FINAL REPORT

PROPOSED MAYON EVACUATION CENTER (2-STOREY)

STO. DOMINGO CENTRAL SCHOOL BRGY. NAGSYA, PROVINCE OF ALBAY

MOHRI, ARCHITECT & ASSOCIATES, INC.

OCTOBER 2010 JOB NO. 2209-10.R1





FINAL REPORT

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FINAL REPORT

SUB-SURFACE INVESTIGATION FOR THE PROPOSED MAYON EVACUATION CENTER (2-STOREY) LOCATED AT STO. DOMINGO CENTRAL SCHOOL BRGY, NAGSYA, PROVINCE OF ALBAY

LO INTRODUCTION

Geotechnics Philippines, Incorporated (GPI) completed the subsurface soil investigation for the Proposed Mayon Evacuation Center. The proposed site explored is located at Sto. Domingo Central School, Brgy. Nagsya, Province of Albay.

Two (2) boreholes were drilled at the proposed site from October 20 to October 22, 2010. Borings were undertaken down to 8.45m to 8.25m 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 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
- 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 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.

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

3.3 Ground Water Table

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

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 STATIGRAPHY

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

5.1 Borehole BH-1

Borehole BH-1 extends 8.45 meters obtaining the following stratification: Medium dense silty sand at 0-1 meter, very dense poorly graded sand at 1-1.85 meters, sludge at 1.85-2.85 meters, very dense poorly graded sand at 2.85-3 meters, very dense gravel to cobbles at 3-4 meters, no recovery at 4-5 meters, very dense well graded sand at 5-5.15 meters, very dense cobble at 5.15-6.15 meters, sludge at 6.15-7.15 meters, very dense well graded sand at 7.15-7.3 meters, sludge at 7.3-8.3 meters, very dense well graded sand at 8.3-8.45 meters, the extent of the borehole.

The ground water was detected at 2.31 meters from the existing grade.

5.2 Borehole BH-2

Borehole BH-2 extends 8.25 meters obtaining the following subsurface stratification: Medium dense silty sand at 0-0.85 meters, very dense gravel to cobble at 0.85-1.35 meters, sludge at 1.35-2.35 meters, very dense poorly graded sand at 2.35-2.45 meters, sludge at 2.45-3.5 meters, very dense poorly graded sand at 3.5-6.85 meters, very dense well graded sand at 6.85-8.1, very dense well graded sand at 8.1-8.25 meters, the extent of the borehole.

The ground water table was detected at 0.73 meters from the existing grade.

6.0 SOIL PROPERTIES

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

Soil Parameters			
Gravels, Sands, Silty S	ands and Clayey Sand	ls (No	n-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	Q	35	0.130
Silts and Clays	and Clays (Cohesive)	φ	γ (kcf)
Very Soft		0	0.100
Soft	274101/2	0	0.105
Firm	=(N*10)/2 from	0	0.115
Stiff	Braja Das	0	0.120
2.5	and a second	100	The State of the S
Very Stiff		0	0.125

7.0 LIQUEFACTION POTENTIAL

The two (2) boreholes showed no potential for liquefaction due to dense and stiff layer layers found until the end of boreholes.

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-I:

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.

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. In both cases, the height of fill should be reviewed and adjusted accordingly to adapt minimal settlements.

Borehole Conclusions and Recommendations

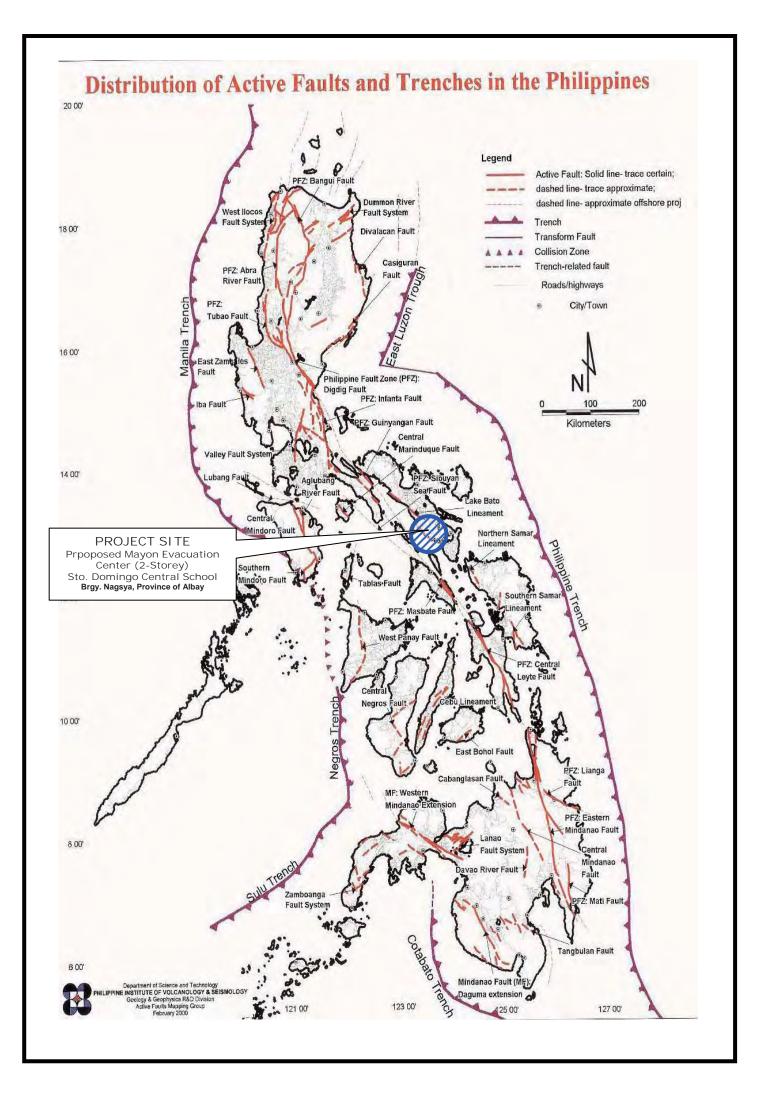
The conclusions and recommendations are based on the data of two (2) boreholes and the geologic map. Deviations from these are expected and should be minimal as the boreholes are typical of an alluvial formation. Should there be any major deviation in the substrata be detected during the excavation phase,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

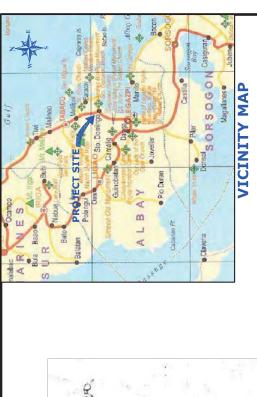
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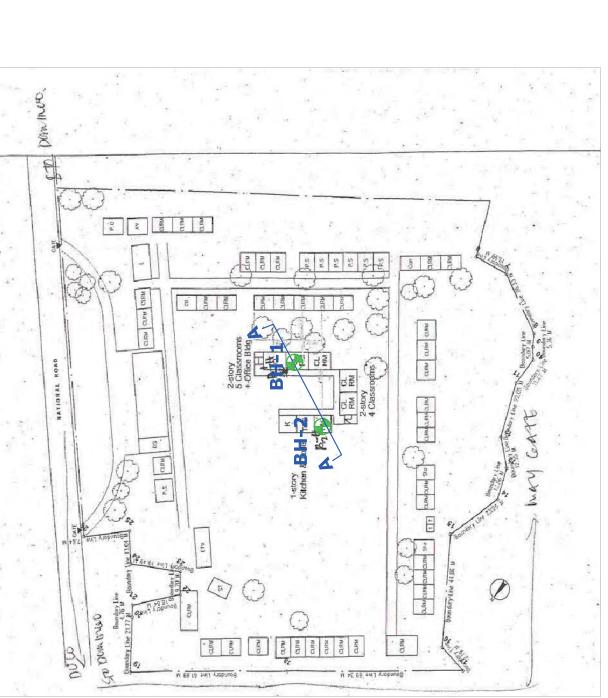
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APPENDICES





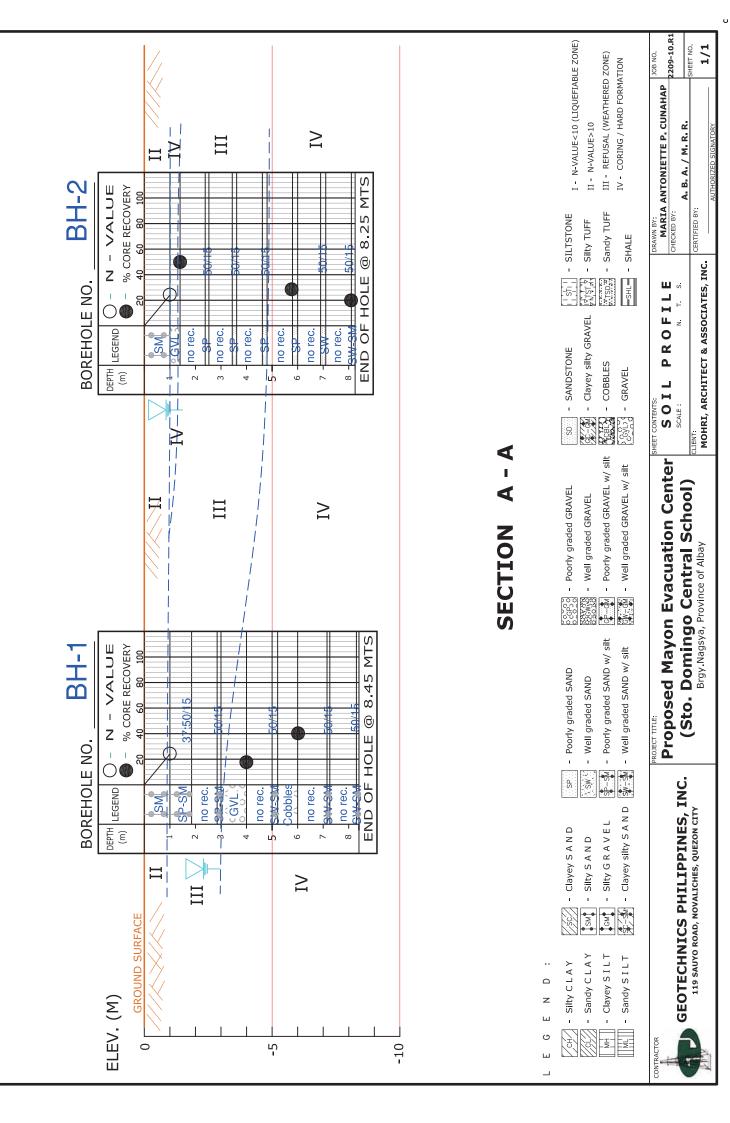




Proposed Mayon Evacuation Center (Sto. Domingo Central School) Brgy. Nagsya, Province of Albay

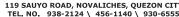
2209-10.R1 SHEET NO. JOB NO. 1/1 MOHRI, ARCHITECT & ASSOCIATES, INC. LOCATION PLAN/VICINITY MAP SCALE

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





GEOTECHNICS PHILIPPINES, INCORPORATED SOILS AND MATERIALS TESTING LABORATORY





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GEOTECHNICS PHILIPPINES, INCORPORATED SOILS AND MATERIALS TESTING LABORATORY 119 SAUYO ROAD, NOVALICHES, QUEZON CITY



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<u> </u>	1					$ \mathbb{M} $													dark gray,	, m		some graver,	
-	1																		NB: (50/1	5)			
8.00	1	C-7	CRG	0	0					-		2											
<u> </u>	• •	S-7	SPT	15	-	0	\blacksquare	\blacksquare	\mathbf{H}	NP		+	\mp	\blacksquare	50,	/II 5	5	H	1 (311 311)		ell graded SAND w ravel, dark gray, i		
	-																		NB: (50/1		raver, dark gray, i	noise	
9.00 -	1																		END (ϽF	BORING AT 8.2	5 METERS	
-	1																						
[.	-																						
10.00	<u> </u>						Ш		Щ										<u> </u>			1	
Type of Sar	mpling	<i>[7777</i>]	I	Type of S							С	ONS	IST	E	۸C,	Υ					MOISTURE	PERCENTA	AGE
ST	ANDARD		Silty CLAY	į		Silty GF	RAVEL				OHESIVE SOI		- 1-								STURE CONTENT	% of SAND and	
PE	NETRATION ST (SPT)		Clayey SILT			Well gra		GRAVE	- -	<u>N-V.</u>	ALUE CONSIS		· Y								GES VALUES 10 - DRY	<u>RANGES</u> <u>V/</u> 0 - 5 - TRA	ALUES CES
	IDISTURBED MPLING		Clayey SAND			GRAVEL	-			2	- 4 – SOFT			4	- 1	.0	– L	LOO:	SE 1	0 -	30 - MOIST	6 - 10 - FEW	1
	DS)		SIIty SAND	į		SILTST	ONE			8	- 8 - FIRM - 15 - STIFF							MED DEN:			70 – VERY MOIST 100 – WET	11 - 25 - LITT 26 - 35 - SON	
	RING RG)		Clayey silty S	r	v`v`d	TUFF					- 30 - VERY S 30 - HARD	STIFF		>	> 50)	- \	VER)	Y DENSE	> 1	LOO – SATURATED	36 - 45 — WIT	Н
		110000 1100000	SAND	, 6	V.V.V	Tuffece	ous S	ILTSTO	ONE	_	JJ - HARD												
REMARKS:	Rec =	Recov	ery in C	entim	eters	<u> </u>	NB	=	No. c	of E	Blows HW	= F	lam	ım	er	W	eig	jht			Prepared by : R.	T. LUSTRE	
Refe	rence I	Joint Sp	pacing:	#1 >3	0cm				1	0 с	m. >#3>3c	m.		#!	5 <	<10	cm	١.			<u> </u>	B.A. / M.R.R.	
				30 cm			0cr	n.		3 c	m. >#4>1c	m.									Certified by :		
			Quality								Core Recove	ery										UTHORIZED SIGNAT	ORY
Description	of Strata	a is acco	rding to U	Inified S	Soil Cl	assifi	cati	on S	ystem)											Date Issued :		



CLIENT...... MOHRI, ARCHITECT & ASSOCIATES, INC. JOB NUMBER...... 2209-10.R1-SUM-1 PROJECT...... Proposed Mayon Evacuation Center (Sto. Domingo Central School) DATE OF RECIEPT.... October 27, 2010 LOCATION....Brgy. Nagsya, Province of Albay DATE OF TEST......Oct. 27-Nov. 2, 2010

SUMMARY OF LABORATORY TESTS

SAMPLE	DEPTH	NMC	ATTER	RBERG (%)	LIMIT,	USCS		SI	EVE AN	ALYSIS	(% FIN	IER) PAS	SSING S	SIEVE N	10.		Remarks
NUMBER	(m)	(%)	LL	PL	PI	Class.	1	3/4	³ / ₈	4	10	20	40	60	140	200	
BH-1																	
1	0.55 - 1.00	30	-	NP	_	SM		100	92	84	76	64	49	39	27	24	-
2	1.55 - 1.85	19	-	NP		SP-SM		100	89	84	77	60	31	17	6	5	-
3	2.55 - 3.00	21	-	NP	-	SP-SM				100	98	75	48	28	9	7	-
4	5.00 - 5.15	19	-	NP	-	SW-SM		100	85	80	79	63	42	25	8	6	-
5	7.15 - 7.50	20	-	NP	-	SW-SM		100	89	86	83	64	41	25	9	6	-
6	8.30 - 8.45	20	-	NP	-	SW-SM		100	83	80	79	60	38	22	8	6	-
BH-2																	
1	0.55 - 0.85	30	-	NP	-	SM			100	96	86	72	53	37	21	18	-
2	2.36 - 2.41	23	-	NP	-	SP				100	94	70	35	17	6	4	-
3	3.41 - 3.56	17	-	NP	-	SP		100	88	83	62	46	24	11	4	3	-
4	4.65 - 4.80	21	-	NP	-	SP			100	90	42	13	9	6	4	3	=
5	5.80 - 5.95	14	-	NP	-	SP		100	82	65	44	28	17	11	5	4	=
6	6.95 - 7.10	15	-	NP	-	SW		100	85	65	38	19	12	9	4	4	-
7	8.10 - 8.25	19	-	NP	-	SW-SM		100	86	72	55	27	17	12	7	6	_
							***************************************						unanonononanononono				

AMPLE SUBMITTED BY:			5514		*!±1	- 11-		_
■ Walk-in Clients ■ GPI Field Operator . POLIDAN			REMA	ARKS:	^ WILL	n nyar	omete	· [
COMPUTER PRINT-OUT By: _MARIA_ANTONIETTE P. CUNAHAP Encoder								
Data Chkd by: ABA / MRR Quality Assurance			CERTIF	IED BY:		ALITHO	DIZED S	IGNATORY
Date Issued					,	MUINU	NIZED 3	IGNATORT







PNS ISO/IEC 17 LA-2006-09	025:2005		TIVE TO SERVICE TO SER			raliches, Qu	ezon City	KY		DPWH-B	RS Accredited
Project	MOHRI, ARCH Proposed May Brgy. Nagsya, P	on Evacu	ation Cer			o Centra	l School)	Date of Re	ceipt	October 2	R1-NMC-01-1 7, 2010 8-30, 2010
TEST RE	EPORT FOR LAE	BORATOR		ASTM D	2216 - (05	DISTURE)	CONTENT	OF SOIL	_ & ROCK	BY MASS
BOREHOLE	E NOBH-1		rest	Method	Ŭ A	□ в					
SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER COI	NTENT (%)		REMARK	S
					NATURAL I	MOISTURE	CONTENT				
1	0.55-1.00	90.00	71.51	18.49	9.99	61.52	3				
2	1.55-1.85	104.20	88.82	15.38	9.47	79.35	1				
3	2.55-3.00 5.00-5.15	98.10	82.61 85.28	15.49	9.56	73.05 75.56	2				
4 5	7.15-7.50	99.58 100.30	85.43	14.30 14.87	9.72 9.61	75.82	2				
6	8.30-8.45	100.30	86.77	15.13	9.87	76.90	2				
0	0.00 0.40	101.70	00.77	13.13	7.07	70.70		0			
	TEST REPOR	RT FOR L					ND PLAS 5, Method		NDEX C	F SOILS	
SAMPLE	DEDTH (m)	DLOME	WET SOIL	DRY SOIL	WATER	DISH	DRY SOIL	% Retained	ATTERBE	RG LIMIT	DEMADIC
NUMBER	DEPTH (m)	BLOWS	DISH (g)	DISH (g)	(g)	MASS (g)	(g)	on 0.425 mm	LL	PL	REMARKS
	I			I	LI	IQUID LIMI	Т				
						ACTIO 1141	_				
					PL	ASTIC LIMI	1				
Uncertainty F	Results:	Water Con	tent (%) =	+ 0.0324	Lia	uid Limit =		Plas	tic Limit =		
l -	ported expanded i										ence of
approximate		,				,	Ü		-		D.:NMC-10-506
	BMITTED BY :					REMARKS:					
☐ Walk-in (PI Field Op	erator								
R. POLIDAN											
COMPUTER I				-							
<i>By:</i> N	MARIA ANTONIETT	e P. Cunah	AP								

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Encoder

Date Issued:

Data Checked by: ABA/MRR

Quality Assurance

TESTED BY : ARTURO Q. AQUINO

LABORATORY TECHNICIAN

AUTHORIZED SIGNATORY

CERTIFIED BY :



ACCREDITED LABORAT PNS ISO/IEC 17 LA-2006-0	7025:2005			SOILS AND) MATERIA		PPINES G LABORATO Jezon City	•		DPWH-E	BRS Accredited
	MOHRI, ARCH					_					R1-NMC-02-1
1 -	Proposed May Brgy. Nagsya, P			nter (Sto	. Doming	go Centra	al School)			October 2	27, 2010 28-30, 2010
LUCATION	. ы уу. таузуа, г	TOVILLE OF	Albay					Date of Te		OCTOBEL 2	20-30, 2010
TEST RE	PORT FOR LAB	ORATOR	Y DETERI)N OF WA) 2216 - (-	DISTURE)	CONTENT	OF SOII	_ & ROCK	BY MASS
DODELIOLI	E NO…BH-2		Test	Method	_	В					
BUREHULI	= NOBH-2					1		***************************************			
SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)	WATER CON	NTENT (%)		REMARK	S
	1		L		NATURAL N	MOISTURE	CONTENT				***************************************
1	0.55-0.85	90.20	71.48	18.72	9.50	61.98	30)			
2	2.36-2.41	106.00	88.15	17.85	9.77	78.38	2:	3			
3	3.41-3.56	101.56	88.36	13.20	9.56	78.80	1	7			
4	4.65-4.80	103.29	86.86	16.43	10.40	76.46	2	1			
5	5.80-5.95	102.49	90.91	11.58	9.60	81.31	14	4			
6	6.95-7.10	105.10	92.94	12.16	9.25	83.69	9 15				
7	8.10-8.25	129.15	109.82	19.33	9.48	100.34	19	9			
	TEST REPOR	RT FOR L					AND PLAS 5, Method		INDEX (OF SOILS	5
SAMPLE	TOTAL		WET SOIL	DBA CUII	WATER	DISH	DRY SOIL	% Retained	ATTERBE	RG LIMIT	
NUMBER	DEPTH (m)	BLOWS	DISH (g)	DISH (g)	(g)	MASS (g)	(g)	on 0.425	LL	PL	REMARKS
			<u> </u>	1	LI	LQUID LIMI	<u> </u>	111111	<u> </u>		
								T			
					PL	ASTIC LIMI	Τ				
	780000000000000000000000000000000000000				ARROGA AR						
					***************************************			-			

Uncertainty Results: Water Content (%) =	± 0.0322	Liq	uid Limit =		Plas	stic Limit =		
Note: The reported expanded uncertainty is based o	n a combined	d uncertain	nty by a cov	erage factor	of k=2, pro	oviding a le	vel of confi	dence of
approximately 95%.						ı	LAB.FILE N	O.:NMC-10-507
SAMPLE SUBMITTED BY :			REMARKS:					
■ Walk-in Clients ■ GPI Field Operator					*****************************			
R. POLIDAN	our.							
COMPUTER PRINT-OUT								
By: MARIA ANTONIETTE P. CUNAHAP Encoder								
Elicodei		TE	ESTED BY :			TURO Q. AC		
Data Checked by: ABA/MRR					LABOR	ATORY TE	CHNICIAN	
Quality Assurance								
Date Issued:		CERT	IFIED BY :	***************************************				
					AUTHO	ORIZED SIG	NATORY	
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Final Report Form - 1							Re	v.6 / Oct. 2010







LA-2000-097B	Drwn-drs accieuleu
ClientMOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number
Project Proposed Mayon Evacuation Center (Sto. Domingo Central School)	Date of Receipt October 27, 2010
Location Brgy. Nagsya, Province of Albay	Date of Test November 2, 2010
TEST REPORT FOR GRAIN SIZE ANA	ALYSIS
ASTM D 422 - 63 (Re-approved 200	07)

	DIDTION		0.55-1.00		Decale	1.55-1.85	- 114	Descri	2.55-3.00	A11 111
	RIPTION		Silty SAND			graded SAND with			ly graded SAND w	ith siit
	SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass		Percent Finer
inches	<u>mm</u>	Retained (g)	Retained	<u>Finer</u>	Retained (g)	Retained	<u>Finer</u>	Retained (g	<u>Retained</u>	
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	4.70	7.64	92	8.76	11.04	89			
4	4.75	9.80	15.93	84	12.55	15.82	84			100
10	2.0	14.68	23.86	76	18.16	22.89	77	1.12	1.53	98
20	0.8	22.29	36.23	64	31.81	40.09	60	18.50	25.33	75
40	0.425	31.33	50.93	49	54.75	69.00	31	37.65	51.54	48
60	0.25	37.52	60.99	39	66.21	83.44	17	52.29	71.58	28
140	0.105	44.80	72.82	27	74.50	93.89	6	66.27	90.72	9
200	0.075	46.70	75.91	24	75.69	95.39	5	68.10	93.22	7
OVEN DR	RIED MASS	6	1.52 gms			79.35 gms			73.05 gms	
	3" 2 1/2" 2" 1 1/2	3/8	#	#10	#20	#60	#200	HYDROI	METER	
100 +						1 1	1			
90 📙						1 1				
80 +				\searrow	N: H		1			
70										
Percent Passing										
ass										
늘 50 十		1 1				+ ++	: 			
<u> </u>										
a 40 +						Q :	i			
30 \downarrow		: : : :	<u> </u>				:			
						4	<u> </u>			
20 +	 						1			
10										
10 T			i				4			
0 _	COARS	E FINE	COARS	SE MED		FINE				
100	0	10	COAKS	DE IVIED	1 Particle Si			0.01		0.001
COBBLES		GRAVEL			SAND				T OR CLAY)	
	Hydrometer					REMARKS	•	Cu = 5.3		1.33
	BMITTED BY:						S-3:	Cu = 5.1	13 Cc =	1.12
☐ Walk-in	Clients 🔽	GPI Field Opera	tor							
R. POLIDAN				_						
COMPUTER						TESTED BY :			Q. AQUINO	
Ву:	MARIA ANTO	ONIETTE P. CUN	AHAP					LABORATO	RY TECHNICIA	N
		Encoder								
5	, ,,					CERTIFIED BY	:			
Data Checi	ked by:	ABA/MRR					-	AUTHORIZ	ED SIGNATOR	/
		Quality Assur	ance	Uncertaint	y Results:	% Finer =	± 0.0501		LAB.FILE NO	D.:GSA-10-406
Date Issue	nd.				reported expa	nded uncertain	ty is based i	on a combine		
שמנט וששל	·				=2, providing a					o, a coverage
					-, _F . 5	2.2. 3. 30mmac	5. appic			

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Rev.6 / Dec. 2009







MOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number
Proposed Mayon Evacuation Center (Sto. Domingo Central School)	Date of Receipt October 27, 2010
Brgy. Nagsya, Province of Albay	Date of Test November 2, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS ASTM D 422 - 63 (Re-approved 2007)

BH / SAMPLE NO DEPTH (m) SOIL DESCRIPTION		5.15	Well	$\frac{\Box}{7.15-7.50}$ graded SAND with silt	ŧ			∆ <u>6</u> 8.30-8.45 aded SAND wi	th silt
SIEVE SIZE		nm.% Percent	Cumm.Mass	Cumm.%	Percent	Cumm.N		Cumm.%	
inches mm		ained Finer	Retained (g)	Retained	<u>Finer</u>	Retained		Retained	Percent Fine
2 1/2 62.5	rtotamou (g)	anioa mioi	rtotairiou (g)	rotairoa	111101	rotanio	<u> </u>	rtotairioa	
2 50.0									
1 1/2 37.5									
1 25.0									
3/4 19.0		100			100				100
3/8 9.5	11.05 14	4.62 85	8.59	11.33	89	13.10	n	17.04	83
4 4.75		9.63 80	10.37	13.68	86	15.2		19.87	80
10 2.0		1.07 79	12.98	17.12	83	15.9		20.73	79
20 0.8		7.06 63	27.36	36.09	64	30.7		40.03	60
40 0.425		7.54 42	44.56	58.77	41	47.5		61.89	38
60 0.25		1.59 25	57.19	75.43	25	59.9		77.97	22
140 0.105		1.60 8	69.12	91.16	9	71.0		92.33	8
200 0.075		4.11 6	70.95	93.58	6	72.6		94.47	6
OVEN DRIED MASS	75.56	gms		75.82 gms				76.90 gms	
3" 2112" 2" 2" 11/2	3/8	# 01#	#20	#140		HYDR	ОМЕ	ETER	
100									
90									
80	<u> </u>			: : : :					
70									
Percent Passing							++++		
-			:	: : :					
50									
90 40				: !!!					
٠				: : :					
30	: : : : : : : : : : : : : : : : : : : :		 : : 						
20									
10									
0 COARS	E FINE	COARSE MEDI	IUM 1 Particle Si	FINE ze (mm) 0.1			0.01		0.001
COBBLES	GRAVEL		SAND			FINES (SILT C	OR CLAY)	
- with Hydrometer				REMARKS :	S-4:	Cu =	6.00		1.07
SAMPLE SUBMITTED BY Walk-in Clients				-	S-5: S-6:	Cu =	6.40		1.00
R. POLIDAN	of Fried Operator			=	3-0.	Cu -	0.04	CC =	1.04
OMPUTER PRINT-OUT				TESTED BY :		ARTU	JRO Q.	. AQUINO	
By: MARIA ANT	ONIETTE P. CUNAHAF	<u> </u>		_		LABORA	TORY	TECHNICIA	N
	Encoder			CEDTIFIED DV					
Data Checked by:				CERTIFIED BY : _		ALITHO	RI7FD	SIGNATOR	/
	Quality Assurance	Uncertaint	v Results:	% Finer =	+ 0 0447	7.01110).:GSA-10-40
Date Issued:		Note: The	-	nded uncertainty	is based of	on a comb ximately 9	ined u		

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Final Report Form - 3&4 Rev.6 / Dec. 2009







Client MOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number2209-10.R1-GSA-02-1
Project Proposed Mayon Evacuation Center (Sto. Domingo Central School)	Date of Receipt October 27, 2010
Location Brgy. Nagsya, Province of Albay	Date of Test November 2, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS ASTM D 422 - 63 (Re-approved 2007)

DEPTH (m)	LE NO		<u>0 1</u> 0.55-0.85		`	□ <u>2</u> 2.36-2.41	,			<u>∆</u> <u>3</u> 3.41-3.56	
	RIPTION		Silty SAND		1	oorly graded SAND				rly graded SANE	
	E SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.N		Cumm.%	Percent
<u>inches</u>	<u>mm</u>	Retained (g)	Retained	<u>Finer</u>	Retained (g)	Retained	<u>Finer</u>	Retained	d (g)	Retained	<u>Finer</u>
2 1/2	62.5										
2	50.0										
1 1/2	37.5										
1	25.0										100
3/4	19.0			100				0.40		11.00	100
3/8	9.5	2.10	2.52	100 96	0.21	0.40	100	9.40		11.93	88
4 10	4.75 2.0	2.18 8.53	3.52 13.76	96 86	0.31 4.33	0.40 5.52	100 94	13.74 29.98		17.44 38.05	83 62
20	0.8	6.33 17.37	28.03	72	23.58	30.08	70	42.93		54.48	46
40	0.425	29.25	47.19	53	50.82	64.84	35	60.2		76.46	24
60	0.423	39.06	63.02	37	65.02	82.95	17	70.14		89.01	11
140	0.105	49.12	79.25	21	73.70	94.03	6	75.80		96.19	4
200	0.075	51.11	82.46	18	74.86	95.51	4	76.5		97.17	3
	RIED MASS		1.98 gms			78.38 gms		7010		78.80 gms	
	3" 2 1/2" 2" 1 1/2	3/4	#	#10	#20	#60	#200	HYDR	ОМ	ETER	
100 +				<u> </u>							
90 +				\\\\ <u>\</u>					+++		
			 	2							
80 +											
70											
Percent Passing				\rightarrow	 						
Pas -											
# 50 +					X						
5 40 							-		+++		
30 +		1 1									
20											
]				
10 +					 	***	<u>'</u>				
0	COARS		COADS	NED MED		FINE	3				
10		10	COARS	SE MED	1 Particle S				.01		0.001
* - with I	 Hydrometer	GRAVEL			SAND	REMARKS	: S-2:	Cu =	4.27	OR CLAY) Cc =	1 34
	BMITTED BY:						S-3:	Cu =	7.83		
		GPI Field Opera	ator					- Ju -		50 -	
R. POLIDAN											
			7	_		TESTED BY:		ARTI.	JRO O	. AQUINO	
	PRINT-OUT	ONIETTE P. CUN	ΙΔΗΔΡ			·				TECHNICIAN	
<i>Dy.</i>		Encoder	V/ \ I/\					2.20101		0 11 01/11	
Data Cha	skad by:					CERTIFIED BY	:				
Data Chec	к <i>еи </i>	ABA/MRR Quality Assu	rance							SIGNATORY	
		Quanty Assul	unicc	Uncertaint	y Results:	% Finer =	± 0.0514		L	AB.FILE NO.	:GSA-10-408
Date Issue	ed:			Note: The	reported expa	anded uncertaint	y is based o	n a comb	ined u	incertainty by	a coverage
						a level of confide				, ,	J
				L							

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Final Report Form - 3&4 Rev.6 / Dec. 2009







ClientMOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number2209-10.R1-GSA-02-2
Project Proposed Mayon Evacuation Center (Sto. Domingo Central School)	Date of Receipt October 27, 2010
Location Brgy. Nagsya, Province of Albay	Date of Test November 2, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS ASTM D 422 - 63 (Re-approved 2007)

					·	• •	•				
	LE NO		<u>O</u> <u>4</u>			<u> 5</u>				<u>∆</u> <u>6</u>	
	DIDTION		4.65-4.80	D	-	5.80-5.95				6.95-7.10	
	RIPTION		rly graded SAN		1	Poorly graded SAND	Demonst	0		II graded SAND	Damasa
	E SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.		Cumm.%	Percent
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1 1/2	37.5										
1 1/2	25.0										
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3/8	9.5			100	14.59	17.94	82	12.8	33	15.33	85
4	4.75	7.87	10.29	90	28.61	35.19	65	29.0		34.71	65
10	2.0	44.26	57.89	42	45.82	56.35	44	52.0		62.21	38
20	0.8	66.49	86.96	13	58.70	72.19	28	67.7		80.89	19
40	0.425	69.96	91.50	9	67.10	82.52	17	73.7		88.09	12
60	0.25	71.60	93.64	6	72.64	89.34	11	76.0		90.92	9
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R. POLIDAN				_							
COMPUTER	PRINT-OUT					TESTED BY :				. AQUINO	
Ву:	MARIA ANTO	ONIETTE P. CU	NAHAP					LABORA	ATORY	TECHNICIAN	
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Date Issued:





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Client	MOHRI,	ARCHITECT	& ASSOC	IATES, IN	IC.		Job Numbe	er		
Project	Proposed	Mayon Evac	uation Cer	nter (Sto. I	Domingo Cer	itral School)	Date of Re	ceipt	October 27	, 2010
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2	50.0									
1 1/2	37.5									
1	25.0									
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factor of k=2, providing a level of confidence of approximately 95%.

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage

FINAL REPORT

PROPOSED MAYON EVACUATION CENTER (2-STOREY)

GOGON CENTRAL SCHOOL BRGY. GOGON, PROVINCE OF ALBAY

MOHRI, ARCHITECT & ASSOCIATES, INC.

OCTOBER 2010 JOB NO. 2209-10.R1





FINAL REPORT

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119 Sauyo Road, Novaliches Quezon City, Philippines

Business development 9306555

Customer Service Fax 9382124/9353730 4561140

Homepage Email www.geophil.com

FINAL REPORT

SUB-SURFACE INVESTIGATION FOR THE PROPOSED MAYON EVACUATION CENTER (3-STOREY) LOCATED AT BRGY. GOGON, 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 Brgy. Gogon, Province of Albay.

Two (2) boreholes were drilled at the proposed site on October 23, 2010. Borings were undertaken down to 10m for both BH-1 and BH-2 below existing natural grade 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 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 plastic 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.

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.

3.3 Ground Water Table

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

4.0 Laboratory Investigation

The retrieved samples were brought to the laboratory in 119 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 – Unitied 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 Statigraphy

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 - 4.00	Silty SAND	Firm	11~19
4.00 - 5.00	Poorly graded SAND	Loose	8
5.00 - 6.00	Elastic SILT	Firm	13
6.00 - 9.00	SAND	Firm	12 ~ 17
9.00 - 10.00	SAND	Dense	>50

The ground water was measured at 0.81 meters from the existing ground.

5.2 Borehole - BH-2

Depth (m)	Soil Classification	Consistency	N-Value
0.00 - 2.00	Silty SAND	Loose	8
2.00 - 4.00	SAND	Firm	13~28
4.00 - 5.00	Clayey SAND	Loose	8
5.00 - 6.00	Elastic SAND	Very Stiff	27
6.00 - 7.00	Silty SAND	Firm	16
7.00 - 8.00	SAND	Dense	32
8.00 - 10.00	SAND	Firm	10~17

The ground water table was measured at 0.8 ~ 0.83 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 Sand	s and Clayey Sands (No	n-coh	esive)
Sands	c	φ	y (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	ф	y (kcf)
Very Soft		0	0.100
Soft	Turne steems	0	0.105
Firm	=(N*10)/2 from Braja	0	0.115
Stiff	Das	0	0.120
Very Stiff		0	0.125
Hard		0	0.130

7.0 Liquefaction Potential

The two boreholes showed thin layered of potentially liquefiable materials between 4-5 m. The effect would be minimal due to the presence of dense layer in between loose formation.

8.0 Bearing Capacity and Foundation Type

Shallow Foundations

Shallow Foundation is suggested to the proposed 2-storey building. The following are the allowable net bearing capacities based on Terzaghi's Bearing Capacity Equation:

BH-1:

Depth (m)	Bearing Capacity (kPa)
0.5	48
1.0	72

BH-2:

Depth (m)	Bearing Capacity (kPa)
0.5	24
1.0	48

The associated settlement on the other hand is within the tolerable engineering settlement of 25mm. Structural tie beam is suggested to hold the foundation rigid and minimize the effect of differential settlement due to different soil bearing capacity.

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 students within school premises. 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 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

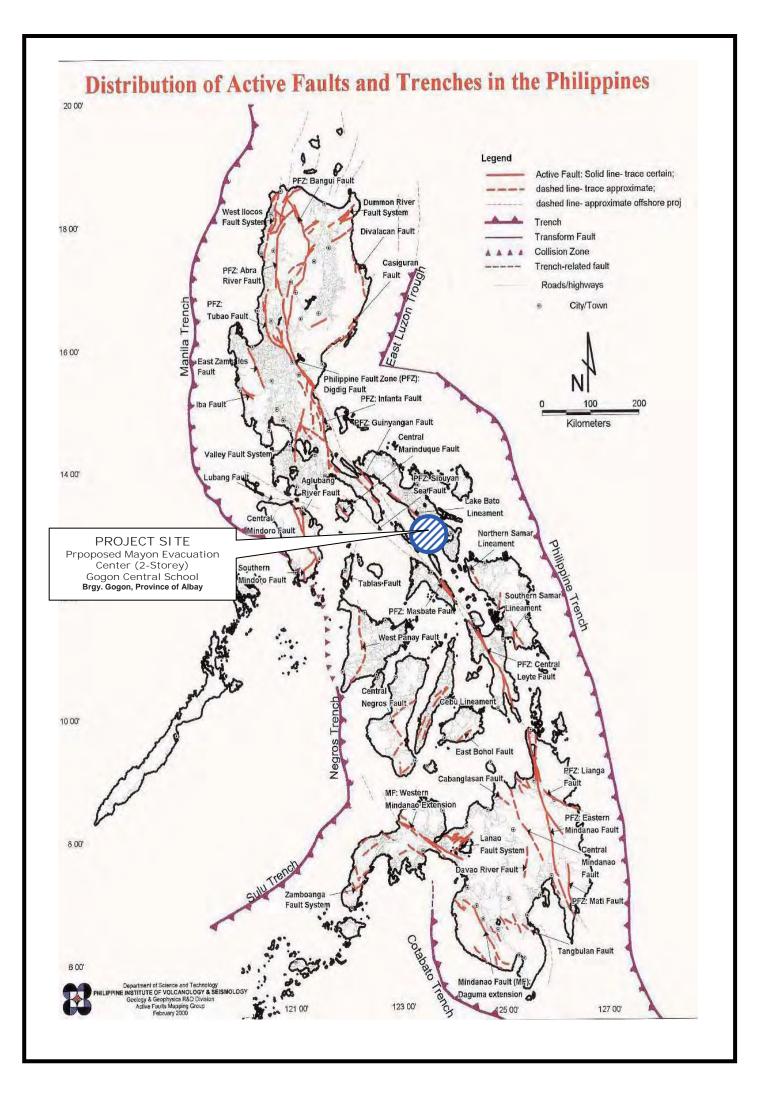
The conclusions and recommendations are based on the data of two (2) boreholes and the geologic map. Deviations from these are expected and should be minimal as the boreholes are typical of an alluvial formation. Should there be any major deviation in the substrata be detected during the excavation phase,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

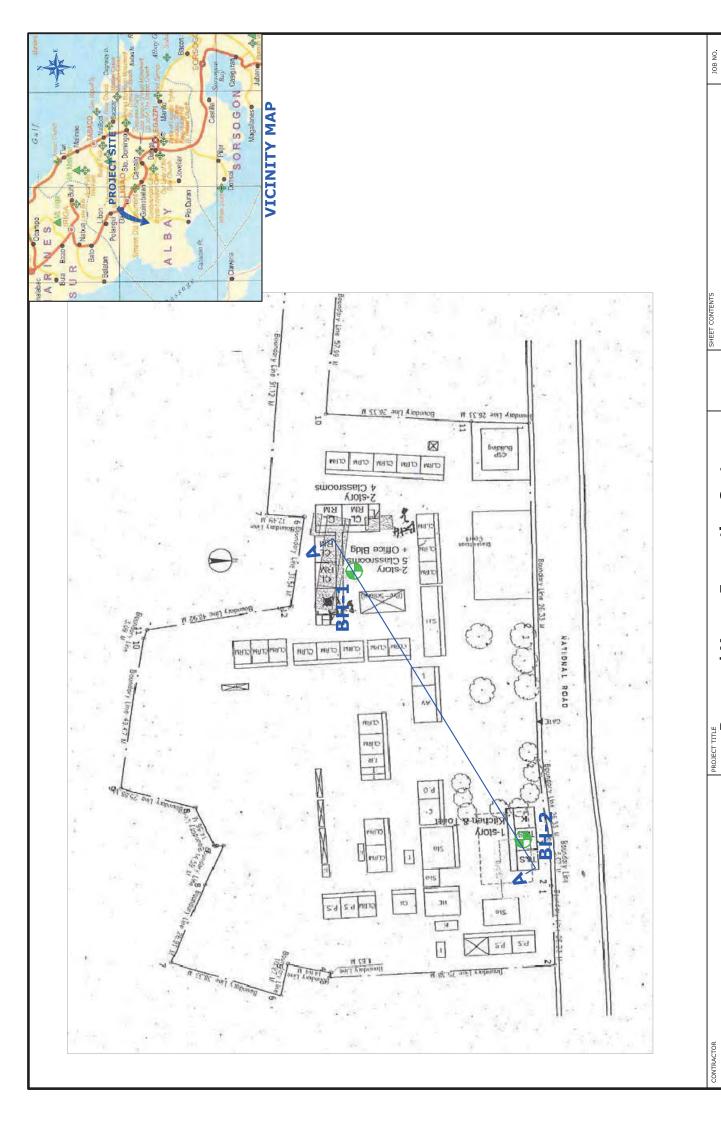
DIOSDADO A. URENA

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

APPENDICES







Proposed Mayon Evacuation Center (Gogon Central School)
Brgy. Gogon, Province of Albay

2209-10.R1

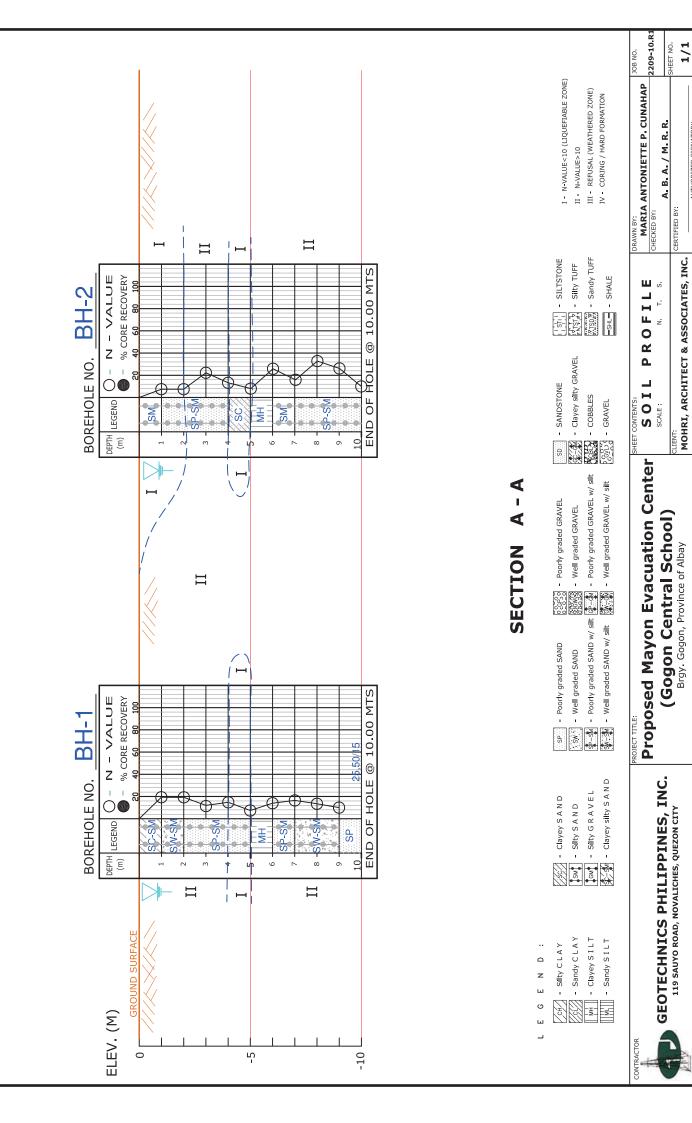
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MOHRI, ARCHITECT & ASSOCIATES, INC.

LOCATION PLAN/VICINITY MAP

SCALE NTS

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





Description of Strata is according to Unified Soil Classification System

GEOTECHNICS PHILIPPINES, INCORPORATED SOILS AND MATERIALS TESTING LABORATORY 119 SAUVO ROAD, NOVALICHES, QUEZON CITY



Hammer Weight 63.50 kg.	LIE	NT	МС	OHR	I, ARC	HITECT	& ASS	OCI	ATE	ES,	IN	C.													BOREHOLE NO.	BH- 1						
PRIVALED	ROJ	ECT											n Ce	ntı	ral School)										JOB NO. 22	09-10.R1-FBL-	01					
Note	OCA	TION										<u> </u>				DRIL	LE)			R.	. P	OLIDAN		SHEET	1 of 1						
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Date Issued :



Description of Strata is according to Unified Soil Classification System

GEOTECHNICS PHILIPPINES, INCORPORATED SOILS AND MATERIALS TESTING LABORATORY



						E	TA												•	30-6555			DI WII DI	SRS Accredit				
LIE		MOHR	I, ARC	HITECT	& ASS	OCI	ATE	s,	IN	c.												BOREHOLE NO.	BH- 2					
ROJI		Propos	sed Ma	yon Eva	acuatio	n Ce	ente	er (Lib	on	Co	mm	unity Colleg										09-10.R1-FBL-	02				
	TION	Brgy.	Gogon	, Provin	ce of A	Albay	/							DRILL					R. F	POLIDAN		SHEET 1 of 1						
IG		KSK S	MALL											LOGG					R. F	POLIDAN		0.00 to 10.00 meters						
		Hamme	r Weight	63.50 Kg										DATE STARTED Oct. 18, 2010 DATE COMPLETED Oct. 18, 2010						-		GROUND LEVEL	- m.					
	100		ght 76.2											NORT			: I E L		Oct	. 18, 20	10	WATER LEVEL EASTING	0.83 m.					
ETH		WASH	BORI	NG										NORT	ши				_			EASTING	-					
												FΙ	NAL BOR	IN	G	LO	G											
	PTH	SOIL	SAMPLE			RQD	ı	L N	-0-	—1	ı	ΡI	CONSISTENCY		- %	V - Cor	re R	eco	very		sc	DIL DESCRIPTION		OTH TE DA				
(r	'') - -	SYMBOL	NUMBER	SAMPLIN	IG (cm)	(70)	ΝÎ	1	Щ	80 II	H				Ť	20 4	H	T		(SM) S	ilty CAN	D, fine to coars	e grained with	+				
, : :	-		6.4	GDT.	10							NB									nount o	f gravel, dark g						
ŀ	1.00 -		S-1	SPT	40	-						NP	LOOSE	8	+	\parallel						graded SAND el, dark gray, m		1				
Ė	2.00 -		S-2	SPT	45	_						NP		8		Ш				NB: (4))(3)(5)	, , , ,						
ŀ	-						(SP-SM)with traces of gravel NB: (10)(10)(13)										:I											
-	3.00 -		S-3	SPT	32	-	\prod	\parallel				NP	MEDIUM DENS	23	\parallel	ϕ	$\prod_{i=1}^{n}$	\parallel		ND. (10	5)(10)(1	13)						
-	-		S-4	SPT	40							NP		13		$\ $				(SP-SM NB: (5)		little amount of	gravel					
-	4.00 -		3-4	SFI	40					T		INF		13						(SC) CI NB: (2)		ND, dark gray,	very moist					
F	5.00 -		S-5	SPT	45	-		 				13	LOOSE	8	-	\prod		\parallel										
	- 6.00 -		S-6	SPT	45	-						20	VERY STIFF	27						gravel,		ND, fine to coarse grained with of gravel, dark gray, very moist						
-	-		S-7	SPT	45	_						NP	MEDIUM DENS	SE 16						little ar								
-	7.00 -		3-7	SFI	43					Ħ		INF		10		∜		T		little an	nount of	graded SAND v gravel, dark gi						
Ē	- 8.00 -	• •	S-8	SPT	39	-	\prod	\parallel				NP	DENSE	32				+		<u> </u>	NB: (12)(15)(17) (SP-SM)with traces of gravel							
-	- - -		S-9	SPT	37	_						NP	MEDIUM DENS	SE 27							0)(12)(1		'					
	9.00 -															ľ				(SP-SM NB: (7))very (5)(5)	moist						
ŀ	10.00		S-10	SPT	45	<u>_</u> _						NP		10		Ш	Ш		Ш	/ENI	OF BC	DRING AT 10.0	0 METERS\					
/pe	of San	mpling		-	Type of S	<u>Soil</u>					1		C	ONSI	ST	EN	CY				M	OISTURE	PERCENTA	AGE				
	PEI	ANDARD NETRATION ST (SPT)		Silty CLAY Clayey SILT			Silty Well	grade		AVEL	Ī		COHESIVE SOII	_	1	N-VA	LUI	Ξ.	CON	SS SOILS SISTENCY	MOIST RANGE	URE CONTENT S VALUES		ALUES				
	SAI (UI	IDISTURBED MPLING DS)		Clayey SAND Silty SAND Clayey silty:	1		With S GRAV SILTS	/EL STONI				2 4 8	- 2 - VERY S - 4 - SOFT - 8 - FIRM - 15 - STIFF - 30 - VERY S			4 - 10 - 30 -	10 30 50	_ _ _	LOO MED DEN	IUM DENSE	l	- MOIST - VERY MOIST 0 - WET	0 - 5 - TRA 6 - 10 - FEW 11 - 25 - LITT 26 - 35 - SOM 36 - 45 - WIT	/ TLE ME				
. NA ^	RKS:	RG)	100 6	SAND	E	4 4 4 4 4	Tuffe						30 — HARD									Orangrad by .						
1*1 <i>F</i>				ery in C				Ν	ıB :	= 1			Blows HW cm. >#3>3c	= Ha		me #5			_			o	P. CUNAHAP					
	кеге	rence .	JUINE S	pacing:	#1 >3			10								# 3	`	rcr				Certified by :	B.A. / M.R.R.					
												~ ~	:m. >#4>1c	m								certified by .						

Date Issued :



CLIENT MOHRI, ARCHITECT & ASSOCIATES, INC.	JOB NUMBER 2209-10.R1-SUM-1
PROJECT Proposed Mayon Evacuation Center (Gogon Central School)	DATE OF RECIEPT October 27, 2010
LOCATIONBrgy. Gogon, Province of Albay	DATE OF TEST October 27-29, 2010

SUMMARY OF LABORATORY TESTS

SAMPLE	DEPTH	NMC	ATTER	RBERG (%)	LIMIT,	USCS		SI	EVE AN	ALYSIS	(% FIN	IER) PAS	SSING S	SIEVE N	IO.		Remarks
NUMBER	(m)	(%)	LL	PL	PI	Class.	1	³ / ₄	³ / ₈	4	10	20	40	60	140	200	
BH-1																	
1	0.55 - 1.00	29	37	33	4	SC-SM			100	98	92	82	65	49	37	35	-
2	1.55 - 2.00	20	-	NP	-	SW-SM			100	94	83	68	51	33	14	11	-
3	2.55 - 3.00	27	-	NP	-	SP-SM			100	97	89	70	43	22	9	7	-
4	3.55 - 4.00	29	-	NP	-	SP-SM		100	96	92	86	77	65	32	9	7	-
5	4.55 - 5.00	21	-	NP	-	SP-SM		100	97	93	85	75	49	24	9	6	-
6	5.55 - 6.00	48	62	32	30	MH					100	98	95	90	83	80	-
7	6.55 - 7.00	25	-	NP	-	SP-SM			100	97	93	72	35	15	6	5	_
8	7.55 - 8.00	30	-	NP	-	SW-SM		100	99	97	95	78	46	24	13	11	-
9	8.55 - 9.00	25	-	NP	-	SW-SM		100	98	96	85	64	45	24	9	7	=
10	9.55 - 10.00	26	-	NP	-	SP				100	99	90	51	21	4	3	-
BH-2																	
1	0.55 - 1.00	29	-	NP	-	SM		100	95	80	74	63	49	36	22	20	
2	1.55 - 2.00	28	-	NP	-	SP-SM		100	99	95	90	82	68	52	14	10	
3	2.55 - 3.00	26	-	NP	-	SP-SM			100	97	92	80	61	37	11	7	
4	3.55 - 4.00	28	-	NP	-	SP-SM		100	95	87	78	68	56	42	14	10	
5	4.55 - 5.00	40	46	33	13	SC				100	97	89	75	65	52	49	
6	5.55 - 6.00	46	51	31	20	MH			100	99	98	91	80	70	59	55	
7	6.55 - 7.00	30	-	NP	-	SM		100	94	80	64	50	41	33	22	21	
8	7.55 - 8.00	27	-	NP	-	SP-SM		100	92	86	80	70	44	26	9	7	
9	8.55 - 9.00	25	-	NP	-	SP-SM			100	98	95	81	51	31	13	10	
10	9.55 - 10.00	30	-	NP	-	SP-SM				100	98	87	48	23	9	7	

10	9.55 - 10.00	30	-	NP	-	SP-SM		100	98	87	48	23	9	7		
																-
																-
SAMPLE SUB	MITTED BY :															
☐ Walk-in (Clients	SPI Fiel	d Opera	ator					REMA	ARKS:		* with	n hydr	omete	r	
R. POLIDAN	V															
COMPUTER By: _MAR	PRINT-OUT PIA ANTONIETTE F Encoder	P. CUN	AHAP													
Data Chkd	by:ABA / M								CERTIF	IED BY:						
	Quality As	suranc	е										AUTHO	RIZED S	IGNATORY	
Date Issued	d															

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ACCREDITED 1 LABORATO PNS ISO/IEC 17 LA-2006-09	DRY 025:2005					LS TESTING aliches, Qu	G LABORAT ezon City	ORY		DPWH-E	BRS Accredited
Project	MOHRI, ARCH Proposed May Brgy, Gogon, Pr	on Evacu	ation Cer			ral Schoo	I)	Date of Re	ceipt	October 2	R1-NMC-01-1 27, 2010 27-28, 2010
	PORT FOR LAB		Y DETERN	ASTM D	2216 - 0	5_	ISTURE)				
BOREHOLE	NOBH-1		Test	Method	✓ A	В					
SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)		CONTENT %)		REMARK	(S
				ľ	NATURAL M	OISTURE (CONTENT				
1	0.55-1.00	98.45	78.46	19.99	9.80	68.66		29			
2	1.55-2.00	107.30	91.14	16.16	10.27	80.87		20			
3	2.55-3.00	110.90	89.59	21.31	9.64	79.95		27			
4	3.55-4.00	117.40	93.12	24.28	9.70	83.42		29			
5	4.55-5.00	103.64	87.27	16.37	9.68	77.59		21			
6	5.55-6.00	115.38	81.01	34.37	9.72	71.29	2	18			
SAMPLE	TEST REPOR	BLOWS	ASTM WET SOIL	Designat	tion : D 4	318 - 05 DISH	, Method	B % Retained		ERG LIMIT	S REMARKS
NUMBER	<i>DEI</i> 111 (111)	BEOWG	DISH (g)	DISH (g)	(g)	MASS (g)	(g)	on 0.425 mm	LL	PL	TALIVII TARO
					110	L QUID LIMIT	-	111111			
		20	37.80	30.32	7.48	10.60	19.72		37		
1	0.55-1.00	20	37.94	30.44	7.50	10.65	19.79		37		37
					DI A	ACTIC LIMIT	Г				
		Р	22.74	19.46	3.28	ASTIC LIMIT 9.53	9.93			33	
1	0.55-1.00	P	22.76	19.47	3.29	9.54	9.93			33	33
Uncertainty F	Results:	Water Con	tent (%) =	+ 0.0298	Lia	uid Limit =	+ 0.0948	Plas	stic Limit =	+ 0.2027	
,	ported expanded										fidence of
approximatel		,				5 5	J	, ,	_		O.:NMC-10-500
	MITTED BY :					REMARKS:				LIV.I ILL IV	J 10-300
Walk-in (GPI Field Op	erator			VLINIAKV2:					
R. POLIDAN		ioid op	0.01								
	DUNT OUT			-							
COMPUTER F By: M	PRINT-OUT IARIA ANTONIETT	E P. CUNAH	AP								

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Data Checked by:

ABA/MRR

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TESTED BY : ARTURO Q. AQUINO

LABORATORY TECHNICIAN

AUTHORIZED SIGNATORY

CERTIFIED BY :







LABORATO PNS ISO/IEC 17 LA-2006-0	025:2005					LS TESTING aliches, Qu		ORY	DPWH-BRS Accredited		
Client	MOHRI, ARCH	IITECT &	ASSOCIA	TES, INC	•			Job Numbe	er	2209-10.I	R1-NMC-01-2
Project	Proposed May	on Evacu	ation Cer	nter (Gog	on Centr	al Schoo	I)	Date of Re	ceipt	October 2	27, 2010
Location	Brgy. Gogon, Pr	ovince of A	Albay					Date of Te	st	October 2	27-28, 2010
TEST RE	PORT FOR LAB	ORATOR'				-	ISTURE)	CONTEN	T OF SOI	L & ROCI	K BY MASS
				ASTM D		_					
BOREHOLE	E NOBH-1		Test	Method	✓ A	∐ В					
SAMPLE	DEPTH (m)		DRY SOIL		DISH	DRY SOIL		CONTENT		REMARK	(S
NUMBER	,	DISH (g)	DISH (g)	(g)	MASS (g)	(g)	(9	6)			
		-		1	⊥ NATURAL M	IOISTURE (CONTENT				
7	6.55-7.00	108.34	88.51	19.83	9.72	78.79		!5			
8	7.55-8.00	104.60	82.80	21.80	9.71	73.09	3	0			
9	8.55-9.00	111.40	91.31	20.09	9.88	81.43	2	15			
10	9.55-10.00	105.10	85.20	19.90	9.64	75.56	2	16			
	TEST REPOR	RT FOR L	IQUID L	IMIT, PI	LASTICI	LIMIT A	ND PLAS	STICITY	INDEX (OF SOIL	S
						318 - 05					
							,				
								%	ATTERRE	RG LIMIT	
SAMPLE	DEPTH (m)	BLOWS		DRY SOIL	WATER	DISH	DRY SOIL	Retained	711121102		REMARKS
NUMBER			DISH (g)	DISH (g)	(g)	MASS (g)	(g)	on 0.425 mm	LL	PL	
					1.10	L QUID LIMIT	-	111111			
					LIC	ZOID LIMIT					
	T		1	T.	PLA	ASTIC LIMIT	Γ	1	1	1	
Uncertainty	Doculto:	Motor Car	topt (0/)	. 0.0072	11	uid Limit		DI	stic Limit		
			tent (%) =			uid Limit =			stic Limit =		idones of
	ported expanded	uncertainty	is based on	a combine	a uncertain	ity by a cov	erage racto	r or k=2, pr			
approximate	ly 95%.									LAB.FILE N	D.:NMC-10-500
	BMITTED BY :					REMARKS:					
☐ Walk-in	Clients 🗹 🤆	SPI Field Op	erator								
R. POLIDAN				=							
COMPUTER	PRINT-OUT										
	IARIA ANTONIETT	E P. CUNAH	AP								
	Encod				ТІ	STED RV ·		ΔΕ	THRO O	OHINO	

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CERTIFIED BY :

LABORATORY TECHNICIAN

AUTHORIZED SIGNATORY







LABORATO PNS ISO/IEC 17 LA-2006-09	025:2005		SOILS AND MATERIALS TESTING LABORATORY 119 Sauyo Road, Novaliches, Quezon City							DPWH-BRS Accredited		
Client	MOHRI, ARCH	ITECT &	ASSOCIA	TES, INC				Job Numbe	er	.2209-10.	R1-NMC-02-1	
Project	Proposed May	on Evacu	ation Cer	nter (Gog	jon Centr	al Schoo	I)	Date of Re	ceipt	October 2	27, 2010	
Location	Brgy. Gogon, Pro	ovince of A	Albay					Date of Te	st	October 2	27-28, 2010	
TEST REI	PORT FOR LAB	ORATOR		MINATIO ASTM D		-	ISTURE)	CONTEN	T OF SOI	L & ROCH	K BY MASS	
				Method		□в						
BOREHOLE	NOBH-2	1	1	1			I		Γ			
SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL		CONTENT %)		REMARK	(S	
				<u> </u>	 NATHRAL M	I Moisture (ONTENT					
1	0.55-1.00	87.34	69.84	17.50	9.66	60.18		29				
2	1.55-2.00	116.50	93.10	23.40	9.90	83.20	2	28				
3	2.55-3.00	108.00	88.00	20.00	9.64	78.36	2	26				
4	3.55-4.00	110.10	88.39	21.71	9.52	78.87	2	28				
5	4.55-5.00	97.80	72.66	25.14	9.56	63.10	4	10				
6	5.55-6.00	90.55	65.02	25.53	9.65	55.37	4	16				
	TEST REPOR	T FOR L				S18 - 05		В	INDEX	OF SOIL:	S	
SAMPLE			WET SOIL	DRY SOIL	WATER	DISH	DRY SOIL	% Retained	ATTERBE	RG LIMIT		
NUMBER	DEPTH (m)	BLOWS	DISH (g)	DISH (g)	(g)	MASS (g)	(g)	on 0.425 mm	LL	PL	REMARKS	
		1			LIC	QUID LIMIT			1			
					PLA	STIC LIMIT	Γ					
Uncertainty F	Results:	Water Con	tent (%) =	± 0.0380	Liq	uid Limit =		Plas	stic Limit =			
_	ported expanded u										fidence of	
approximatel	ly 95%.									LAB.FILE NO	O.:NMC-10-50	
	MITTED BY :					REMARKS:						
Walk-in (PI Field Ope	erator									
R. POLIDAN												
COMPUTER F	DDINT OUT			_								
1	IARIA ANTONIETTI	E P. CUNAH	AP									

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TESTED BY : ARTURO Q. AQUINO

CERTIFIED BY :

LABORATORY TECHNICIAN

AUTHORIZED SIGNATORY







	119 Sauyo Road, Novaliches, Quezon City							ORY		DPWH-E	BRS Accredited
Project	MOHRI, ARCH Proposed May Brgy. Gogon, Pi	yon Evacu	iation Cei			ral Schoo	1)	Job Number			
TEST RE	PORT FOR LAE	BORATOR'		MINATIO ASTM D t Method	2216 - 0		ISTURE)	CONTEN	T OF SOI	L & ROCI	K BY MASS
BOREHOLE	E NO…BH-2										
SAMPLE NUMBER	DEPTH (m)	WET SOIL DISH (g)	DRY SOIL DISH (g)	WATER (g)	DISH MASS (g)	DRY SOIL (g)		CONTENT %)		REMARK	(S
				1	NATURAL M	MOISTURE C	CONTENT				
7	6.55-7.00	121.90	96.10	25.80	9.64	86.46	3	30			
8	7.55-8.00	121.40	97.34	24.06	9.81	87.53	2	27			
9	8.55-9.00	112.30	91.91	20.39	10.85	81.06	2	25			
10	9.55-10.00	117.00	91.99	25.01	9.58	82.41	3	30			
	TEST REPOR	RT FOR L				LIMIT A 318 - 05			INDEX	OF SOIL	S
CAMPLE			WET COLL	DDV COII	WATER	DICH	DDV COII	%	ATTERBE	RG LIMIT	
SAMPLE NUMBER	DEPTH (m)	BLOWS	DISH (g)	DRY SOIL DISH (g)	(g)	DISH MASS (g)	DRY SOIL (g)	Retained on 0.425 mm	LL	PL	REMARKS
					LIC	ZUID LIMIT					
					PI /	ASTIC LIMIT	Г				
					1 2						
Uncertainty	Results:	Water Con	itent (%) =	± 0.0243	Liq	uid Limit =		Plas	stic Limit =		
Note: The re	eported expanded				d uncertain	ity by a cov	erage facto	or of k=2, pr	oviding a l	evel of conf	fidence of
approximate	ly 95%.									LAB.FILE N	O.:NMC-10-501
SAMPLE SUE	BMITTED BY :	GPI Field Op	erator			REMARKS:					
R. POLIDAN		·									
COMPUTER	PRINT-OUT			_							
	MARIA ANTONIETT	E P. CUNAH	IAP								
	Encod				TI	ESTED BY :		AR	RTURO Q. A	AQUINO	
Data Chas	kad bu								RATORY TE	ECHNICIAN	

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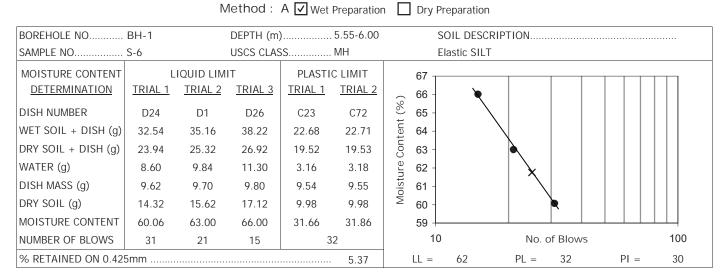
Client	MOHRI.	ARCHITECT	& ASSOCIATES,	INC.

Project..... Proposed Mayon Evacuation Center (Gogon Central School)

Location.... Brgy. Gogon, Province of Albay

Job Number......2209-10.R1-AL-01-1 Date of Receipt..... October 27, 2010 Date of Test..... October 28-29, 2010

TEST REPORT FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS ASTM D 4318 - 05



BOREHOLE NO		DEPTH (m	1)	•	SOI	L DESCRIPTION	
SAMPLE NO		USCS CLA	SS		,		
MOISTURE CONTENT DETERMINATION DISH NUMBER WET SOIL + DISH (g) DRY SOIL + DISH (g) WATER (g) DISH MASS (g) DRY SOIL (g) MOISTURE CONTENT NUMBER OF BLOWS	LIQUID LII TRIAL 1 TRIAL 2		PLASTI TRIAL 1	C LIMIT TRIAL 2	Moisture Content (%)	No. of Blows	100
% RETAINED ON 0.42	5mm				LL =	PL =	PI =

Uncertainty Results: I	Liquid Limit $= \pm 0.1386$	Plastic Limit = ± 0.2008	
II	Liquid Limit =	Plastic Limit =	
Note: The reported expanded uncer	tainty is based on a combined uncertain	nty by a coverage factor of k=2, providing a level of confidence	
of approximately 95%.		LAB.FILE NO.:AL	10-648
SAMPLE SUBMITTED BY :		REMARKS:	
☐ Walk-in Clients	Field Operator		
R. POLIDAN			
COMPUTER PRINT-OUT			
By: MARIA ANTONIETTE P.	CUNAHAP		
Encoder		TESTED BY: ARTURO Q. AQUINO	
Data Checked by: ABA	/ MRR	LABORATORY TECHNICIAN	
	Assurance		
Luamy .		ERTIFIED BY :	
Date Issued:		AUTHORIZED SIGNATORY	

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Final Report Form - 2

Rev.5/ Dec.2009





Client MOHR	I, ARCHITECT	& ASSOCIATES,	INC.
-------------	--------------	---------------	------

Project..... Proposed Mayon Evacuation Center (Gogon Central School)

Location.... Brgy. Gogon, Province of Albay

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)					4.55-5.00			SOIL DESC	CRIPTION			
SAMPLE NO S-5 USCS CLASS SC				SC		(Clayey SAI	ND				
MOISTURE CONTENT	L	IQUID LIMI	Т	PLASTI	C LIMIT		51 _T					\neg
<u>DETERMINATION</u>	TRIAL 1	TRIAL 2	TRIAL 3	TRIAL 1	TRIAL 2		50 -	>				
DISH NUMBER	C68	C80	C31	D16	D45	t (%)	49 -	`				
WET SOIL + DISH (g)	32.64	35.40	38.29	22.67	22.69	Content	48 -					
DRY SOIL + DISH (g)	25.49	27.12	28.80	19.42	19.42	Con						
WATER (g)	7.15	8.28	9.49	3.25	3.27	ure	47 -		\ \x			
DISH MASS (g)	9.60	9.70	9.82	9.45	9.47	Moisture	46 -					
DRY SOIL (g)	15.89	17.42	18.98	9.97	9.95	Σ	45 -			\		
MOISTURE CONTENT	45.00	47.53	50.00	32.60	32.86		44 +					
NUMBER OF BLOWS	30	21	15	3	3		10)	No. o	of Blows		100
% RETAINED ON 0.425	5mm				24.63		LL =	46	PL =	33	PI =	13

BOREHOLE NO	BH-2		DEPTH (m))	5.55-6.00		SC	OIL DESCF	RIPTION			
SAMPLE NO S-6 USCS			USCS CLAS	LASS MH			Elastic SILT					
MOISTURE CONTENT	L	IQUID LIMI	Т	PLASTI	C LIMIT		56 —					\neg
<u>DETERMINATION</u>	TRIAL 1	TRIAL 2	TRIAL 3	TRIAL 1	TRIAL 2		55 -	`				
DISH NUMBER	D14	D39	D7	C50	C93	%	54 -	\				
WET SOIL + DISH (g)	32.50	35.28	38.20	22.66	22.68	Content	53 -					
DRY SOIL + DISH (g)	24.87	26.47	28.11	19.52	19.54	_	52					
WATER (g)	7.63	8.81	10.09	3.14	3.14	ture			×			
DISH MASS (g)	9.62	9.68	9.78	9.51	9.52	Moisture	51 -		\			
DRY SOIL (g)	15.25	16.79	18.33	10.01	10.02	2	50 -					
MOISTURE CONTENT	50.03	52.47	55.05	31.37	31.34		49 +					
NUMBER OF BLOWS	31	22	15	3	1		10		No. o	of Blows		100
% RETAINED ON 0.425	5mm				19.72	L	_ =	51	PL =	31	PI =	20

Uncertainty Results: I	Liquid Limit = ± 0.1245	Plastic Limit = ± 0.2015
II	Liquid Limit = \pm 0.1301	Plastic Limit = ± 0.2000
Note: The reported expanded uncertainty is b	ased on a combined uncertainty by a co	verage factor of k=2, providing a level of confidence
of approximately 95%.		LAB.FILE NO.:AL-10-649
SAMPLE SUBMITTED BY :	REMAR	KS:
☐ Walk-in Clients	ator	
R. POLIDAN		
COMPUTER PRINT-OUT		
By: MARIA ANTONIETTE P. CUNAHAI	<u> </u>	
Encoder	TESTED E	BY: ARTURO Q. AQUINO
Data Checked by: ABA / MRR		LABORATORY TECHNICIAN
Quality Assurance		
,	CERTIFIED E	3Y :
Date Issued:		AUTHORIZED SIGNATORY

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Final Report Form - 2

Rev.5/ Dec.2009



Data Checked by: __

Date Issued:

ABA/MRR

Quality Assurance





ClientMOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number2209-10.R1-GSA-01-1
Project Proposed Mayon Evacuation Center (Gogon Central School)	Date of Receipt October 27, 2010
Location Brgy. Gogon, 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 <u>O</u> 1 □ 2 <u>∆</u> 3 0.55-1.00 1.55-2.00 2.55-3.00 DEPTH (m)..... SOIL DESCRIPTION..... Clayey Silty SAND Well graded SAND with silt Poorly graded SAND with silt SIEVE SIZE Cumm.Mass Cumm.% Percent Cumm.Mass Cumm.% Percent Cumm.Mass Cumm.% Percent Finer inches Retained (g) Retained <u>Finer</u> Retained (q) Retained <u>Finer</u> Retained (q) Retained <u>mm</u> 2 1/2 62.5 2 50.0 1 1/2 37.5 25.0 1 19.0 3/4 3/8 95 100 100 100 4.48 4.75 1.26 1.84 98 5.54 97 94 2.12 2.65 4 5.25 92 13.86 83 9.05 11.32 10 2.0 7.65 17.14 29 12.40 18.06 82 25.70 31.78 23.97 29.98 20 0.8 68 70 24.24 40 0.425 35.30 39 71 49.10 51 45.49 56.90 65 43 77.89 0.25 35.31 51.43 49 54 45 67.33 33 62.27 22 60 37 140 0.105 43.10 62.77 69 71 86.20 72.96 91.26 9 14 65.31 7 200 0.075 44.84 35 71.87 88.87 74.02 92.58 11 OVEN DRIED MASS 79.95 gms 68.66 gms 80.87 gms #40 #200 3/4 HYDROMETER 100 90 80 70 Percent Passing 60 50 40 30 20 10 n COARSE Particle Size (mm) 100 10 0.01 0.001 COBBLES SAND GRAVEL FINES (SILT OR CLAY) Cc = 1.09* - with Hydrometer REMARKS: S-2: Cu = 7.85 SAMPLE SUBMITTED BY: S-3: Cu = 5.40 Cc = 1.34Walk-in Clients ✓ GPI Field Operator R. POLIDAN TESTED BY: ARTURO Q. AQUINO COMPUTER PRINT-OUT By: MARIA ANTONIETTE P. CUNAHAP LABORATORY TECHNICIAN Encoder

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Uncertainty Results:

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CERTIFIED BY : ___

factor of k=2, providing a level of confidence of approximately 95%.

% Finer = ± 0.0427

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage

AUTHORIZED SIGNATORY

LAB.FILE NO.:GSA-10-402



Date Issued:





Client MOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number2209-10.R1-GSA-01-2
Project Proposed Mayon Evacuation Center (Gogon Central School)	Date of ReceiptOctober 27, 2010
Location Brgy. Gogon, Province of Albay	Date of Test October 28, 2010

TEST REPORT FOR GRAIN SIZE ANALYSIS ASTM D 422 - 63 (Re-approved 2007)

	PLE NO)		AS O <u>4</u> 3.55-4.00	TIVI D 422	2 - 03 (Re-ap	D <u>5</u> 4.55-5.00	07)			<u> </u>	
SOIL DESCRIPTION Poorly graded SAND wi				th silt	Poorly gr				Elastic SILT		
	E SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.N			Percent
inches	mm	Retained (g)	Retained	Finer	Retained (g)	Retained	Finer	Retained		Retained	<u>Finer</u>
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	3.48	4.17	96	2.07	2.67	97				
4	4.75	6.93	8.31	92	5.44	7.01	93				
10	2.0	11.55	13.85	86	11.39	14.68	85	0.30	1	0.42	100
20	0.8	18.94	22.70	77	19.71	25.40	75	1.52		2.13	98
40	0.425	29.58	35.46	65	39.69	51.15	49	3.83		5.37	95
60	0.25	57.00	68.33	32	58.83	75.82	24	6.97		9.78	90
140	0.105	75.64	90.67	9	70.94	91.43	9	11.78		16.52	83
200	0.075	77.65	93.08	7	72.82	93.85	6	14.10		19.78	80
	RIED MASS		33.42 gms	,		75.05 77.59 gms	O	14.10		71.29 gms	00
OVLIND	MED WASS	3/8	4 gills	#10		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
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0	COARS		COARS	SE MED	:	FINE !					
	00	10	COARS		Particle Size			0	0.01		0.001
COBBLES	6	GRAVEL			SAND			FINES (SILT C	OR CLAY)	
* - with	Hydrometer					REMARKS:	S-4:	Cu =	3.53	Cc =	1.40
SAMPLE SU	JBMITTED BY:						S-5:	Cu =	4.72	Cc =	1.39
☐ Walk-ir	Clients 🔽	GPI Field Opera	ator								
 R. Polidai		· 		_							
COMPUTER	PRINT-OUT					TESTED BY :		ARTU	JRO Q.	AQUINO	
Ву:		ONIETTE P. CUN	IAHAP			•			TORY	TECHNICIAN	
		Encoder									
					CFI	RTIFIED BY :					
Data Ched	cked by:	ABA/MRR			32.			AUTHOR	RIZED	SIGNATORY	
		Quality Assur	rance	Uncertaint	y Results:	% Finer =	± 0 0424	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		AB.FILE NO.:	·CSA 10 401
				Unicertaiill	y ivesuits.	70 FILIEL =	_ 0.0434		L	AD.I ILL INU.	.054-10-402

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Final Report Form - 3&4 Rev.6 / Dec. 2009

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage



Date Issued:





Client MOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number2209-10.R1-GSA-01-3
Project Proposed Mayon Evacuation Center (Gogon Central School)	Date of Receipt October 27, 2010
Location Brgy. Gogon, 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 <u>O</u> <u>7</u> □ 8 6.55-7.00 7.55-8.00 8.55-9.00 DEPTH (m)..... SOIL DESCRIPTION..... Poorly graded SAND with silt Well graded SAND with silt Well graded SAND with silt SIEVE SIZE Cumm.Mass Cumm.% Percent Cumm.Mass Cumm.% Percent Cumm.Mass Cumm.% Percent inches Retained (q) Retained <u>Finer</u> Retained (q) Retained <u>Finer</u> Retained (q) Retained **Finer** mm 2 1/2 62.5 2 50.0 1 1/2 37.5 25.0 1 3/4 19.0 100 100 3/8 100 0.90 99 1.35 9.5 1.23 1.66 98 4.75 2.20 2 79 97 1.97 2.70 97 4.26 96 3.47 4 5.31 6.74 93 3.38 95 12.08 14.83 10 2.0 4.62 85 21.98 27.90 72 22.03 78 28.94 35.54 20 8.0 16.10 64 50.95 0.425 39.40 53.91 45.02 55.29 45 40 64.67 35 46 0.25 66.70 84.66 15 55.24 75.58 24 75.66 24 60 61.61 91.11 74.23 94.21 87.41 74 19 9 140 0.105 63.89 13 6 65.11 75.04 95.24 5 89.08 11 75.96 93.28 7 200 0.075 OVEN DRIED MASS 73.09 gms 78.79 gms 81.43 gms #200 #10 3/4 #40 HYDROMETER 100 90 80 70 Percent Passing 60 50 40 30 20 10 n COARSE Particle Size (mm) 100 10 0.1 0.01 0.001 COBBLES SAND **GRAVEL** FINES (SILT OR CLAY) - with Hydrometer REMARKS: S-7: Cu = Cc = 1.373.77 SAMPLE SUBMITTED BY: S-8: Cu = 7.28 Cc = 2.06Walk-in Clients ✓ GPI Field Operator S-9: Cu = 6.10 Cc = 1.04R. POLIDAN TESTED BY: ARTURO Q. AQUINO COMPUTER PRINT-OUT LABORATORY TECHNICIAN MARIA ANTONIETTE P. CUNAHAP Encoder CERTIFIED BY: Data Checked by: __ ABA/MRR **AUTHORIZED SIGNATORY** Quality Assurance **Uncertainty Results:** % Finer = ± 0.0450 LAB.FILE NO.:GSA-10-402

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Final Report Form - 3&4 Rev.6 / Dec. 2009

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage







PNS ISO/IEO	C 17025:2005 06-097B		ATT.	119 Sauy	o Road, Novalich	nes, Quezon	City		DPWH-I	BRS Accredited
	MOHRI,	ARCHITECT	Γ & ASSOC	IATES, IN	NC.		Job Numbe	r		
					ogon Central	School)		eipt		
_	Brgy. Gog	•		()		,		t		
2004101111	2. 97. 239	10.11		DEDODT	FOR GRAIN	CI7E AN			0010001 20	20.0
					rok GRAIN 2 - 63 (Re-ap					
5	D. E. 110	5		11111 10 422	z - 03 (Re-ap	•	007)			
	PLE NO n)		<u>○10</u> 9.55-10.00						Δ	
-	CRIPTION		rly graded SANE)						
	VE SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	Cumm.%	Percent
inches	<u>mm</u>	Retained (g)		<u>Finer</u>	Retained (g)	Retained	<u>Finer</u>	Retained (g)	Retained	<u>Finer</u>
2 1/2	62.5									
2	50.0									
1 1/2	37.5									
1 3/4	25.0 19.0									
3/8	9.5									
4	4.75			100						
10	2.0	0.53	0.70	99						
20	0.8	7.53	9.97	90						
40	0.425	36.98	48.94	51						
60 140	0.25 0.105	60.02 72.50	79.43 95.95	21 4						
200	0.103	73.20	96.88	3						
	DRIED MASS		75.56 gms							
	3" 2 1/2" 2" 1 1/2	3/4	4	#10	#40	#140	#200	HYDROM	FTFR	
100	11111111		, , , , , , , , , , , , , , , , , , ,	O		146	**:			
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10					11 1 1 1	X				
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	00	10	Corne		Particle Size			0.01	00.01.00	0.001
COBBLE		GRAVEL			SAND	DEMARKS	0.10	FINES (SILT		1 10
	n Hydrometer UBMITTED BY:					REMARKS	: 5-10:	Cu = 3.09	Cc =	1.19
	n Clients		rator							
R. POLIDA		or ricia oper	idtoi							
				_		TESTED BY		ARTURO C) AOLIINO	
COMPUTEI By:	R PRINT-OUT MARIA ANTO	ONIETTE P. CU	ΙΝΑΗΔΡ				·	LABORATORY		
		Encoder						2		
					CFR	TIFIED BY	:			
Data Che	ecked by:				321			AUTHORIZED	SIGNATORY	
		Quality Assu	urance	Uncertaint	y Results:	% Finer =	± 0.0453		LAB.FILE NO.	:GSA-10-402
Date Issu	ued:			Note: The	reported expand	ded uncerta	inty is based	on a combined	uncertainty by	y a coverage







ClientMOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number2209-10.R1-GSA-02-2
Project Proposed Mayon Evacuation Center (Gogon Central School)	Date of Receipt October 27, 2010
Location Brgy. Gogon, 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 O <u>4</u> <u>5</u> 3.55-4.00 4.55-5.00 5.55-6.00 DEPTH (m)..... SOIL DESCRIPTION..... Poorly graded SAND with silt Clayey SAND Elastic SILT SIEVE SIZE Cumm.Mass Cumm.% Percent Cumm.Mass Cumm.% Percent Cumm.Mass Cumm.% Percent Finer inches Retained (g) Retained Finer Retained (q) Retained <u>Finer</u> Retained (q) Retained <u>mm</u> 2 1/2 62.5 2 50.0 1 1/2 37.5 25.0 1 19.0 100 3/4 3/8 9.5 4.00 5.07 95 100 4.75 10.14 12.86 87 100 0.420.76 99 4 17.59 22.30 78 2.88 97 1.33 98 10 2.0 1.82 2.40 24.95 6.97 11.05 29 4.98 8.99 20 8.0 31.63 68 91 10.92 40 0.425 34.46 43.69 15.54 24.63 75 19 72 80 56 57.59 0.25 45.42 42 22.39 35.48 65 16.72 30.20 70 60 140 0.105 67.58 85.69 48.15 52 22.91 41.38 59 14 30.38 31.95 200 0.075 70.82 89.79 10 50.63 49 24.73 44.66 55 OVEN DRIED MASS 78.87 gms 63.10 gms 55.37 gms #40 #20 3/4 HYDROMETER 100 90 80 70 Percent Passing 60 50 40 30 20 10 n COARSE 100 10 Particle Size (mm) 0.1 0.01 0.001 COBBLES SAND GRAVEL FINES (SILT OR CLAY) * - with Hydrometer REMARKS: S-4: Cu = 6.82 Cc = 0.72SAMPLE SUBMITTED BY: Walk-in Clients ✓ GPI Field Operator R. POLIDAN TESTED BY: ARTURO Q. AQUINO COMPUTER PRINT-OUT By: MARIA ANTONIETTE P. CUNAHAP LABORATORY TECHNICIAN Encoder CERTIFIED BY : ___ Data Checked by: ___ ABA/MRR **AUTHORIZED SIGNATORY** Quality Assurance Uncertainty Results: % Finer = ± 0.0486 LAB.FILE NO.:GSA-10-402 Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage Date Issued:

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ClientMOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number	. 2209-10.R1-GSA-02-
Project Proposed Mayon Evacuation Center (Gogon Central School)	Date of Receipt	October 27, 2010
Location Brgy. Gogon, 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 <u>BH-2</u> <u>O 7</u> DEPTH (m) 6.55-7.00		□ <u>8</u> 7.55-8.00					∆ <u>9</u> 8.55-9.00				
SOIL DESC	CRIPTION		Silty SAND		Poorly	graded SAND with	silt	F	oorly gr	aded SAND with	n silt
SIEV	E SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.Mass	s Cumm.%	Percent	Cumm.	Mass	Cumm.%	Percent
inches	<u>mm</u>	Retained (g)	Retained	<u>Finer</u>	Retained (g		<u>Finer</u>	Retaine		Retained	<u>Finer</u>
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	5.35	6.19	94	6.62	7.56	92				100
4	4.75	17.63	20.39	80	12.64	14.44	86	1.2	1	1.53	98
10	2.0	31.20	36.09	64	17.54	20.04	80	4.1		5.06	95
20	0.8	42.90	49.62	50	26.44	30.21	70	15.3		18.87	81
40	0.6	50.87	58.84	41	48.81	55.76	44	39.4		48.61	51
60	0.25	58.23	67.35	33	65.14	74.42	26	55.6		68.70	31
140	0.105	67.22	77.75	22	79.85	91.23	9	70.8		87.40	13
200	0.075	68.67	79.42	21	81.48	93.09	7	73.0		90.14	10
OVEN D	RIED MASS		86.46 gms	,,	10000	87.53 gms	••		5	31.06 gms	
100 +	3" 2 1/2" 2" 1 1/2	3/8	4	#10	#40	#140		HYDR	ОМ	ETER	
				A							
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80 -	 	: : : : : :	T Q	*		1 1 1					
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- 60 -			i	<u> </u>	\ \ \ \						
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30 -			1 :			Q ::::					
20 -											
10 -		1 1				· **					
0 1	COARS	E FINE	COARS	SE MED	IUM	FINE					
10 COBBLES		10 GRAVEL		1	Particle Siz SAND	ze (mm) 0.1			.01 (SILT (OR CLAY)	0.001
* - with	Hydrometer					REMARKS :	S-8:	Cu =	5.40	Cc =	1.26
	JBMITTED BY:	:				-	S-9:	Cu =	5.93	Cc =	
		GPI Field Oper	ator			-					- *
R. POLIDA						-					
				_		TECTED DV		٨٥٣	IDO O	A O L L MA	
	PRINT-OUT					TESTED BY :				AQUINO	
<i>By:</i>		ONIETTE P. CUI	NAHAP					LABORA	IORY	ΓΕCHNICIAN	
		Encoder									
Det - Ot	alea al las	A D A /A ADD			C	CERTIFIED BY :					
Data Ched	cked by:	ABA/MRR	uranco					AUTHOR	RIZED	SIGNATORY	_
		Quality Assu	ıı aı ice	Uncertaint	y Results:	% Finer =	± 0.0408		LA	AB.FILE NO.:	GSA-10-402
Date Issue	ed·				=	anded uncertain		on a comb	nined u	ncertainty by	a coverage
2010 133U						a lovel of confi					a ooverage

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Date Issued:





PNS ISO/IEC			A Fry	119 Sauy	o Road, Nov	valiche	es, Quezon	City			DPWH.	BRS Accredited
		ARCHITECT	& ASSOC	IATES, IN	IC.			Job Numbe	er			1-GSA-02-4
		d Mayon Eva				tral	School)		ceipt			
_		on, Province		•	Ü		,		· st			
		, , , , , , , , , , , , , , , , , , ,		REPORT F	OR GRA	INI	SIZE AN	1				
				TM D 422								
	PLE NO		<u>010</u>								Δ	
•	1)		9.55-10.00	ملا مالا								
	CRIPTION /E SIZE	Cumm.Mass	aded SAND wi Cumm.%	Percent	Cumm.Ma	icc	Cumm.%	Percent	Cumm.Ma	200	Cumm.%	Percent
inches	Mm <u>mm</u>	Retained (g)	Retained	Finer	Retained (Retained	Finer	Retained		Retained	Finer
2 1/2	62.5					<u></u>				132		
2	50.0											
1 1/2	37.5											
1	25.0											
3/4	19.0											
3/8	9.5			400								
4 10	4.75 2.0	1.73	2.10	100 98								
20	0.8	1.73	12.87	96 87								
40	0.425	42.78	51.91	48								
60	0.25	63.81	77.43	23								
140	0.105	75.23	91.29	9								
200	0.075	76.45	92.77	7								
OVEN D	ORIED MASS		32.41 gms	,,	1	,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
	3" 21/2" 2" 11/2	3/8	4#	#10	#20	09#	#140	#Z00	HYDRO) M F	TFR	
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is: 60 -			1		 	1	1 1					
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20 -						1						
10 -		: : :	!			<u>:</u>	X					
		: : : : : :										
0 -	CUARS		COAR				FINE		0.0	4		0.004
COBBLES	00 S	10 GRAVEL		1	Particle S	size (r	nm) 0.1		0.0 FINES (S		R CLAY)	0.001
	Hydrometer						REMARKS :	S-10:	Cu =			1.63
	UBMITTED BY:	:										
☐ Walk-in	n Clients 🔽	GPI Field Opera	ator									
R. POLIDAI	.N											
	R PRINT-OUT]		Т	ESTED BY	:	ARTUR	0 Q.	AQUINO	
		ONIETTE P. CUI	NAHAP								ECHNICIAN	
		Encoder										
						CERT	ΓIFIED BY :					
Data Che	cked by:	ABA/MRR Quality Assu	ranco							ZED S	SIGNATORY	
		Quality ASSU	i al ICC	Uncertaint	y Results:		% Finer =	± 0.0407		LA	B.FILE NO.:	GSA-10-403

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Final Report Form - 3&4

Note: The reported expanded uncertainty is based on a combined uncertainty by a coverage

Rev.6 / Dec. 2009







Client MOHRI, ARCHITECT & ASSOCIATES, INC.	Job Number	. 2209-10.R1-GSA-02-1
Project Proposed Mayon Evacuation Center (Gogon Central School)	Date of Receipt	October 27, 2010
Location Brgy. Gogon, Province of Albay	osed Mayon Evacuation Center (Gogon Central School) Date of Receipt October 27, 2010	
TEST REPORT FOR GRAIN SIZE AN	ALYSIS	

EST REPORT FOR GRAIN SIZE ANALYSIS ASTM D 422 - 63 (Re-approved 2007)

	PLE NO n)	<u>BH-2</u>	<u>O</u> <u>1</u> 0.55-1.00			1	□ <u>2</u> .55-2.00				∆ <u>3</u> 2.55-3.00	
SOIL DES	SOIL DESCRIPTION Silty SAND		Poorly graded SAND with			silt		Poorly g	raded SAND wi	th silt		
SIE\	VE SIZE	Cumm.Mass	Cumm.%	Percent	Cumm.M	ass	Cumm.%	Percent	Cumm.	Mass	Cumm.%	Percent
inches	<u>mm</u>	Retained (g)	Retained	<u>Finer</u>	Retained		Retained	<u>Finer</u>	Retaine		Retained	<u>Finer</u>
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	2.71	4.50	95	1.23		1.48	99				100
4	4.75	11.87	19.72	80	4.57		5.49	95	2.08	8	2.65	97
10	2.0	15.73	26.14	74	8.52		10.24	90	5.89	9	7.52	92
20	0.8	22.56	37.49	63	14.98		18.00	82	15.5	4	19.83	80
40	0.425	30.90	51.35	49	26.54		31.90	68	30.5	6	39.00	61
60	0.25	38.32	63.68	36	40.10	1	48.20	52	49.6	0	63.30	37
140	0.105	46.68	77.57	22	71.14		85.50	14	69.4	3	88.60	11
200	0.075	48.10	79.93	20	74.68		89.76	10	72.4	9	92.51	7
OVEN D	ORIED MASS	[] []	60.18 gms	r	1777 1777		3.20 gms	1			78.36 gms	
100	3" 2 1/2" 2" 1 1/2	3/8	#	#10	#20	09#	#140		HYDR	ОМ	ETER	
100 -												
90 -		1 1 1			1 1	+	1 1					
80 -						1						
00				\checkmark								
70 -				\rightarrow		+:						
D .					$\frac{1}{\sqrt{2}}$							
- 09 SSi		1 1	11111		7	\ \ \						
- 05 t		1 1				/ 造						
ent						(
Percent Passing		: : :			+++++++	1	\ 					
						4						
30 -												
20 -		1 1 1				1	1/2					
10 -						- :		1				
0 -	COARS	E FINE	COAR		TÜM		FINE (mm) 0.1			0.01		0.001
COBBLES		GRAVEL		'	SAND	SIZE	(11111) 0.1				OR CLAY)	0.001
* - with	Hydrometer						REMARKS :	S-2:	Cu =	4.18	Cc =	0.94
	UBMITTED BY:						·	S-3:	Cu =	4.23	Cc =	1.03
☐ Walk-ir	n Clients 🔽	GPI Field Oper	rator				=					
R. POLIDA	ιN						-					
COMPLITE	R PRINT-OUT			 		٦	TESTED BY :		ART	URO Q	. AQUINO	
By:		ONIETTE P. CU	INAHAP				=				TECHNICIAN	
->:		Encoder										
						CED	TIFIED BY :					
Data Che	ecked by:	ABA/MRR				UEK	יווורט סז: ַ		∧IIT⊔∩	DIZED	SIGNATORY	
		Quality Assu	urance	Uncertaint	n Doculto		% Finer =	. 0.0522	AUTHU			
	,				y Results:							.:GSA-10-402
Date Issu	ıed:											by a coverage
				Tactor Of K	factor of k=2, providing a level of confidence of approximately 95%.							

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