Geology & Geophysics R&D Division
Active Faults Mapping Group
February 2000



VICINITY MAP

CONTRACTOR **GEOTECHNICS PHILIPPINES, INC.** 119 SAUYO ROAD, NOVALICHES, QUEZON CITY	PROJECT TITLE **Proposed Mayon Evacuation Center (Polangui North Central School)** Centro Oriental, Province of Albay	SCALE NTS	SHEET CONTENTS **LOCATION PLAN/VICINITY MAP** CLIENT **MOHRI, ARCHITECT & ASSOCIATES, INC.**	JOB NO. **2209-10.R1** SHEET NO. 1/1



SECTION A - A

L E G E N D :

- CH - Silty C L A Y
- CL - Sandy C L A Y
- MH - Clayey S I L T
- ML - Sandy S I L T
- SC - Clayey S A N D
- SM - Silty S A N D
- GM - Silty G R A V E L
- SC-SM - Clayey silty S A N D
- SP - Poorly graded SAND
- SW - Well graded SAND
- SP-SM - Poorly graded SAND w/ silt
- SW-SM - Well graded SAND w/ silt
- CGP - Poorly graded GRAVEL
- CGW - Well graded GRAVEL
- GP-GM - Poorly graded GRAVEL w/ silt
- GW-GM - Well graded GRAVEL w/ silt
- SD - SANDSTONE
- GC-GM - Clayey silty GRAVEL
- COBBLES
- GRAVEL
- SILTSTONE
- TST - Silty TUFF
- TSD - Sandy TUFF
- SHALE

I - N-VALUE<10 (LIQUEFIABLE ZONE)
II - N-VALUE>10
III - REFUSAL (WEATHERED ZONE)
IV - CORING / HARD FORMATION

CONTRACTOR
GEOTECHNICS PHILIPPINES, INC.
119 SAUYO ROAD, NOVALICHES, QUEZON CITY

PROJECT TITLE:
Proposed Mayon Evacuation Center (Polangui North Central School)
Cento Oriental, Province of Albay

SHEET CONTENTS:
S O I L P R O F I L E
SCALE : N. T. S.

CLIENT:
MOHRI, ARCHITECT & ASSOCIATES, INC.

DRAWN BY:
MARIA ANTONIETTE P. CUNAHAP

CHECKED BY:
A. B. A. / M. R. R.

CERTIFIED BY:
AUTHORIZED SIGNATORY

JOB NO.
2209-10.R1

SHEET NO.
1/1

GEOTECHNICS PHILIPPINES, INCORPORATED

SOILS AND MATERIALS TESTING LABORATORY

119 SAUYO ROAD, NOVALICHES, QUEZON CITY
TEL. NO. 938-2124 \ 456-1140 \ 930-6555

DPWH-BRS Accredited

CLIENT	**MOHRI, ARCHITECT & ASSOCIATES, INC.**		BOREHOLE NO. **BH- 1**
PROJECT	**Proposed Mayon Evacuation Center (Polangui North Central School)**		JOB NO. 2209-10.R1-FBL-01
LOCATION	Centro Oriental, Province of Albay	DRILLED R. POLIDAN	SHEET 1 of 1
RIG	KSK SMALL	LOGGED R. POLIDAN	0.00 to 10.00 meters
	Hammer Weight 63.50 Kg.	DATE STARTED Oct. 17, 2010	GROUND LEVEL - m.
	Fall Height 76.20 cm.	DATE COMPLETED Oct. 17, 2010	WATER LEVEL 1.05 m.
METHOD	WASH BORING	NORTHING -	EASTING -

FINAL BORING LOG

DEPTH (m)	SOIL SYMBOL	SAMPLE NUMBER	TYPE OF SAMPLING	REC (cm)	RQD (%)	PL NMC LL (20 40 60 80 100)	PI	CONSISTENCY	N-VALUE / % Core Recovery (0 20 40 60 80 100)	SOIL DESCRIPTION	OTHER TEST DATA
1.00		S-1	SPT	45	-		28	VERY STIFF	26	(MH) Elastic SILT with little amount of sand and traces of gravel, dark gray, very moist NB: (8)(12)(14)	
2.00		S-2	SPT	45	-		NP		16	(SM) Silty SAND, fine to coarse grained with traces of gravel, dark gray, very moist NB: (6)(7)(9)	
3.00		S-3	SPT	45	-		NP	MEDIUM DENSE	18	(SP) Poorly graded SAND with little amount of gravel, dark gray, moist NB: (8)(9)(9)	
4.00		S-4	SPT	45	-		NP		11	(SP-SM)...moist NB: (8)(6)(5)	
5.00		S-5	SPT	45	-		2	LOOSE	7	(SM) Silty SAND, fine to medium grained, dark gray, very moist NB: (5)(4)(3)	
6.00		S-6	SPT	45	-		NP		21	(SP-SM) Poorly graded SAND with silt and little amount of gravel, dark gray, moist NB: (8)(9)(12)	
7.00		S-7	SPT	45	-		NP	MEDIUM DENSE	19	(SM) Silty SAND, fine to coarse grained with traces of gravel, NB: (5)(8)(11)	
8.00		S-8	SPT	39	-		NP		18	(SP) Poorly graded SAND with some gravel, dark gray, moist NB: (8)(8)(10)	
9.00		S-9	SPT	45	-		NP	DENSE	31	(SP)...with few gravel NB: (10)(14)(17)	
10.00		S-10	SPT	45	-		NP	MEDIUM DENSE	25	(SP-SM) Poorly graded SAND with silt and traces of gravel, dark gray, moist NB: (9)(11)(14)	
										END OF BORING AT 10.00 METERS	

Type of Sampling

- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING (CRG)

Type of Soil

- Silty CLAY
- Clayey SILT
- Clayey SAND
- Silty SAND
- Clayey silty SAND
- SAND
- Silty GRAVEL
- Well graded GRAVEL with silt
- GRAVEL
- SILTSTONE
- TUFF
- Tuffeceous SILTSTONE

CONSISTENCY

COHESIVE SOILS N-VALUE	CONSISTENCY	COHENSIONLESS SOILS N-VALUE	CONSISTENCY
0 - 2	VERY SOFT	0 - 4	VERY LOOSE
2 - 4	SOFT	4 - 10	LOOSE
4 - 8	FIRM	10 - 30	MEDIUM DENSE
8 - 15	STIFF	30 - 50	DENSE
15 - 30	VERY STIFF	> 50	VERY DENSE
> 30	HARD		

MOISTURE

MOISTURE CONTENT RANGES	VALUES
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
> 100	SATURATED

PERCENTAGE

% of SAND and GRAVEL RANGES	VALUES
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

REMARKS: Rec = Recovery in Centimeters NB = No. of Blows HW = Hammer Weight

Reference Joint Spacing: #1 >30cm. 10 cm. >#3>3cm. #5 <1cm.

30 cm.>#2>10cm. 3 cm. >#4>1cm.

RQD = Rock Quality Designation SCR = Solid Core Recovery

Description of Strata is according to Unified Soil Classification System

Prepared by : **R. T. LUSTRE**

Checked by : **A.B.A. / M.R.R.**

Certified by :

AUTHORIZED SIGNATORY

Date Issued :

GEOTECHNICS PHILIPPINES, INCORPORATED

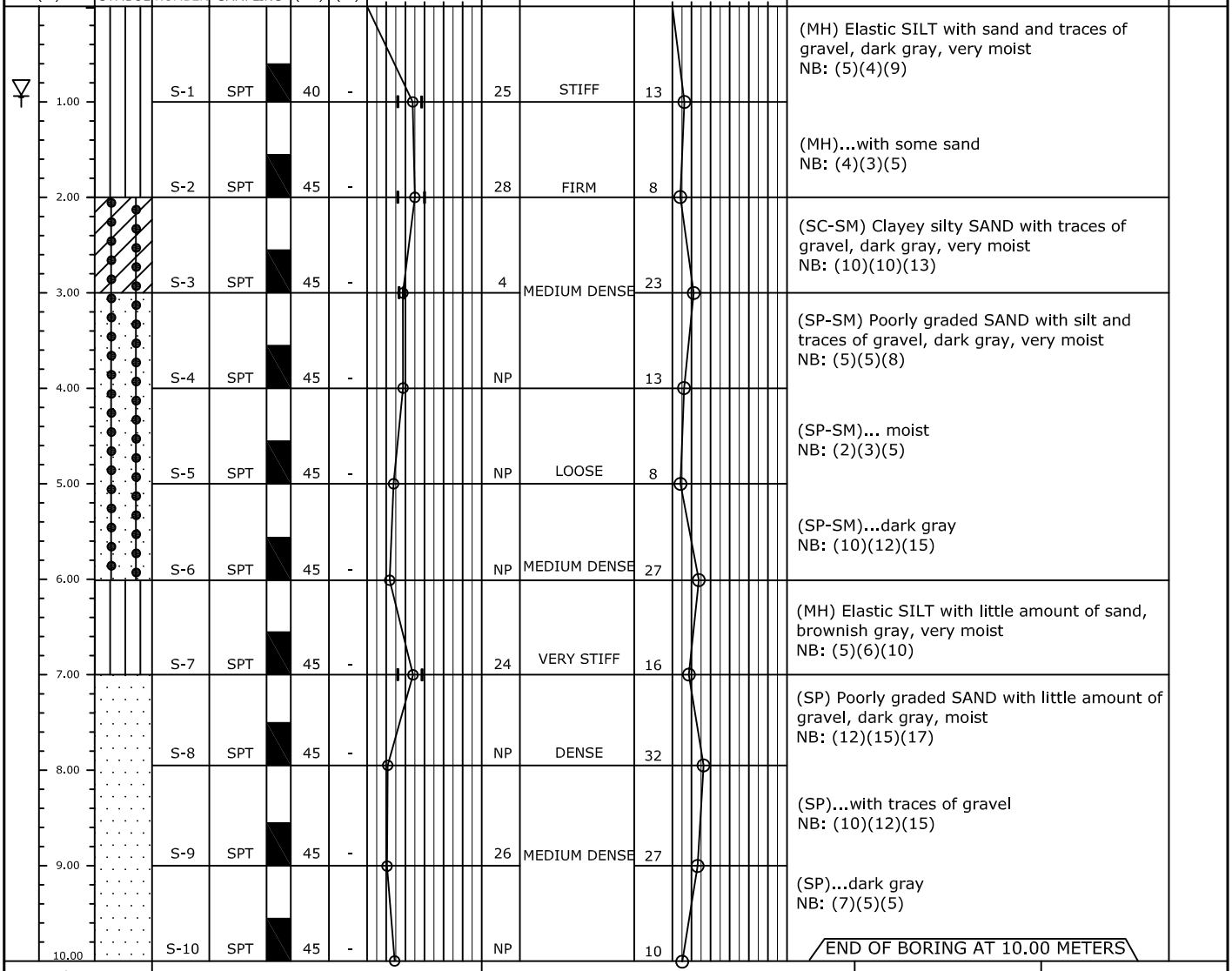
SOILS AND MATERIALS TESTING LABORATORY

119 SAUYO ROAD, NOVALICHES, QUEZON CITY
TEL. NO. 938-2124 \ 456-1140 \ 930-6555

DPWH-BRS Accredited

CLIENT	**MOHRI, ARCHITECT & ASSOCIATES, INC.**		BOREHOLE NO. **BH- 2**
PROJECT	**Proposed Mayon Evacuation Center (Polangui North Central School)**		JOB NO. 2209-10.R1-FBL-02
LOCATION	Brgy. Centro Oriental, Province of Albay	DRILLED R. POLIDAN	SHEET 1 of 1
RIG	KSK SMALL	LOGGED R. POLIDAN	0.00 to 10.00 meters
	Hammer Weight 63.50 Kg.	DATE STARTED Oct. 18, 2010	GROUND LEVEL - m.
	Fall Height 76.20 cm.	DATE COMPLETED Oct. 18, 2010	WATER LEVEL 0.97 m.
METHOD	WASH BORING	NORTHING -	EASTING -

FINAL BORING LOG



DEPTH (m)	SAMPLE NUMBER	TYPE OF SAMPLING	REC (cm)	RQD (%)	PI	CONSISTENCY	N-VALUE	SOIL DESCRIPTION
1.00	S-1	SPT	40	-	25	STIFF	13	(MH) Elastic SILT with sand and traces of gravel, dark gray, very moist NB: (5)(4)(9)
2.00	S-2	SPT	45	-	28	FIRM	8	(MH)...with some sand NB: (4)(3)(5)
3.00	S-3	SPT	45	-	4	MEDIUM DENSE	23	(SC-SM) Clayey silty SAND with traces of gravel, dark gray, very moist NB: (10)(10)(13)
4.00	S-4	SPT	45	-	NP		13	(SP-SM) Poorly graded SAND with silt and traces of gravel, dark gray, very moist NB: (5)(5)(8)
5.00	S-5	SPT	45	-	NP	LOOSE	8	(SP-SM)... moist NB: (2)(3)(5)
6.00	S-6	SPT	45	-	NP	MEDIUM DENSE	27	(SP-SM)...dark gray NB: (10)(12)(15)
7.00	S-7	SPT	45	-	24	VERY STIFF	16	(MH) Elastic SILT with little amount of sand, brownish gray, very moist NB: (5)(6)(10)
8.00	S-8	SPT	45	-	NP	DENSE	32	(SP) Poorly graded SAND with little amount of gravel, dark gray, moist NB: (12)(15)(17)
9.00	S-9	SPT	45	-	26	MEDIUM DENSE	27	(SP)...with traces of gravel NB: (10)(12)(15)
10.00	S-10	SPT	45	-	NP		10	(SP)...dark gray NB: (7)(5)(5) END OF BORING AT 10.00 METERS

Type of Sampling

- STANDARD PENETRATION TEST (SPT)
- UNDISTURBED SAMPLING (UDS)
- CORING (CRG)

Type of Soil

- Silty CLAY
- Clayey SILT
- Clayey SAND
- Silty SAND
- Clayey silty SAND
- SAND
- Silty GRAVEL
- Well graded GRAVEL with silt
- GRAVEL
- SILTSTONE
- TUFF
- Tuffeceous SILTSTONE

CONSISTENCY

COHESIVE SOILS N-VALUE	CONSISTENCY	COHENSIONLESS SOILS N-VALUE	CONSISTENCY
0 - 2	VERY SOFT	0 - 4	VERY LOOSE
2 - 4	SOFT	4 - 10	LOOSE
4 - 8	FIRM	10 - 30	MEDIUM DENSE
8 - 15	STIFF	30 - 50	DENSE
15 - 30	VERY STIFF	> 50	VERY DENSE
> 30	HARD		

MOISTURE

MOISTURE CONTENT RANGES	VALUES
0 - 10	DRY
10 - 30	MOIST
30 - 70	VERY MOIST
70 - 100	WET
> 100	SATURATED

PERCENTAGE

% of SAND and GRAVEL RANGES	VALUES
0 - 5	TRACES
6 - 10	FEW
11 - 25	LITTLE
26 - 35	SOME
36 - 45	WITH

REMARKS: Rec = Recovery in Centimeters NB = No. of Blows HW = Hammer Weight

Reference Joint Spacing: #1 >30cm. 10 cm. >#3>3cm. #5 <1cm.

30 cm.>#2>10cm. 3 cm. >#4>1cm.

RQD = Rock Quality Designation SCR = Solid Core Recovery

Description of Strata is according to Unified Soil Classification System

Prepared by : **R. T. LUSTRE**

Checked by : **A.B.A. / M.R.R.**

Certified by :

AUTHORIZED SIGNATORY

Date Issued :

GEOTECHNICS PHILIPPINES, INC.
SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

CLIENT..... **MOHRI, ARCHITECT & ASSOCIATES, INC.** JOB NUMBER..... 2209-10.R1-SUM-1
PROJECT..... **Proposed Mayon Evacuation Center (Polangui North Central School)** DATE OF RECIEPT.... October 27, 2010
LOCATION.... Centro Oriental, Province of Albay DATE OF TEST..... October 27-30, 2010

SUMMARY OF LABORATORY TESTS

SAMPLE NUMBER	DEPTH (m)	NMC (%)	ATTERBERG LIMIT, (%)			USCS Class.	SIEVE ANALYSIS (% FINER) PASSING SIEVE NO.										Remarks
			LL	PL	PI		1	3/4	3/8	4	10	20	40	60	140	200	
BH-1																	
1	0.55 - 1.00	45	60	32	28	MH			100	98	97	93	88	83	77	76	-
2	1.55 - 2.00	30	-	NP	-	SM			100	95	81	61	43	32	25	24	-
3	2.55 - 3.00	27	-	NP	-	SP		100	87	78	64	45	24	10	3	3	-
4	3.55 - 4.00	19	-	NP	-	SP		100	90	79	67	47	22	10	4	3	-
5	4.55 - 5.00	32	35	33	2	SM				100	99	91	72	56	34	32	-
6	5.55 - 6.00	16	-	NP	-	SP-SM		100	94	84	75	52	22	12	7	6	-
7	6.55 - 7.00	29	-	NP	-	SM			100	98	96	84	58	40	25	22	-
8	7.55 - 8.00	23	-	NP	-	SP		100	86	69	56	44	25	12	5	4	-
9	8.55 - 9.00	25	-	NP	-	SP		100	95	92	82	64	29	10	5	4	-
10	9.55 - 10.00	26	-	NP	-	SP-SM			100	98	89	64	29	13	7	5	-
BH-2																	
1	0.55 - 1.00	47	57	32	25	MH			100	98	95	86	78	72	69	67	-
2	1.55 - 2.00	50	60	32	28	MH			100	96	88	85	81	77	73	72	-
3	2.55 - 3.00	36	38	34	4	SC-SM			100	97	91	82	71	60	39	37	-
4	3.55 - 4.00	37	-	NP	-	SP-SM		100	98	96	90	73	43	17	6	5	-
5	4.55 - 5.00	27	-	NP	-	SP-SM			100	98	92	75	37	15	6	5	-
6	5.55 - 6.00	24	-	NP	-	SP-SM				100	97	81	40	18	7	6	-
7	6.55 - 7.00	48	56	32	24	MH					100	98	93	84	77	73	-
8	7.55 - 8.00	23	-	NP	-	SP			100	86	73	49	24	12	6	4	-
9	8.55 - 9.00	21	-	NP	-	SP			100	98	86	61	32	14	4	3	-
10	9.55 - 10.00	27	-	NP	-	SP			100	98	86	61	32	14	4	3	-

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: * with hydrometer

COMPUTER PRINT-OUT
By: *MARIA ANTONIETTE P. CUNAHAP*
Encoder

Data Chkd by: ABA / MRR
Quality Assurance

Date Issued _____

CERTIFIED BY:

AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-01-1
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 27-28, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-1

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
1	0.55-1.00	93.80	67.75	26.05	9.66	58.09	45	
2	1.55-2.00	97.57	77.42	20.15	9.53	67.89	30	
3	2.55-3.00	96.30	78.08	18.22	9.97	68.11	27	
4	3.55-4.00	106.75	90.94	15.81	9.82	81.12	19	
5	4.55-5.00	111.50	87.10	24.40	9.97	77.13	32	
6	5.55-6.00	116.10	101.23	14.87	9.52	91.71	16	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
5	4.55-5.00	20 20	37.64 37.80	30.35 30.46	7.29 7.34	10.04 10.00	20.31 20.46		35 35		35
PLASTIC LIMIT											
5	4.55-5.00	P P	22.78 22.80	19.47 19.50	3.31 3.30	9.49 9.50	9.98 10.00			33 33	33

Uncertainty Results: Water Content (%) = ± 0.0360 Liquid Limit = ± 0.0922 Plastic Limit = ± 0.2017

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-502

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI & PA ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-01-2
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 27-28, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-1

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
7	6.55-7.00	106.18	84.64	21.54	9.68	74.96	29	
8	7.55-8.00	106.20	88.30	17.90	9.65	78.65	23	
9	8.55-9.00	100.58	82.29	18.29	9.49	72.80	25	
10	9.55-10.00	100.10	81.67	18.43	9.73	71.94	26	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
PLASTIC LIMIT											

Uncertainty Results: Water Content (%) = ± 0.0274 Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-502

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-NMC-02-1
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 27-28, 2010

TEST REPORT FOR LABORATORY DETERMINATION OF WATER (MOISTURE) CONTENT OF SOIL & ROCK BY MASS

ASTM D 2216 - 05

Test Method ☑ A ☐ B

BOREHOLE NO...BH-2

SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CONTENT (%)	REMARKS
NATURAL MOISTURE CONTENT								
1	0.55-1.00	109.70	77.86	31.84	9.84	68.02	47	
2	1.55-2.00	93.90	65.88	28.02	9.65	56.23	50	
3	2.55-3.00	121.90	92.02	29.88	9.54	82.48	36	
4	3.55-4.00	89.34	67.97	21.37	9.86	58.11	37	
5	4.55-5.00	106.50	85.81	20.69	9.51	76.30	27	
6	5.55-6.00	99.60	82.43	17.17	9.59	72.84	24	

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM Designation : D 4318 - 05, Method B

SAMPLE NUMBER	DEPTH (m)	BLOWS	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	% Retained on 0.425 mm	ATTERBERG LIMIT		REMARKS
									LL	PL	
LIQUID LIMIT											
3	2.55-3.00	20 20	38.10 37.94	30.25 30.14	7.85 7.80	10.10 10.08	20.15 20.06		38 38		38
PLASTIC LIMIT											
3	2.55-3.00	P P	22.78 22.81	19.45 19.45	3.33 3.36	9.56 9.55	9.89 9.90			34 34	34

Uncertainty Results: Water Content (%) = ± 0.0380 Liquid Limit = ± 0.0932 Plastic Limit = ± 0.2038

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:NMC-10-503

SAMPLE SUBMITTED BY :

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

REMARKS: _____

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-01-1
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location.... Centro Oriental, Province of Albay	Date of Test..... October 28-29, 2010

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

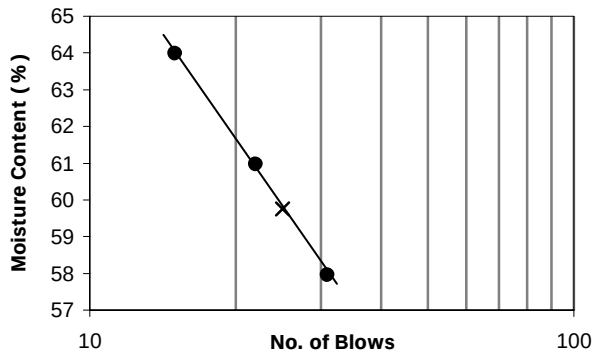
ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-1** DEPTH (m)..... 0.55-1.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-1 USCS CLASS..... MH Elastic SILT

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	A2	A37	A82	B32	B98
WET SOIL + DISH (g)	32.75	35.28	38.40	22.71	22.74
DRY SOIL + DISH (g)	24.27	25.59	27.24	19.52	19.54
WATER (g)	8.48	9.69	11.16	3.19	3.20
DISH MASS (g)	9.64	9.70	9.80	9.53	9.54
DRY SOIL (g)	14.63	15.89	17.44	9.99	10.00
MOISTURE CONTENT	57.96	60.98	63.99	31.93	32.00
NUMBER OF BLOWS	31	22	15	32	

% RETAINED ON 0.425mm 12.48

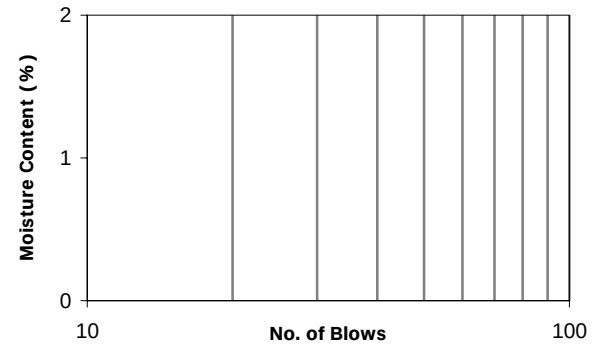


LL = 60 PL = 32 PI = 28

BOREHOLE NO..... DEPTH (m)..... SOIL DESCRIPTION.....
SAMPLE NO..... USCS CLASS.....

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER					
WET SOIL + DISH (g)					
DRY SOIL + DISH (g)					
WATER (g)					
DISH MASS (g)					
DRY SOIL (g)					
MOISTURE CONTENT					
NUMBER OF BLOWS					

% RETAINED ON 0.425mm .....



LL = PL = PI =

Uncertainty Results: I Liquid Limit = ± 0.1355 Plastic Limit = ± 0.2008
II Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-650

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA / MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-02-1
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location.... Centro Oriental, Province of Albay	Date of Test..... October 29-30, 2010

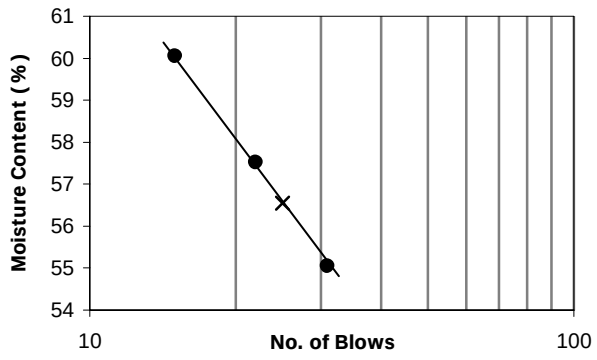
TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-2** DEPTH (m)..... 0.55-1.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-1 USCS CLASS..... MH Elastic SILT

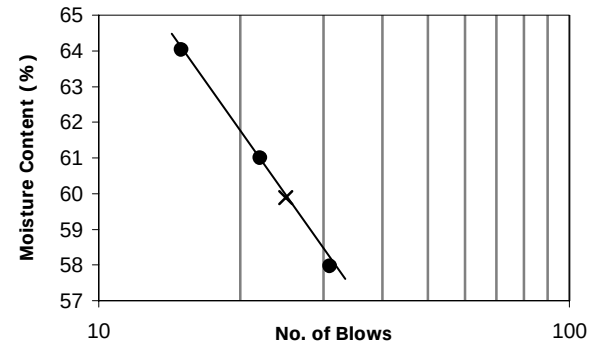
MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	A43	A68	A14	B75	B25
WET SOIL + DISH (g)	32.44	35.27	38.18	22.58	22.61
DRY SOIL + DISH (g)	24.33	25.94	27.55	19.38	19.39
WATER (g)	8.11	9.33	10.63	3.20	3.22
DISH MASS (g)	9.60	9.72	9.85	9.39	9.38
DRY SOIL (g)	14.73	16.22	17.70	9.99	10.01
MOISTURE CONTENT	55.06	57.52	60.06	32.03	32.17
NUMBER OF BLOWS	31	22	15	32	
% RETAINED ON 0.425mm					21.55



LL = 57 PL = 32 PI = 24

BOREHOLE NO..... **BH-2** DEPTH (m)..... 1.55-2.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-2 USCS CLASS..... MH Elastic SILT

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	B17	B24	B90	A48	A32
WET SOIL + DISH (g)	32.52	35.40	38.34	22.68	22.74
DRY SOIL + DISH (g)	24.12	25.67	27.21	19.51	19.56
WATER (g)	8.40	9.73	11.13	3.17	3.18
DISH MASS (g)	9.63	9.72	9.83	9.48	9.55
DRY SOIL (g)	14.49	15.95	17.38	10.03	10.01
MOISTURE CONTENT	57.97	61.00	64.04	31.61	31.77
NUMBER OF BLOWS	31	22	15	32	
% RETAINED ON 0.425mm					18.94



LL = 60 PL = 32 PI = 28

Uncertainty Results: I Liquid Limit = ± 0.1346 Plastic Limit = ± 0.2008
II Liquid Limit = ± 0.1368 Plastic Limit = ± 0.1998

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-651

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA / MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
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PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-AL-02-2
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location.... Centro Oriental, Province of Albay	Date of Test..... October 29-30, 2010

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

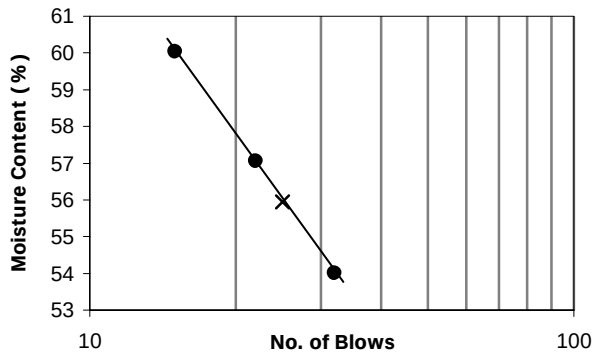
ASTM D 4318 - 05

Method : A ☑ Wet Preparation ☐ Dry Preparation

BOREHOLE NO..... **BH-2** DEPTH (m)..... 6.55-7.00 SOIL DESCRIPTION.....
SAMPLE NO..... S-7 USCS CLASS..... MH Elastic SILT

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER	B52	B21	B63	C85	C57
WET SOIL + DISH (g)	32.70	35.49	38.50	22.67	22.71
DRY SOIL + DISH (g)	24.61	26.12	27.74	19.47	19.49
WATER (g)	8.09	9.37	10.76	3.20	3.22
DISH MASS (g)	9.63	9.70	9.82	9.52	9.54
DRY SOIL (g)	14.98	16.42	17.92	9.95	9.95
MOISTURE CONTENT	54.01	57.06	60.04	32.16	32.36
NUMBER OF BLOWS	32	22	15	32	

% RETAINED ON 0.425mm 7.28

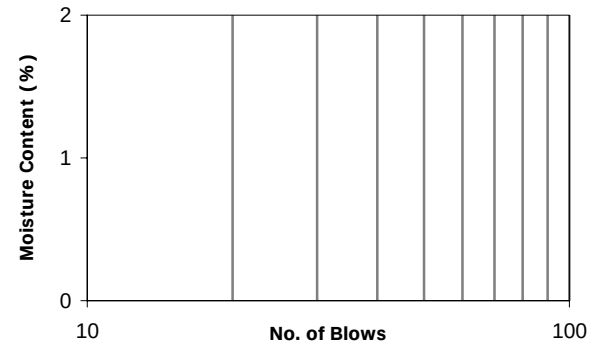


LL = 56 PL = 32 PI = 24

BOREHOLE NO..... DEPTH (m)..... SOIL DESCRIPTION.....
SAMPLE NO..... USCS CLASS.....

MOISTURE CONTENT DETERMINATION	LIQUID LIMIT TRIAL 1	LIQUID LIMIT TRIAL 2	LIQUID LIMIT TRIAL 3	PLASTIC LIMIT TRIAL 1	PLASTIC LIMIT TRIAL 2
DISH NUMBER					
WET SOIL + DISH (g)					
DRY SOIL + DISH (g)					
WATER (g)					
DISH MASS (g)					
DRY SOIL (g)					
MOISTURE CONTENT					
NUMBER OF BLOWS					

% RETAINED ON 0.425mm .....



LL = PL = PI =

Uncertainty Results: I Liquid Limit = ± 0.1330 Plastic Limit = ± 0.2017
II Liquid Limit = --- Plastic Limit = ---

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

LAB.FILE NO.:AL-10-652

SAMPLE SUBMITTED BY :
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

REMARKS:

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

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LABORATORY TECHNICIAN

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GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

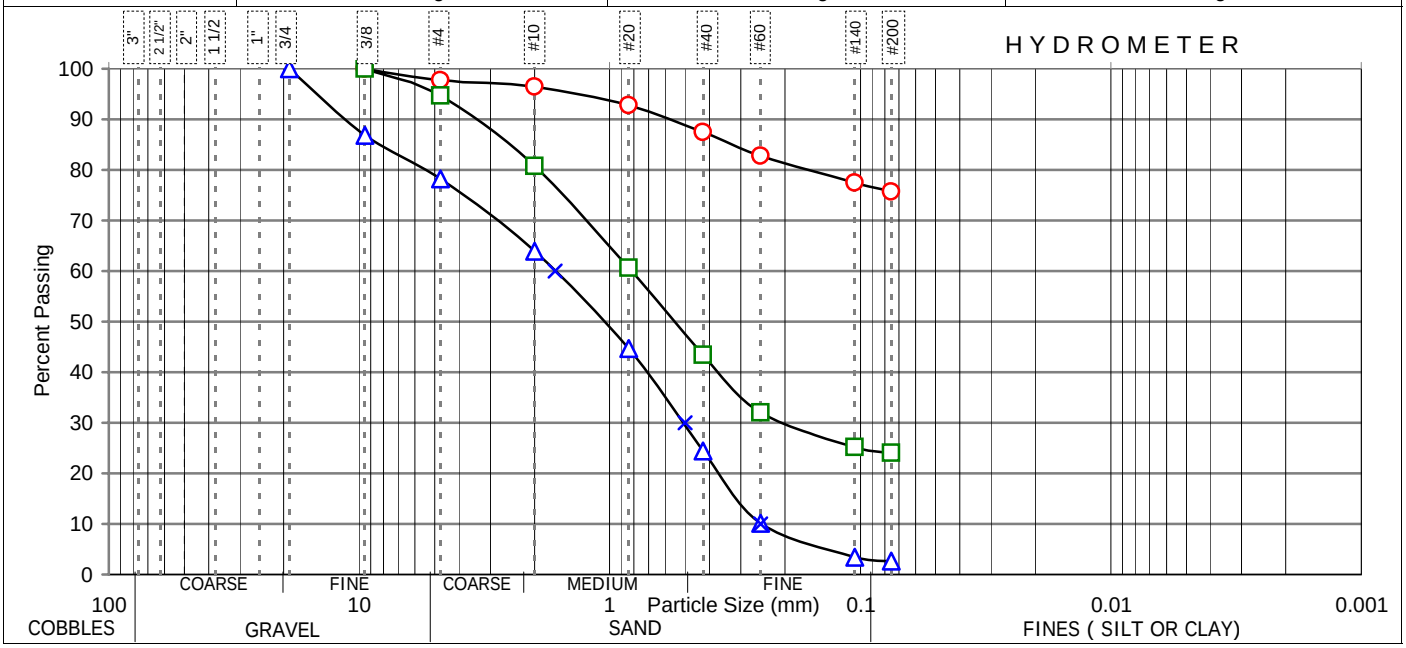
DPWH-BRS Accredited

Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-1
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-1**	○ 1			□ 2			△ 3	
DEPTH (m).....		0.55-1.00			1.55-2.00			2.55-3.00	
SOIL DESCRIPTION.....		Elastic SILT			Silty SAND			Poorly graded SAND	
SIEVE SIZE		Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									100
3/8	9.5			100			100	8.95	13.14	87
4	4.75	1.33	2.29	98	3.64	5.36	95	14.80	21.73	78
10	2.0	2.03	3.49	97	13.08	19.27	81	24.60	36.12	64
20	0.8	4.22	7.26	93	26.71	39.34	61	37.70	55.35	45
40	0.425	7.25	12.48	88	38.38	56.53	43	51.48	75.58	24
60	0.25	9.98	17.18	83	46.11	67.92	32	61.19	89.84	10
140	0.105	13.08	22.52	77	50.79	74.81	25	65.80	96.61	3
200	0.075	14.10	24.27	76	51.52	75.89	24	66.27	97.30	3
OVEN DRIED MASS			58.09 gms			67.89 gms			68.11 gms	



* - with Hydrometer

REMARKS : S-3: Cu = 6.64 Cc = 0.61

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0503 LAB.FILE NO.:GSA-10-404

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

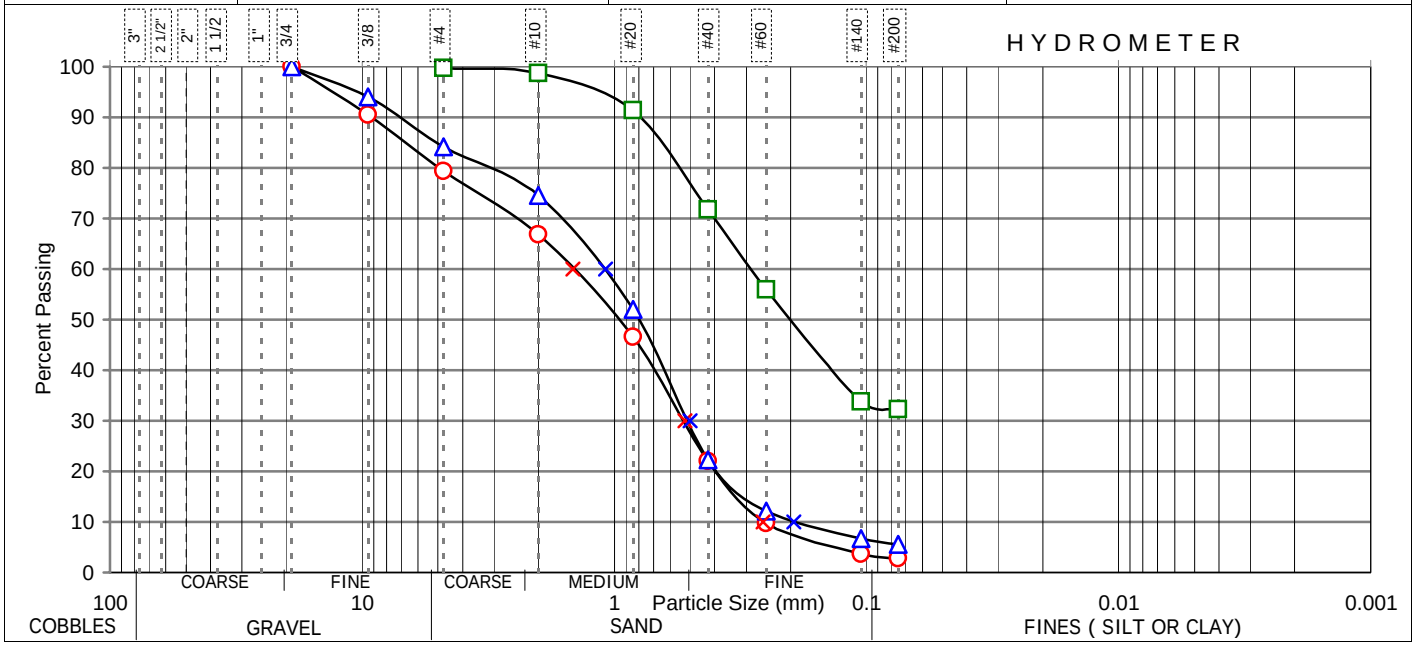
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-2
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-1** ○ 4	□ 5	△ 6
DEPTH (m).....	3.55-4.00	4.55-5.00	5.55-6.00
SOIL DESCRIPTION.....	Poorly graded SAND	Silty SAND	Poorly graded SAND with silt

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0			100						100
3/8	9.5	7.71	9.50	90				5.51	6.01	94
4	4.75	16.71	20.60	79	0.16	0.21	100	14.54	15.85	84
10	2.0	26.91	33.17	67	1.00	1.30	99	23.30	25.41	75
20	0.8	43.29	53.37	47	6.68	8.66	91	44.02	48.00	52
40	0.425	63.22	77.93	22	21.73	28.17	72	71.28	77.72	22
60	0.25	73.25	90.30	10	33.98	44.06	56	80.52	87.80	12
140	0.105	78.10	96.28	4	51.07	66.21	34	85.50	93.23	7
200	0.075	78.82	97.16	3	52.20	67.68	32	86.57	94.40	6
OVEN DRIED MASS			81.12 gms			77.13 gms			91.71 gms	



* - with Hydrometer

REMARKS : S-4: Cu = 5.68 Cc = 0.74
S-6: Cu = 5.57 Cc = 1.19

SAMPLE SUBMITTED BY:
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0422 LAB.FILE NO.:GSA-10-404

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

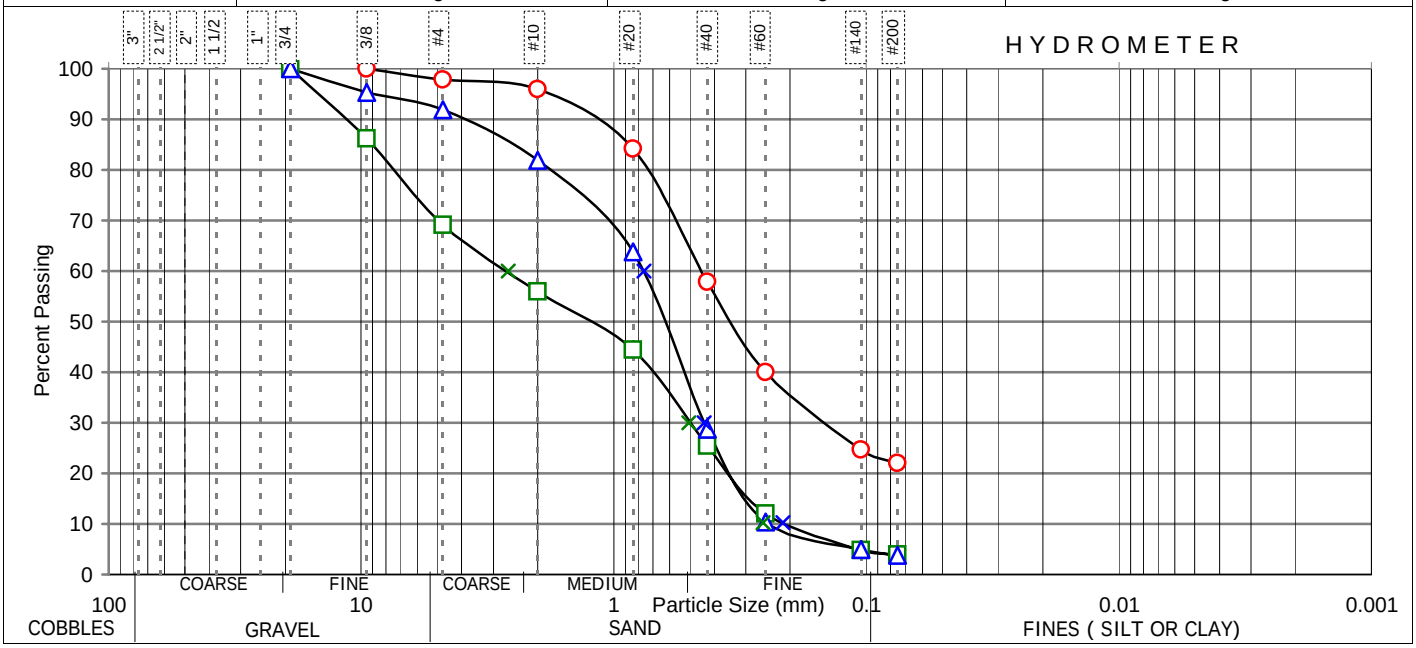
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-3
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

		○ 7	□ 8	△ 9
BH / SAMPLE NO.....	**BH-1**			
DEPTH (m).....		6.55-7.00	7.55-8.00	8.55-9.00
SOIL DESCRIPTION.....		Silty SAND	Poorly graded SAND	Poorly graded SAND

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0						100			100
3/8	9.5			100	10.82	13.76	86	3.37	4.63	95
4	4.75	1.58	2.11	98	24.26	30.85	69	5.88	8.08	92
10	2.0	3.05	4.07	96	34.63	44.03	56	13.14	18.05	82
20	0.8	11.89	15.86	84	43.74	55.61	44	26.35	36.20	64
40	0.425	31.58	42.13	58	58.67	74.60	25	51.89	71.28	29
60	0.25	45.02	60.06	40	69.16	87.93	12	65.23	89.60	10
140	0.105	56.50	75.37	25	74.82	95.13	5	69.20	95.05	5
200	0.075	58.44	77.96	22	75.56	96.07	4	70.00	96.15	4
OVEN DRIED MASS			74.96 gms			78.65 gms			72.80 gms	



* - with Hydrometer

REMARKS : S-8: Cu = 10.19 Cc = 0.38
S-9: Cu = 3.56 Cc = 1.19

SAMPLE SUBMITTED BY:
☐ Walk-in Clients ☑ GPI Field Operator
R. POLIDAN

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

COMPUTER PRINT-OUT
By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

Uncertainty Results: % Finer = ± 0.0468 LAB.FILE NO.:GSA-10-404

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

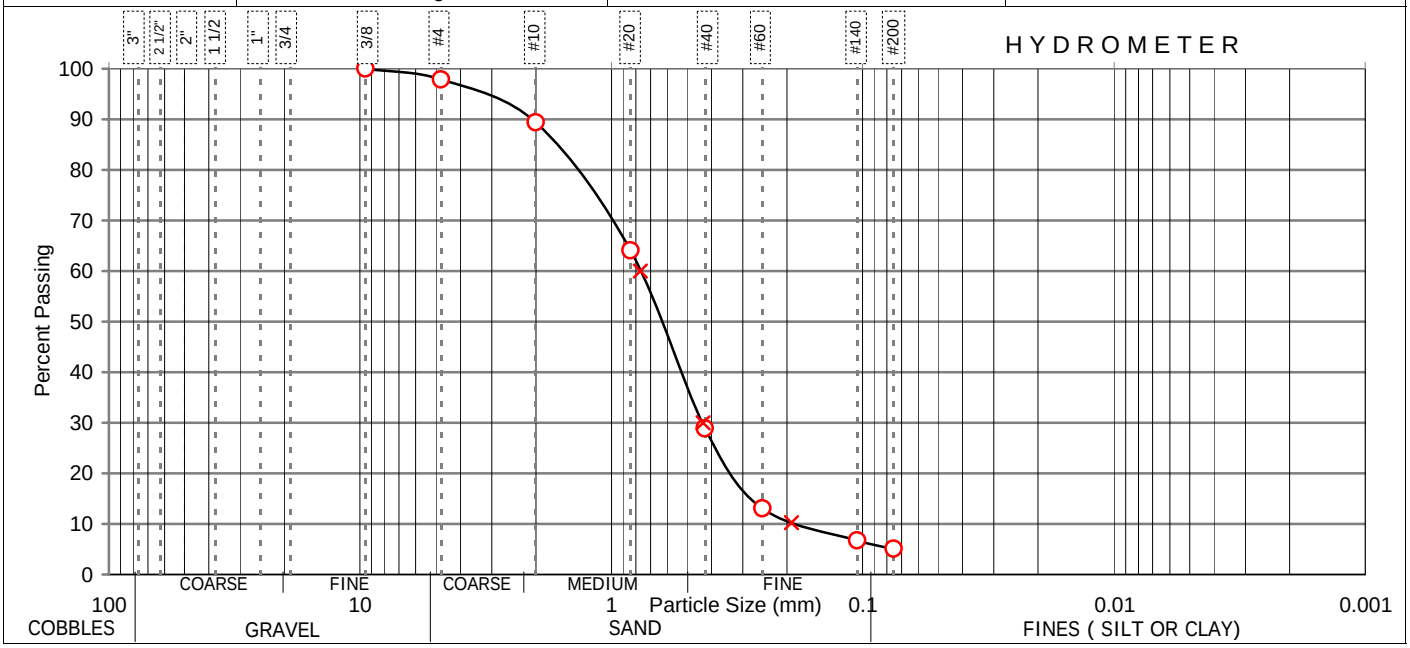
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-01-4
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO..... **BH-1** ○10 □ △
DEPTH (m)..... 9.55-10.00
SOIL DESCRIPTION..... Poorly graded SAND with silt

SIEVE SIZE inches	SIEVE SIZE mm	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer	Cumm.Mass Retained (g)	Cumm.% Retained	Percent Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									
3/8	9.5			100						
4	4.75	1.56	2.17	98						
10	2.0	7.69	10.69	89						
20	0.8	25.83	35.90	64						
40	0.425	51.15	71.10	29						
60	0.25	62.52	86.91	13						
140	0.105	67.14	93.33	7						
200	0.075	68.33	94.98	5						
OVEN DRIED MASS			71.94 gms							



* - with Hydrometer

REMARKS : S-10: Cu = 3.99 Cc = 1.26

SAMPLE SUBMITTED BY:
☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

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Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0471 LAB.FILE NO.:GSA-10-404

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

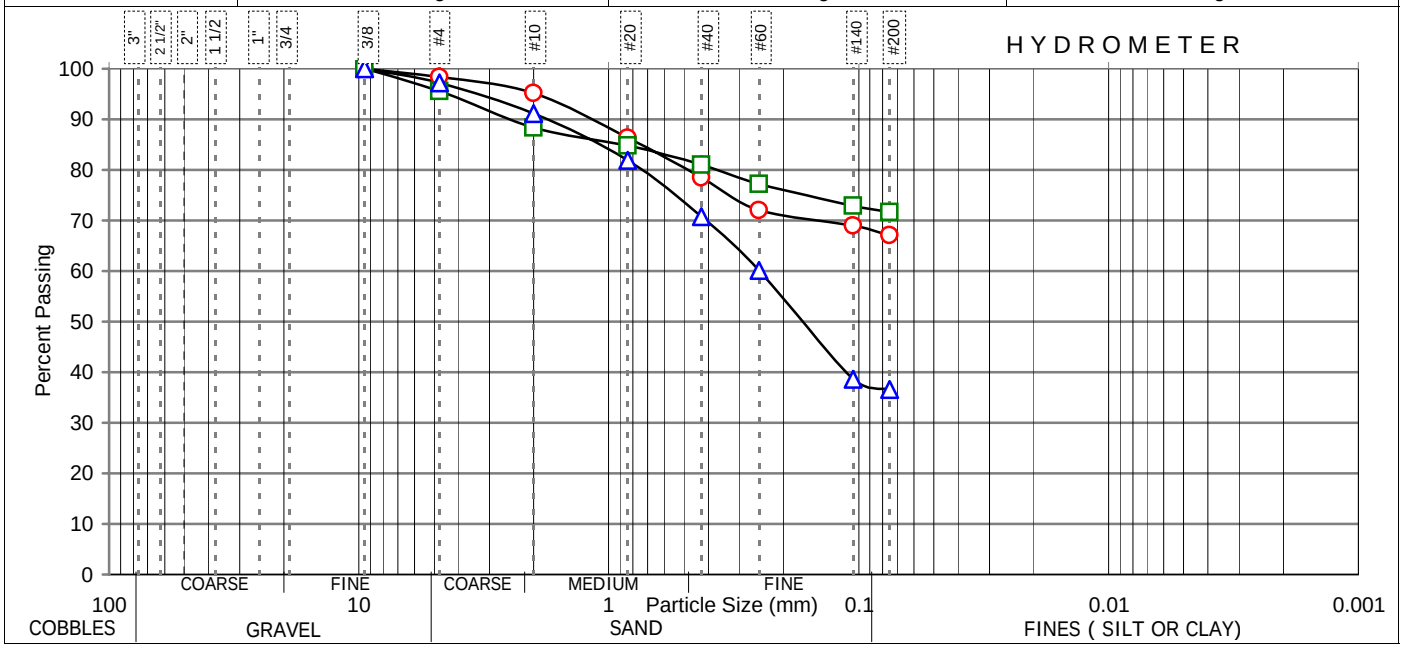
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-02-1
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-2**	○ 1	□ 2	△ 3
DEPTH (m).....		0.55-1.00	1.55-2.00	2.55-3.00
SOIL DESCRIPTION.....		Elastic SILT	Elastic SILT	Clayey silty SAND

SIEVE SIZE		Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0									
3/8	9.5			100			100			100
4	4.75	1.15	1.69	98	2.51	4.46	96	2.31	2.80	97
10	2.0	3.31	4.87	95	6.56	11.67	88	7.30	8.85	91
20	0.8	9.30	13.67	86	8.53	15.17	85	14.93	18.10	82
40	0.425	14.66	21.55	78	10.65	18.94	81	24.08	29.19	71
60	0.25	19.05	28.01	72	12.80	22.76	77	32.89	39.88	60
140	0.105	21.10	31.02	69	15.20	27.03	73	50.60	61.35	39
200	0.075	22.40	32.93	67	15.97	28.40	72	52.30	63.41	37
OVEN DRIED MASS			68.02 gms			56.23 gms			82.48 gms	



* - with Hydrometer

REMARKS :

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued:

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

CERTIFIED BY :
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0454 LAB.FILE NO.:GSA-10-405

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ACCREDITED TESTING LABORATORY
PNS ISO/IEC 17025:2005
LA-2006-097B

GEOTECHNICS PHILIPPINES, INC.

SOILS AND MATERIALS TESTING LABORATORY
119 Sauyo Road, Novaliches, Quezon City

DPWH-BRS Accredited

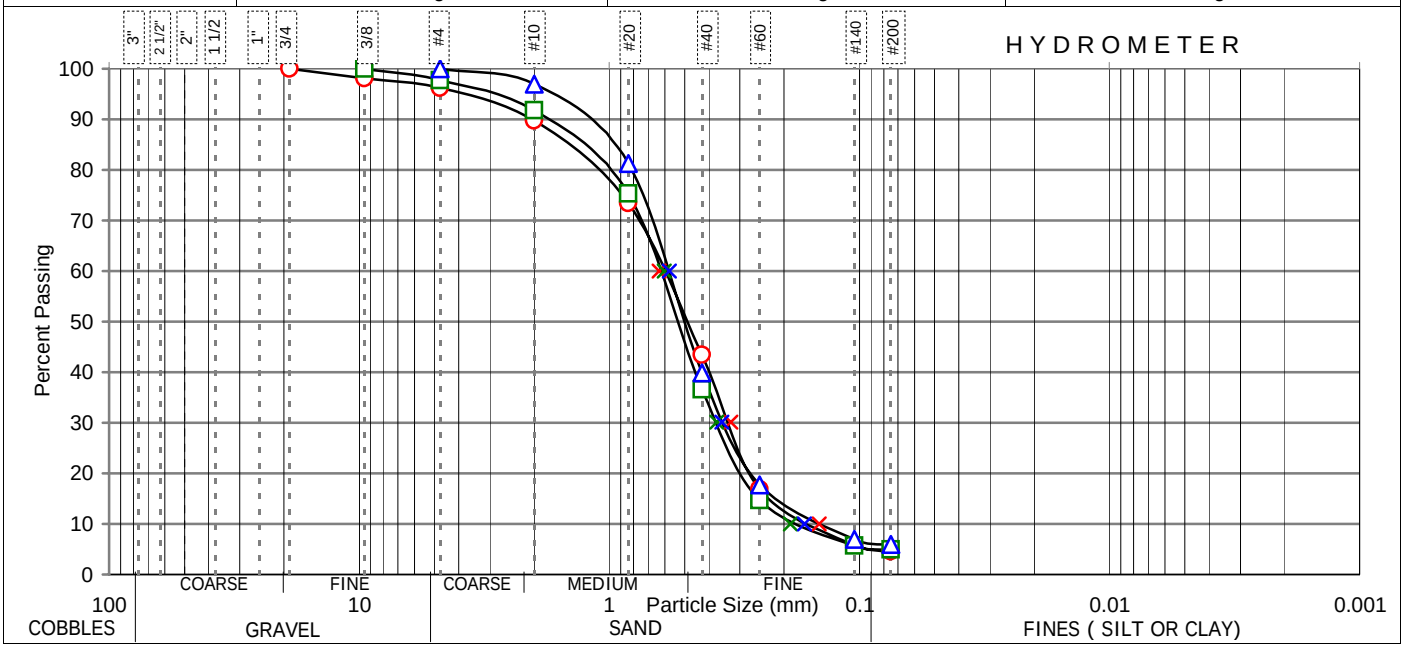
Client..... **MOHRI, ARCHITECT & ASSOCIATES, INC.**	Job Number..... 2209-10.R1-GSA-02-2
Project..... **Proposed Mayon Evacuation Center (Polangui North Central School)**	Date of Receipt..... October 27, 2010
Location..... Centro Oriental, Province of Albay	Date of Test..... October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS

ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO.....	**BH-2**	○ 4	□ 5	△ 6
DEPTH (m).....		3.55-4.00	4.55-5.00	5.55-6.00
SOIL DESCRIPTION.....		Poorly graded SAND with silt	Poorly graded SAND with silt	Poorly graded SAND with silt

SIEVE SIZE		Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1	25.0									
3/4	19.0			100						
3/8	9.5	1.08	1.86	98			100			
4	4.75	2.18	3.75	96	1.77	2.32	98			100
10	2.0	5.93	10.20	90	6.26	8.20	92	2.24	3.08	97
20	0.8	15.46	26.60	73	18.86	24.72	75	13.66	18.75	81
40	0.425	32.88	56.58	43	48.34	63.36	37	43.84	60.19	40
60	0.25	48.30	83.12	17	65.10	85.32	15	59.96	82.32	18
140	0.105	54.70	94.13	6	72.00	94.36	6	67.80	93.08	7
200	0.075	55.45	95.42	5	72.50	95.02	5	68.52	94.07	6
OVEN DRIED MASS			58.11 gms			76.30 gms			72.84 gms	



* - with Hydrometer

REMARKS :

S-4:	Cu =	4.37	Cc =	1.17
S-5:	Cu =	3.19	Cc =	1.22
S-6:	Cu =	3.47	Cc =	1.32

SAMPLE SUBMITTED BY:

☐ Walk-in Clients ☑ GPI Field Operator

R. POLIDAN

TESTED BY : ARTURO Q. AQUINO
LABORATORY TECHNICIAN

COMPUTER PRINT-OUT

By: MARIA ANTONIETTE P. CUNAHAP
Encoder

Data Checked by: ABA/MRR
Quality Assurance

Date Issued: _____

CERTIFIED BY : _____
AUTHORIZED SIGNATORY

Uncertainty Results: % Finer = ± 0.0584 LAB.FILE NO.:GSA-10-405

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage factor of k=2, providing a level of confidence of approximately 95%.

FINAL REPORT

SUBSURFACE INVESTIGATION

PROPOSED MAYON EVACUATION CENTER (2-STOREY)

OAS SOUTH CENTRAL SCHOOL
BRGY. ILAOR NORTE, PROVINCE OF ALBAY

MOHRI, ARCHITECT & ASSOCIATES, INC.

OCTOBER 2010
JOB NO. 2209-10.R0

GEOTECHNICS PHILIPPINES, INC.
GEOTECHNICAL & FOUNDATION CONSULTANTS

DPWH-BRS Accredited

FINAL REPORT

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FINAL REPORT

SUB-SURFACE INVESTIGATION FOR THE PROPOSED MAYON EVACUATION CENTER (2-STOREY) LOCATED AT OAS SOUTH CENTRAL SCHOOL, BRGY. ILAOR NORTE, PROVINCE OF ALBAY

1.0 INTRODUCTION

Geotechnics Philippines, Incorporated (GPI) completed the subsurface soil investigation for the proposed Mayon Evacuation Center. The proposed site explored is located at Oas South Central School Brgy. Ilaor Norte, Province of Albay.

Two (2) boreholes were drilled at the proposed site from October 18 to October 19, 2010. Borings were undertaken down to 8.45m and 8.00 m respectively for both BH-1 and BH-2 below existing natural ground line. Borehole locations are as indicated on the accompanying Boring Plan and Soil Profile Shpeets.

The subsurface soil exploration was undertaken upon the request of Mohri, Architect & Associates, Inc. in order to gain information on the subsurface conditions and bearing characteristics of the underlying soils at site.

The undersigned was tasked to evaluate the results of the completed subsurface soil exploration and to recommend a suitable foundation solution for the proposed structure.

This report embodies the undersigned's engineering analysis and recommendations based mainly on the results of the geotechnical soil borings and pertinent laboratory tests performed on extracted samples.

The results of geotechnical soil borings and laboratory tests can be referred to in the Attachments accompanying this report.

2.0 OBJECTIVES

The geotechnical investigation aims to determine the following:

- Soil Profile
- Engineering properties of the Soil Strata
- Bearing Capacities and Foundation Types
- Settlement conditions of critical areas
- Comment on ground stability and liquefaction potential of the site
- Recommend ground improvement when necessary
- Provide Excavation and Fill Guidelines

In addition to the above mentioned items, matters on implementation and construction shall be given as required.

3.0 BOREHOLE STATIGRAPHY

Two (2) boreholes were driven to investigate the subsurface. The following are the findings:

3.1 Borehole BH-1

Borehole BH-1 extends 10 meters obtaining the following stratification: Firm sandy silt with traces of grave at 0-1 meter, firm fat clays with traces of sand at 1-3 meters, medium dense clayey silty sand at 3-4 meters, medium dense well graded sand with silt at 4-6 meters, Stiff elastic silt at 6-7 meters, medium dense well graded sand with silt at 7-8 meters, medium dense silty sand at 8-9 meters, very stiff elastic silt at 9-10 meters, the extent of the borehole.

The ground water was detected at 0.75 meters from the existing grade.

3.2 Borehole BH-2

Borehole BH-2 extends 10 meters obtaining the following subsurface stratification: Stiff sandy silt at 0-1 meter, firm fat clay at 1-2 meters, very firm elastic silt at 2-3 meters, medium dense poorly graded sand with silt at 3-5 meters, dense poorly graded sand with silt at 5-6 meters, medium dense well graded sand with silt at 6-7 meters, very stiff sandy silt at 7-8 meters, dense silty sand at 8-10 meters, the extent of the borehole.

The ground water table was detected at 0.71 meters from the existing grade.

4.0 FIELD EXPLORATION AND INVESTIGATION

The field exploration implored continuous was boring as the Standard Penetration Test (SPT) was performed at the last 45cm of every change strata or 1.0 meter intervals. The blow counts (N value or NB) were recorded as disturbed samples from the split spoon sampler were retrieved for laboratory testing. The recovered samples were described semi qualitative in terms of extracted length. The extracted soil samples were wrapped in double plastiv bags for moisture and sample protection and were transported to the laboratory for further testing of engineering properties.
Advancing through the hard strata, the same technique was implored. Hard strata are defined over a series of high blow count layers of more than 50 blows or the inability of driving the hammer to penetrate at high blow counts termed as refusal.

4.1 Standard Penetration Test

The Standard Penetration Test (SPT) is a field test used in determining the shear strength of soils from an established correlation. The SPT requires the count of the number of blows that it would take a standard split spoon sampler to penetrate its last 30.5cm (12inches) of the sampler. The standard mass is 63.5 kilograms and the height of the drop is 76.2cm specified as a free drop.

4.2 Hard Strata and Soft Strata Sampling

Hard strata are defined as a consecutive ground resistance of refusal to the standard penetration test of blow counts of 50 with a penetration less than or equal to 25.4mm, This is in accordance to the American Standard for Testing Materials (ASTM) Designated D 1586. Coring techniques were not conducted in the

investigation. Sampling of undisturbed samples for soft cohesive soils was not conducted via pressing the sampler.

4.3 Ground Water Table

The ground water table (GWT) elevation was observed at least 4 hours from the completion of the borehole up to demobilization.

5.0 LABORATORY INVESTIGATION

The retrieved samples were brought to the laboratory in Sauyo Road, Novaliches, Quezon City. Various tests were conducted on all extracted samples with test procedures conforming to the American Standards for Testing Materials (ASTM). The following are the laboratory tests conducted on the soil samples.

Type of Test	ASTM Designation	Description of Test
Soil Classification for Engineering Purposes – Unified Soil Classification System	ASTM D 2487-05	• Standard in classifying the type of soil based on composition and physical properties • These were classified in accordance to grain size, composition, percentage of size in the distribution
Particle Size Distribution – Sieve Analysis	ASTM D 422-63 (Reapproved 2002)	• The test allows the dried or wet soil to pass through a series of sieves in order to determine the distribution of grain sizes. • The distributions of the particles are graphed on a semi log scale • This test aids the previous test in classification
Moisture Content	ASTM D 2216-05	• The test aims to determine the natural content of water in the soil • This is taken as the ratio of water to the ratio of the soil particles • The test uses a weighing scale measuring the initial weight of the soil and the final weight of the soil after drying it in the oven
Atterberg Limits Liquid Limit, Plastic Limit and Plasticity Index	ASTM D4318-05	• Tests determining the limits of cohesive soils in behaving as a plastic or a flowing medium by incrementally changing the water content • The plastic limit is determined by rolling a clay sample to around 1/8 of an inch or 3mm • The liquid limit uses the liquid limit device and determines the number of blows it would take for the slit to close • Correlative values can be used for settlement relations

The results of the laboratory investigation are appended.

6.0 SOIL PROPERTIES

The following are the adapted soil properties for the investigated strata:

Soil Parameters			
Gravels, Sands, Silty Sands and Clayey Sands (Non-cohesive)			
Sands	c	φ	γ (kcf)
Very Loose	0	26	0.085
Loose	0	28	0.100
Medium Dense	0	30	0.110
Dense	0	32	0.120
Very Dense	0	35	0.130
Silts and Clays (Cohesive)			
Silts and Clays	c	φ	γ (kcf)
Very Soft	=(N*10)/2 from Braja Das	0	0.100
Soft		0	0.105
Firm		0	0.115
Stiff		0	0.120
Very Stiff		0	0.125
Hard		0	0.130

7.0 LIQUEFACTION POTENTIAL

The two (2) boreholes showed no potential for liquefaction due to dense and stiff layer underneath.

8.0 BEARING CAPACITY AND FOUNDATION TYPE

Shallow Foundations have good bearing capacities. The following are the allowable net bearing capacities based on Terzaghi's Bearing Capacity Equation:

BH-1:

Depth	Bearing Capacity (kPa)
1.0	96

BH-2:

Depth	**Bearing Capacity (kPa)**
1.0	96

The associated settlement on the other hand is within the tolerable engineering settlement of 25mm. Although the soil bearing capacity is competent, the structural tie beam proved to be efficient during major earthquake.

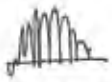
9.0 EXCAVATION AND FILL

Fill for the excavation for footings may utilize the same materials. On the other hand, grade and subgrade materials should be sandy frictional materials.

Fill should be compacted at 95% its maximum dry density. Should the amount of soil be inept, sandy fill may be utilized and should be compacted in the same degree.

Borehole Conclusions and Recommendations

The conclusions and recommendations are based on the data of two (2) boreholes and the geologic map. Deviations from these are expected and should be minimal as the boreholes are typical of an alluvial formation. Should there be any major deviation in the substrata be detected during the excavation phase, may the undersigned through Geotechnics Philippines Inc (02-930-6555) be approached immediately for proper reassessment.



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CE REG No. 053884
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Issued on January 8, 2010
Issued at Quezon City