VICTOR S. ADRIANO
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Geotechnical Investigation Report

SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH

PUERTO PRINCESA PALAWAN

VS ADRIANO CIVIL ENGINEERING CONSULTANCY SERVICES

 # 20-B Karilagan Street Dona Damiana Village,
Rosario, Pasig City

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Test results and corresponding opinion and interpretation relate only to the items obtained from the specified sampling locations and tested in the company's laboratory and/or other qualified laboratories commissioned by the company. The Client should be aware that conclusions and recommendations presented in this report are subject to confirmation (to the extent possible) based on the conditions revealed after the geotechnical investigation. Variations from the conditions portrayed such as perched groundwater, soft deposits, hard layers, or cavities, which are not indicated by the test explorations, may occur in localized areas and may require probing or corrections in the field to attain a properly constructed project.

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Introduction

Background

A.M. Geoconsult and Associates, Inc. (AMGeo) was contracted by the Palawan Provincial Environment and Natural Resources Office ("The Client") to conduct a geotechnical investigation on Snake Island to determine its capacity to support buildings and the suitability of the site for the construction of facilities and related infrastructure.

The soil investigation was carried out in accordance with the scope and limitations presented in AMGeo's proposal (Our Ref: 1910PENRO1). The assessment commenced following approval of the proposed works by the client on 03 July 2020.

Snake Island has been established as the DENR National Coastal and Marine Center for Research (NCMCR) on November 3, 2011 as per the DENR Administrative Order 2011-12. The project site is one of the small islands located east coast of Puerto Princesa prone to geological hazards brought about by natural processes and anthropogenic activities. In regard to this, geotechnical soil investigation is required to assess the soil type and suitability of the area prior to development.

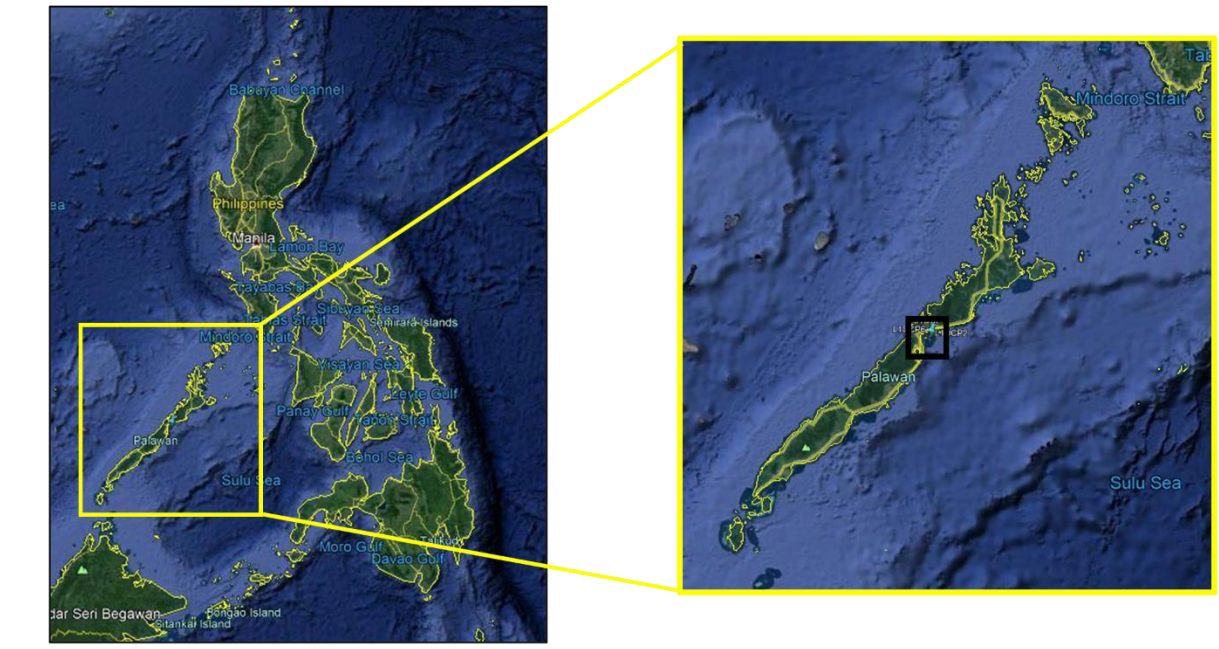
Dynamic Cone Penetrometer Tests (DCPT) were carried out on two separate locations on the island with a total of fifteen (15) sampling points, six (6) of them on Location 1 while the rest were on Location 2.

Purpose and Objectives

The purpose of this assessment is to provide the Client with information on the nature and character of the soil and their consequent implications for the suitability of the site for its intended use, to ultimately aid in the design of earthworks and foundations for structures, implement earthwork repairs, and other structural plans at the project site. Specifically, the objectives of the Soil Investigation include:

1) To evaluate the nature of soil deposit
2) To enumerate specific engineering recommendations for design and construction; and,
3) To identify potential risk or problems and doable solutions.

Site Description and Setting



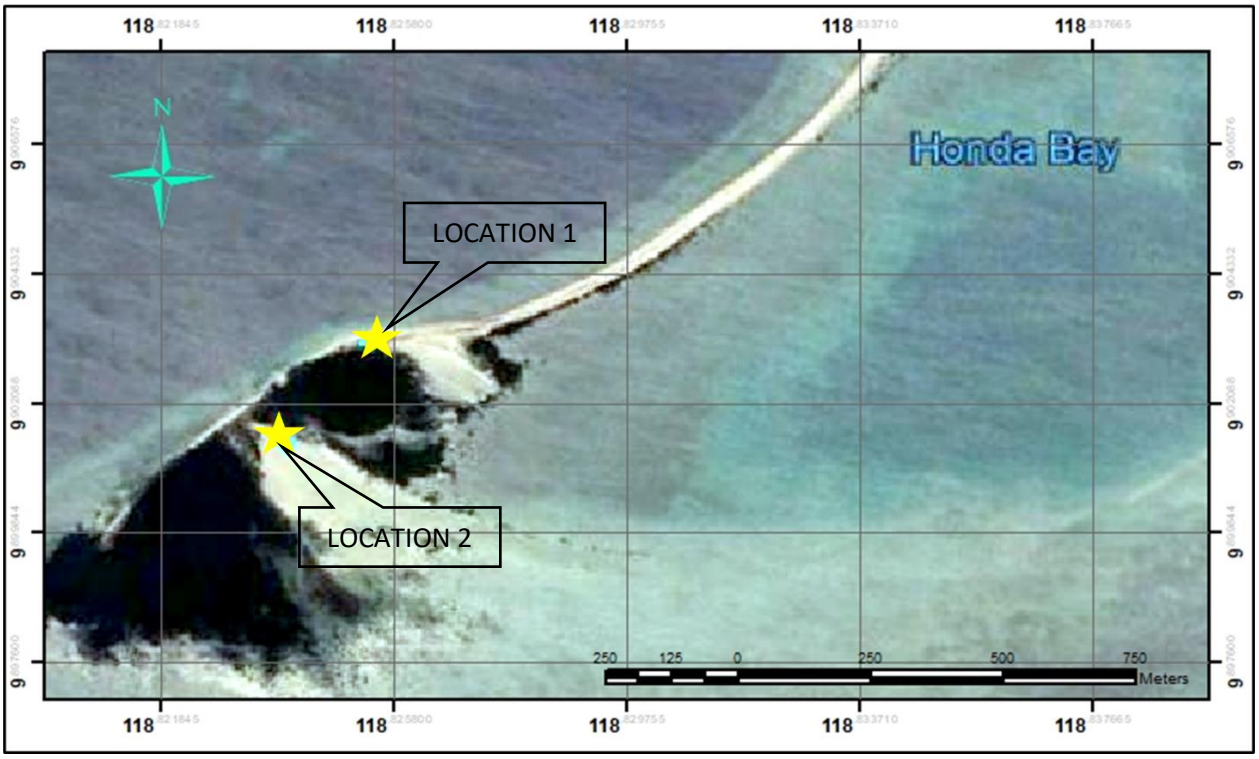


Figure 1 Location map of the project area, sampling locations depicted by the yellow stars

The proposed project for DENR National Coastal and Marine Center for Research is located on Snake Island, a small island in the east coast of Puerto Princesa, situated between 9.901390° N and 9.903310° N latitude, and 118.823820° E and 118.825680° E longitude. A summary of the sampling coordinates is presented in Table 1.

The project site is approximately 558 km away from Ninoy Aquino International Airport and is accessible through different modes of transportation. Puerto Princesa City may be reached from Manila through a 1-hour flight by a commercial plane or through a 28-hour commercial boat ride.

Table 1. Coordinates of sampling locations at the project site

DCPT Number	COORDINATES	
	NORTHING	EASTING
LOCATION 1		
DCPT – 1	9.90317 N	118.82524 E
DCPT – 2	9.90320 N	118.82531 E
DCPT – 3	9.90316 N	118.82549 E
DCPT – 4	9.90323 N	118.82552 E
DCPT – 5	9.90329 N	118.82556 E
DCPT – 6	9.90331 N	118.82568 E
LOCATION 2		
DCPT – 1	9.90160 N	118.82382 E
DCPT – 2	9.90152 N	118.82384 E
DCPT – 3	9.90146 N	118.82388 E
DCPT – 4	9.90159 N	118.82398 E
DCPT – 5	9.90155 N	118.82407 E
DCPT – 6	9.90146 N	118.82401 E
DCPT – 7	9.90139 N	118.82394 E
DCPT – 8	9.90149 N	118.82410 E
DCPT – 9	9.90140 N	118.82412 E

Hydrology and Groundwater Conditions

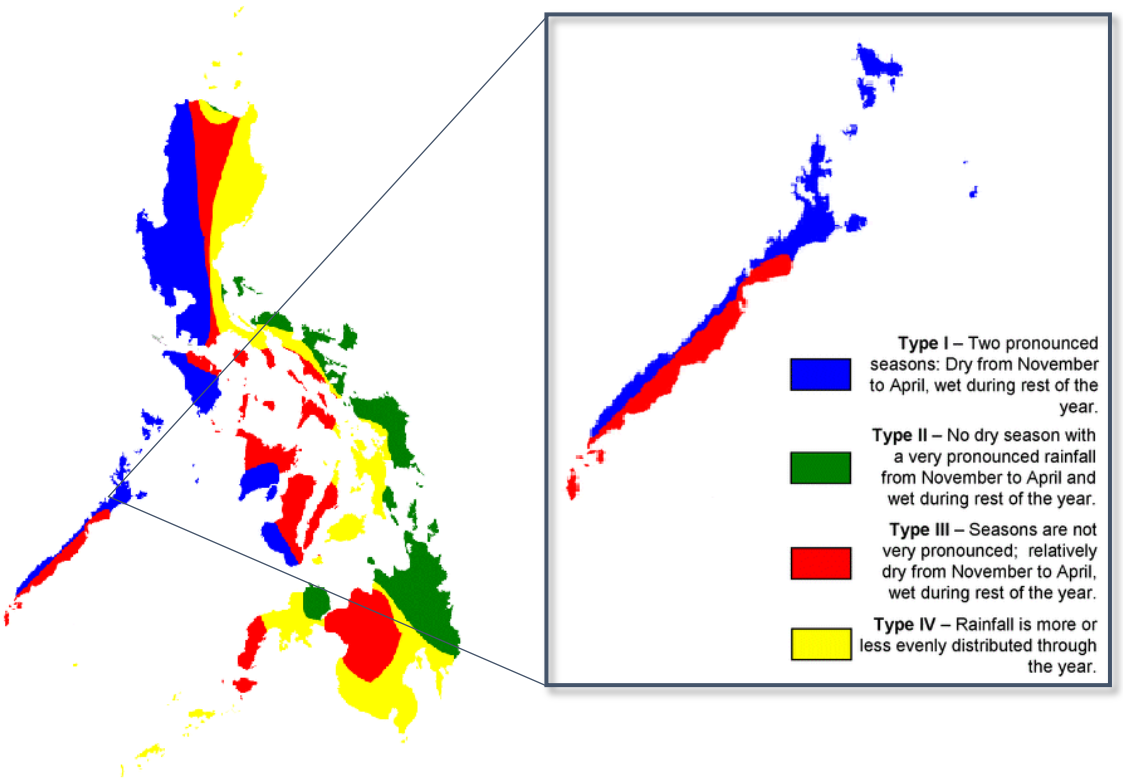
According to the official website of the city government of Puerto Princesa, there is a total of 115,610 hectares of watershed areas in the city. Five of which have major river basins and six have medium-sized river basins.

Babuyan River, which comprises 25% of the total catchment area, is the largest of the five river basins followed by Montible River (20%), Langogan River (14%), Inagawan River (12%) and Bacungan River (10%) with the least catchment area. The main source of water supply in the city, Irawan watershed, has a small catchment area encompassing only 3% of the total catchment area.

Because of low yield and partial salt-water intrusion into the freshwater aquifers, the development of groundwater in the city proper has limited potential. Nevertheless, groundwater abstraction has a better potential in Sta. Monica, Irawan, and Iwahig.

The groundwater quality in Puerto Princesa is relatively poor with a pH higher than the benchmark for good quality water which is 7.2. It has high calcium and magnesium level content, making it hard and yields crust deposits when boiled.

Climate



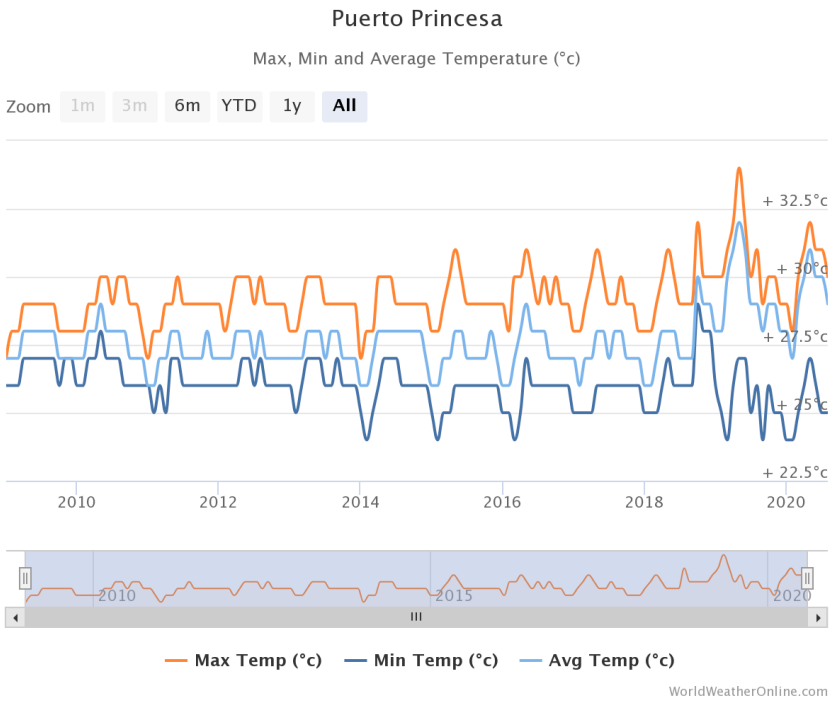


Figure 2 Top: Climate map of the Philippines with a close-up view of Palawan province; and bottom: Maximum, Minimum, and Average Temperature in Puerto Princesa in the last decade (2010 - 2020)

Two types of seasons are experienced by the region. On the western portion of the Island, dry months ranges from November until April while the wet season is from May to October. On the eastern half of the region, seasons are less pronounced but are relatively dry from November to April and is wet during the rest of the year. The island undergoes a short one- to three-month dry season where the east coast becomes progressively drier than the west on the entire region.

Palawan is generally typhon-free except for the northern portion of the island. Warm weather predominates from March to May, while the coolest months are from December to February. Heavy rainfall is usually experienced in July and August, often accompanied by the southwest monsoon (source: Palawan provincial government).

Topography, Vegetation and Drainage

Palawan has irregular coastlines in both east and west that stretches for about 2,000 km long and are highly indented with bays, coves, and inlets. The terrestrial topography of the province consists of highlands mostly covered by a vast stretch of forests interspersed with riverine arteries, craggy foothills, coastal plains, and valley deltas.

While Palawan has generally high to rolling topography, over half of the total land area of Puerto Princesa have flat to gentle slopes. The province generally retains their primary cover although the lowlands are either planted with crops or have secondary growth.

Rivers that drain are directed to the west into the South China Sea have intermittent flows and steep inclinations. They are generally straight, short, and narrow with v-cut channels and homogeneously coursing north-west. Bacungan River, including its associated tributaries form the primary drainage system on the eastern flank. East of Barrio Bacungan, it meanders along its estuary and discharges its load into Honda Bay. At certain localities in the region, the streams assume arcuate outlies that tend to the annular pattern particularly in the iron-mineralized area drained by the second order tributaries of the main river. This inconsistent pattern is highly suggestive that these areas have probably been intruded by an igneous body (Fortuno, 1963).

General Geology

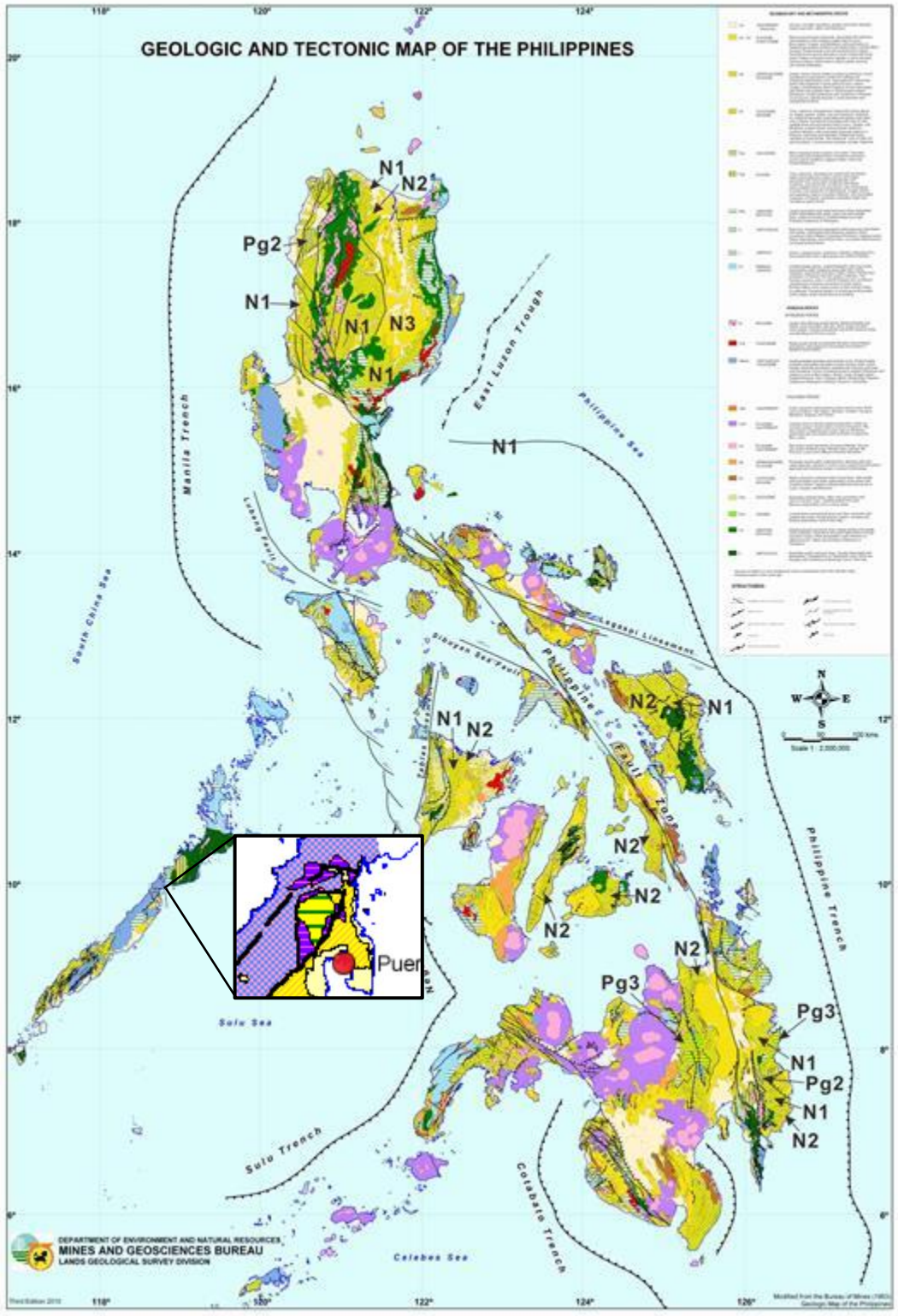


Figure 3 Geologic and Tectonic Map of the Philippines

Regional Geology

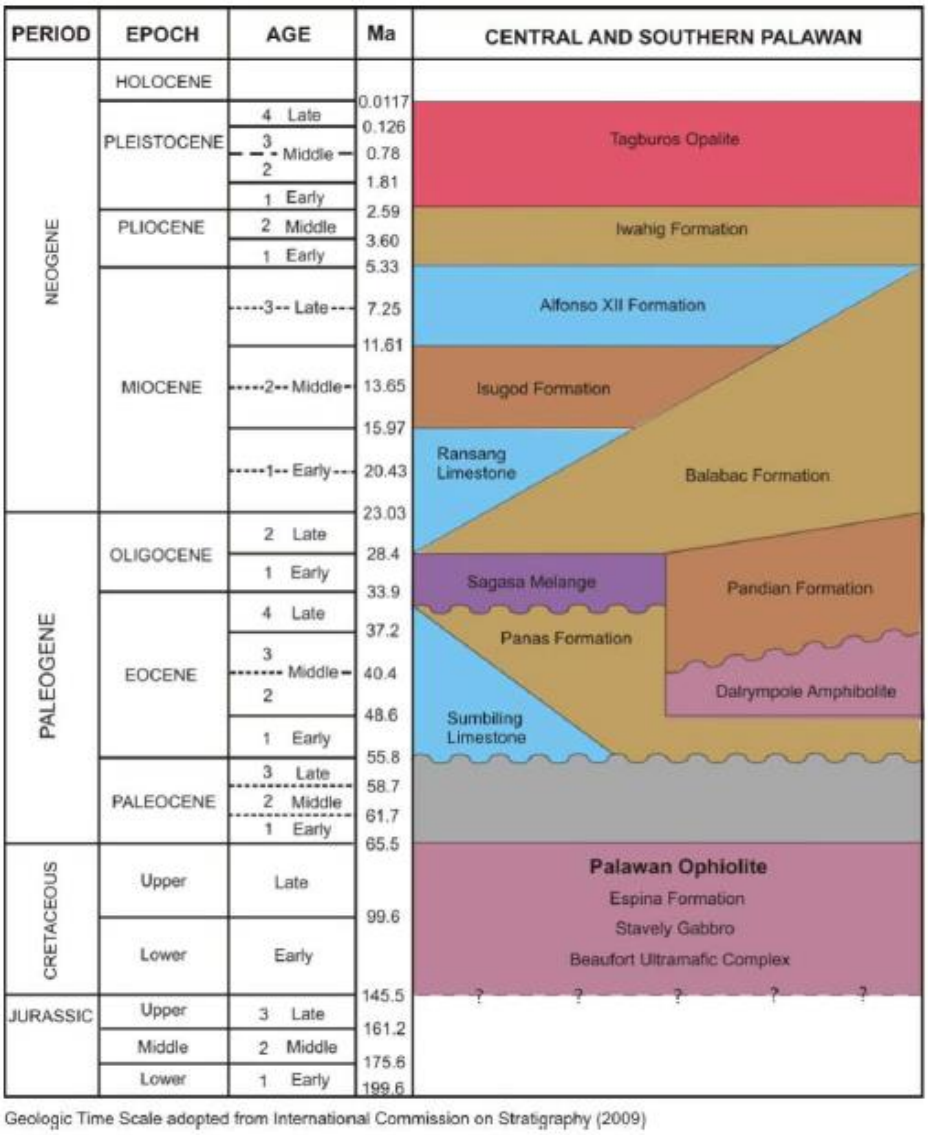


Figure 4 Stratigraphic Column of Central and Southern Palawan (MGB, 2010)

Palawan Ophiolite

The basement unit in central and southern Palawan is the dismembered Palawan Ophiolite. It stretches for about 300 km from southern to central Palawan along the trend of the island with a maximum width of about 30 km. It was described to be an almost complete ophiolitic suite comprising ultramafics, gabbro, pillow basalts with radiolarian chert, and red mudstones. It is categorized by an absence of sheeted diabase complex, and grades downward from pelagic sedimentary rocks and pillow

basalt via isotropic and cumulate gabbro towards the troctolite horizon. The formation of this ophiolite complex concluded in cretaceous time as evidenced by paleologic dating made by Tumanda and others (1995) of radiolarian tests in the chert facies of the sedimentary cover above the pillow lavas. Its emplacement through thrusting apparently occurred during the Eocene.

Beaufort Ultramafic Complex

Ultramafic rocks of this Cretaceous unit consist of unaltered and serpentinized harzburgite, dunite, peridotite, and pyroxenite. It is mainly comprised of Harzburgite with accompanying cumulate dunite. Dikes or stocks of dunite also intrude the harzburgite. The pyroxenite usually occurs in stratiform layers that are dominated by well-developed pyroxene crystals, and the dunite is stratified and laminated.

Stavely Gabbro

Consists of medium- to coarse-grained gabbro, including olivine gabbro and troctolite. In some areas, the gabbro is pegmatitic with large crystals of plagioclase, pyroxene, and minor amounts of hornblende. The Stavely Gabbro is apparently part if the Palawan Ophiolite, which probably formed during the Cretaceous.

Espina Formation

The Espina Formation as originally described consists of basalt with intercalated shale, limestone, and chert. The shale is indurated and siliceous. The limestone is brown to gray in color, dense, and fossiliferous. The chert is reddish to brownish gray and manganese-bearing. They are occasionally intercalated with pillow lavas and breccia along Bacungan River and at Irawan area. The formation if overlain unconformably by the Panas Formation and Sumbiling Limestone and is in thrust contact with gabbro and ultramafic rocks.

Dalrympole Amphibolite

The amphibolite has a thickness of a few tens of meters and is considered as the metamorphic sole of the Palawan Ophiolite. It is medium-grained, nematoblasatic, and with abundant hornblende needles. Bands of ferromagnesian minerals, including sporadic gradnets alternate with plagioclase ir quartz. It is of Middle Eocene in age as indicated by radiometric K-Ar dating of the amphibolites.

Panas Formation

This formation was originally described as a sequence of indurated turbiditic medium to thinly bedded alternations of sandstone, siltstone, and shale that are light to dark gray, quartz-rich, feldspathic, and cemented by carbonate and clayey matrix. Conglomerate beds locally grade to sandstone and shale. It unconformably lies the Espina Formation and partly intertongues with the overlying Sumbiling Limestone. The sandstone and shale sequence contains foraminifera that indicate Paleocene to Early Eocene age. It was later considered to be Eocene in age, and it has a maximum thickness of 1,500 meters.

Sumbiling Limestone

Sumbiling Limestone unconformably overlies the Espina Formation and apparently intertongues with the Panas Formation. This formation has massive, partly crystalline, dark gray limestones exposed in Labogm Zambo and Tarusan areas. It crops out on the Inagauan Penal Colony in central Palawan and at the base of the St. Paul Limestone in the Underground River in Sabang, Puerto Princesa. This formation was set to be of Eocene in age by Wolfart and others (1986) and Maac and Agadier (1988).

Pandian Formation

Consists of massive sandstone extensively distributed in southern Palawan. It is originally described as dominantly made up of massive, coarse-grained, porous arkosic sandstone with indurated dark gray mudstone and silty shale interbeds downsection. Thick beds of conglomerate were recognized near its base. The sandstone is brown to buff, consisting mostly of coarse-grained quartz with few feldspars, serpentine, chert, and magnetite. The shale interbeds are light to dark gray and light brown with a thickness of about 6-8 cm. Pandian Formation is estimated to have a maximum thickness of 1,500 meters.

Sagasa Mélange

Refers to the chaotic mixtures of turbidites, pillow basalts, cherts, and quartzite outcropping in the Ulugan Bay area. The formation of the mélange is attributed to the tectonic activity that probably occurred during the Oligocene.

Balabac Formation

Balabac Formation lies unconformably over the Espina Formation and is composed primarily of limestone, sandstone, shale, and conglomerate. It has a thickness of about 1,100 to 1,300 meters and has four members namely: North Bay Hill, Tagkalasa Hill, Catagupan, and Sigumay.

North Bay Member

Consists dominantly of limestone with interbeds of thin sandstone and shale. The limestone is brown to gray, massive, fine- to coarse-grained, and fossiliferous. The shale and sandstone are gray and fine-grained. It was assigned a Late Oligocene age due to the presence of *Lepidocyclina (Eulepidina) monstrosa*.

Tagkalasa Member

Composed of arkosic, massive, light gray, moderately hard and fine- to medium-grained sandstone with thin layers of shale. Its thickness ranges from 500 to 800 meters and has an Early Miocene age indicated by the presence of several species of *Spiroclypeus* and *Lepidocyclina*.

Catagupan Member

Consists of 160 to 600 meters thick sequence of shale and sandstone with minor limestone beds. The shale is gray and thick bedded while the sandstone is thin bedded and arkosic. The limestone is thinly bedded, gray, and arenaceous.

Sigumay Member

Composed of gray medium-grained arkosic sandstone that crops out near Sigumay Point. It contains small foraminifera that indicate Late Miocene age and has a range of thickness from 450 to 896 meters.

Ransang Limestone

This formation consists of cream to gray -colored massive to bedded limestone, including calcarenites and calcsiltites. Benthic foraminifera, algae, coral, and molluscan fragments were observed in the limestone. Deposition was inferred to have occurred in a relatively shallow marine environment from the main reef complex to the lagoonal area. Tests of Spiroclypeus and Lepidocyclina species identified in the Ransang suggest an Early Miocene age for this formation (Maac and Agadier, 1988).

Isugod Formation

Isugod Formation consists of a rhythmic sequence of well bedded shale and quartzofeldspathic sandstone with limestone at the base. The limestone is coarse-grained, gray to cream to light brown, massive, hard, and coralline. The sandstone is fine- to coarse-grained and medium to thickly bedded. The shale is thinly bedded and silty with parallel and cross laminations. Clast-supported conglomerates are occasionally observed alternating with the sandstone-shale interbeds at the type locality in Isugod. The conglomerate consists of rounded to subrounded, pebble to cobble sized clasts of volcanic fragments, shale, sandstone, coal lenses, coral fragments and amber set in a sandy matrix. Isugod Formation lies unconformably over Espina Formation along the slope of the central range and unconformably underlies the Alfonso XIII Formation. It has a maximum thickness of about 900 meters. Middle Miocene planktic foraminifera were identified in the Isugod Formation by Maac and Agadier (1988).

Alfonso XIII Formation

Alfonso XIII Formation consists of massive to thick-bedded, cream to light gray limestone representing facies change from a bioherm to a biostrome. The associated clastic rocks grade from light gray mudstone to almost chalky white marl. It unconformably overlies the Isugod at Iwahig as well as Pandian Formation.

Iwahig Formation

This formation is composed of limestone and conglomerate with siltstone and sandstone interbeds. It has two members, namely: Pusok Conglomerate and Panoyan Limestone.

Pusok Conglomerate Member

In central Palawan, the conglomerate consists of pebbles, cobbles, and even boulders of ultramafic rocks set in a clayey sandstone matrix. Other clasts include gabbro, schist, and occasional megafossils. In the south, the pebbles are composed of chert, limestone and indurated sediments set in a sandy and limy groundmass. The sandstone interbeds are light greenish gray and fine- to medium-grained and the siltstone is light gray. The thickness of this member is about 100m as is assigned a Pliocene age.

Panoyan Limestone Member

This member underlies Panoyan Hill and Mt. Gangob and is exposed along the banks of Iwahig River in the eastern part of southern Palawan. It also underlies Dalingding Hill southeast of Canipaan in

the western side. The limestone is cream to buff-colored with shades of pink. It occurs as massive, coralline, and is usually cliff-forming. It is assigned a Pliocene age although it may extend to Pleistocene.

Tagburos Opalite

Irregular masses of yellowish to mocha brown siliceous rocks exposed as separate hills in Tagburos and Bacungan areas in Puerto Princesa. The deposits are believed to have originated from ancient hot springs during the Pleistocene time and consist of massive dark gray chalcedony and variegated opaline silica. The chalcedony usually crops out along the peak of ridges while the opalite is commonly found along slopes around the chalcedony peaks.

Regional Tectonic Setting

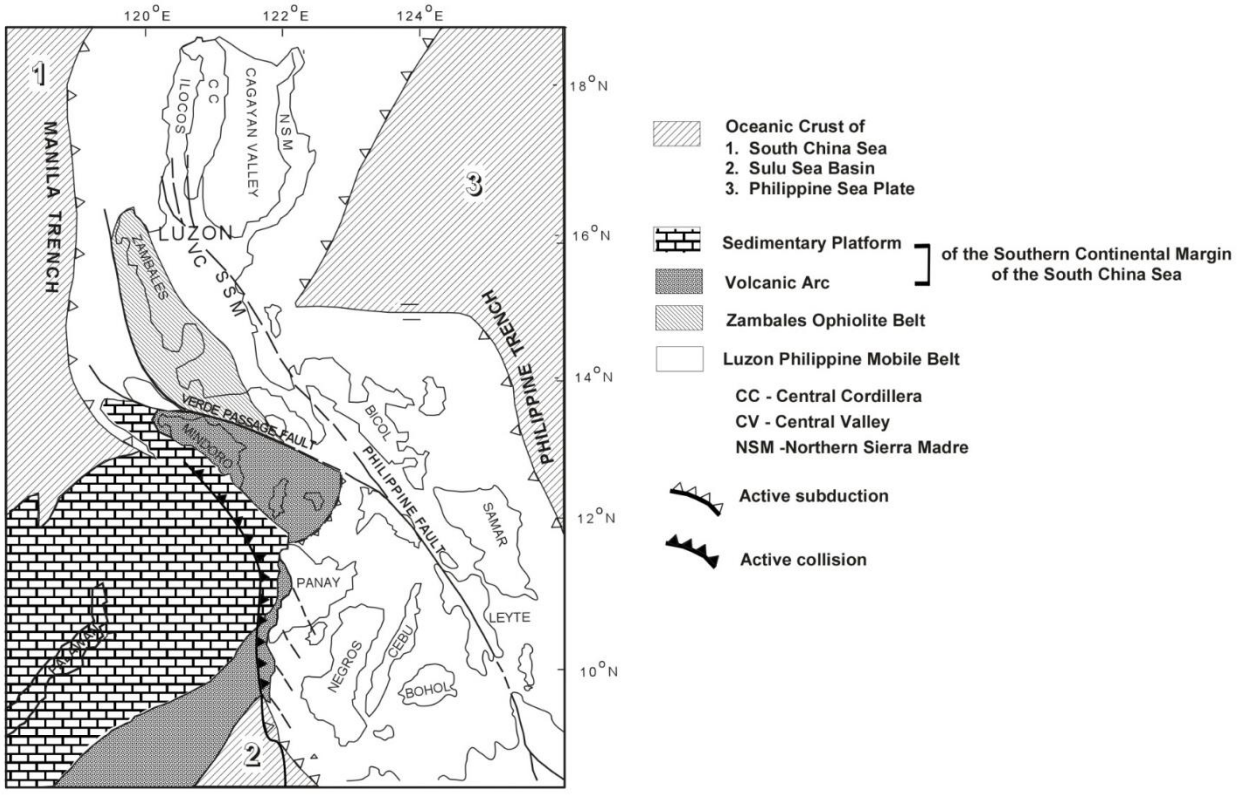


Figure 5 Simplified tectonic map of the collision zone involving the North Palawan continental block and the western central Philippine arc (Mindoro-Panay) Adopted from Marchiadier, 1988 (MGB, 2010)

The Southeast Asia is one of the most tectonically active regions in the world. The tectonic activity in the region is the result of the interaction of three (3) major tectonic plates in the Western Pacific area. The three (3) major plates are the Pacific Plate, the Eurasian Plate, and the Indo-Australian Plate (Aurelio and Peña, et. al., 2007). The broad zone of convergence of these plates resulted to presence of subduction of oceanic plates beneath the Philippines. The Philippine Mobile Belt is surrounded by subduction zones with opposing polarities.

The Philippine archipelago, located on the southwestern portion of the Western Pacific region, is also tectonically active (Hall, 1996). In general, the Philippine archipelago can be subdivided into two geologic entities, namely: The Philippine Mobile Belt (Gervasio, 1996) and the Palawan-Mindoro Microcontinent. The former, a group of land masses that apparently originated from sub-equatorial regions to its present position with the rotation and spreading of the Philippine Sea Plate during Eocene to Miocene times, is located between the opposing subduction of the west-dipping Philippine and East

Luzon trenches and east-dipping Manila, Negros, Cotabato and Sulu trenches (Aurelio, 2000; Barrier et al., 1991) while the latter is a geological block that was rifted from the Asian mainland during the Late Cretaceous to Late Eocene time and transported into approximately its present position as a response to the opening of the South China Sea basin.

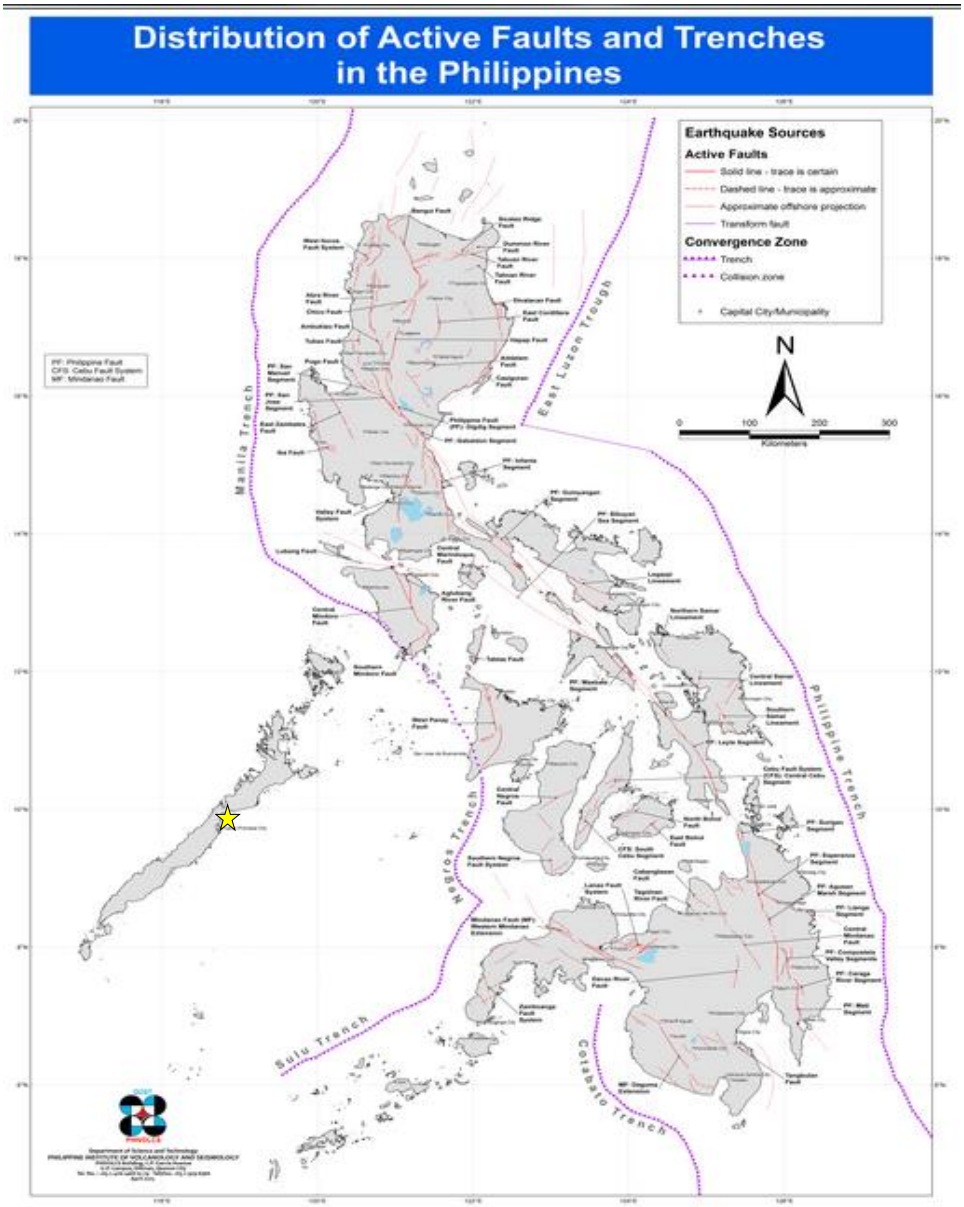


Figure 6 Distribution of active faults and trenches in the Philippines (PHIVOLCS, 2019), project location depicted by the yellow star.

Local Geology

El Nido is predominantly made of karst landscape – old, uplifted reef deposits that comprise steep mountains with thick forest covers.

Palawan is a member of the Eurasian plate with a different tectonic history than the rest of the Philippines which belongs to the Philippine Plate as explained in the previous section. The apparent coastal area of El Nido has experienced repeated episodes of aerial exposure and inundation associated with the Pleistocene glaciations and interglacials, although the adjacent Palawan Trough and South China Sea and Sulu Sea basins have always been submerged (Turak & DeVantier, 2010).

Coral reefs are patchily distributed across El Nido's coasts and offshore waters, developed from shallow depths of less than 20 m nearshore area to depths grater than 30 meters offshore. El Nido's reefs were all above sea level during the major Pleistocene glaciations, when sea level was significantly lower than present. At the end of the continental shelf and central South China and Sulu Seas, coral growth have been presumably supported throughout the glacial periods where waters are > 1,000 m deep, acting as a refugia, or a location which supports an isolated population of a once more widespread species, and source for recruitment following the reoccurrence of sea-level onto the continental shelves which occurred recently about 6,000 years ago, causing El Nido's coastal reefs to grow to sea level. (Turak & DeVantier, 2010).

Site investigation of the project area in Snake Island by the V.S.A Civil Engineering Consultancy Services team shows a local geology in the reef island that is generally different from the main Palawan Island. Figure 7 depicts the site geomorphology as seen during the DCPT Assessment for two locations of the proposed project.

Two distinct soil profiles were inferred within the extent of the project area, described according to their apparent characteristics and DCPT results:

1) Location 1

The results of the Dynamic Cone Penetrometer (DCP) Test signify that location 1 is underlain by very soft soil layers, including, but not limited to muddy clay deposits from the soil surface up to depths of 1.5 meters below ground level which could be attributed to its proximity to the mangrove swamp.

2) Location 2

Similar to Location 1, mangrove trees also surround Location 2 which describes the soft soil deposits that could have been sourced from the mud accumulations near the surface. However, there is a presence of hard, resistant soils at depth which could be due to the coralline basement and beach rocks present in the vicinity.

Figure 7 DCPT Testing Location 1(left) and Location 2 (right) in Snake Island

Geological Hazards

Tsunamis

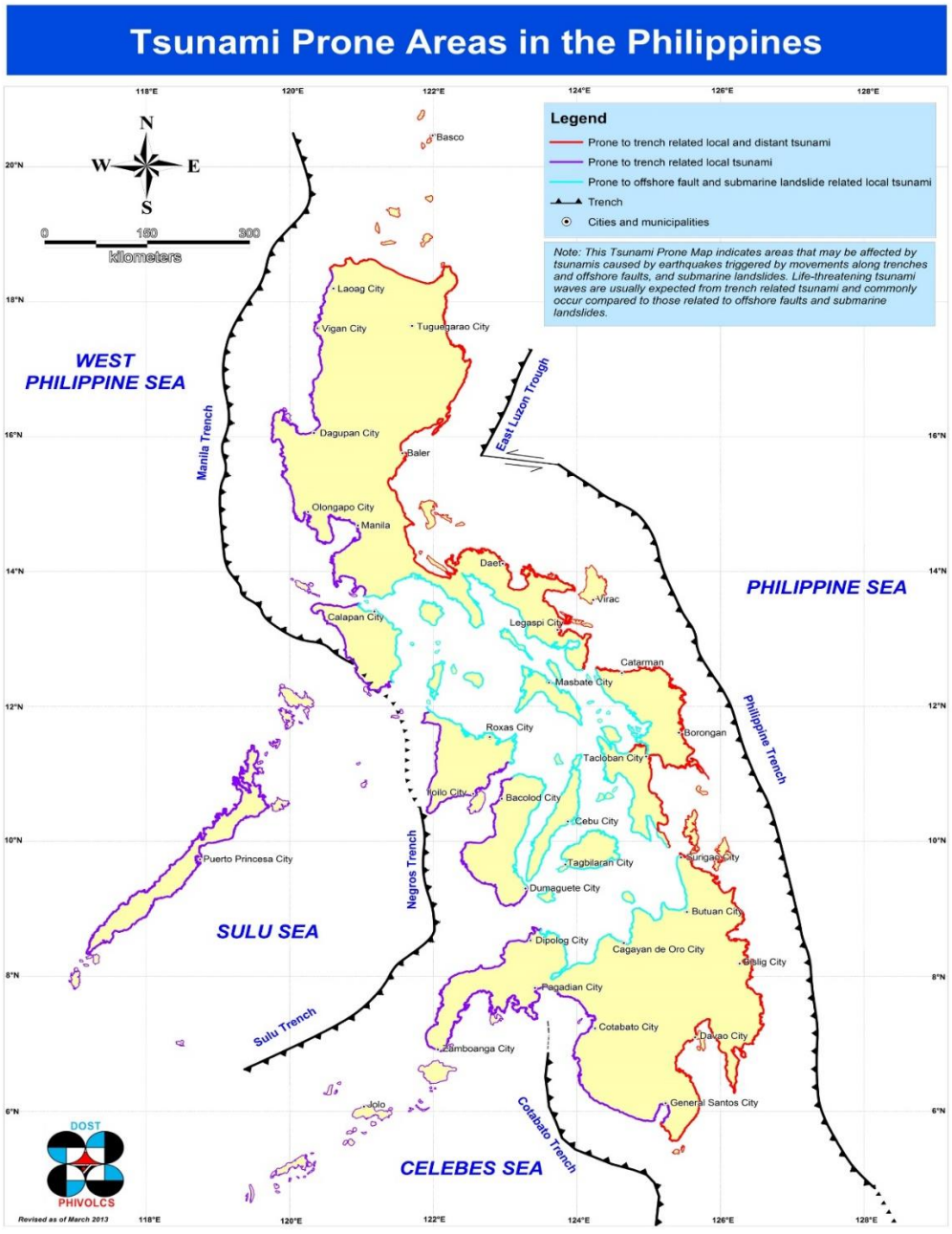


Figure 8 Map of tsunami prone areas in the Philippines (PHIVOLCS, 2013)

Long, high sea waves called *tsunamis* can be produced by the occurrence of earthquakes, landslides, and volcanic eruptions under the sea. These tsunamis reach tremendous speed and energy and may inflict great damage to property and living beings alike when it strikes a populated coastline.

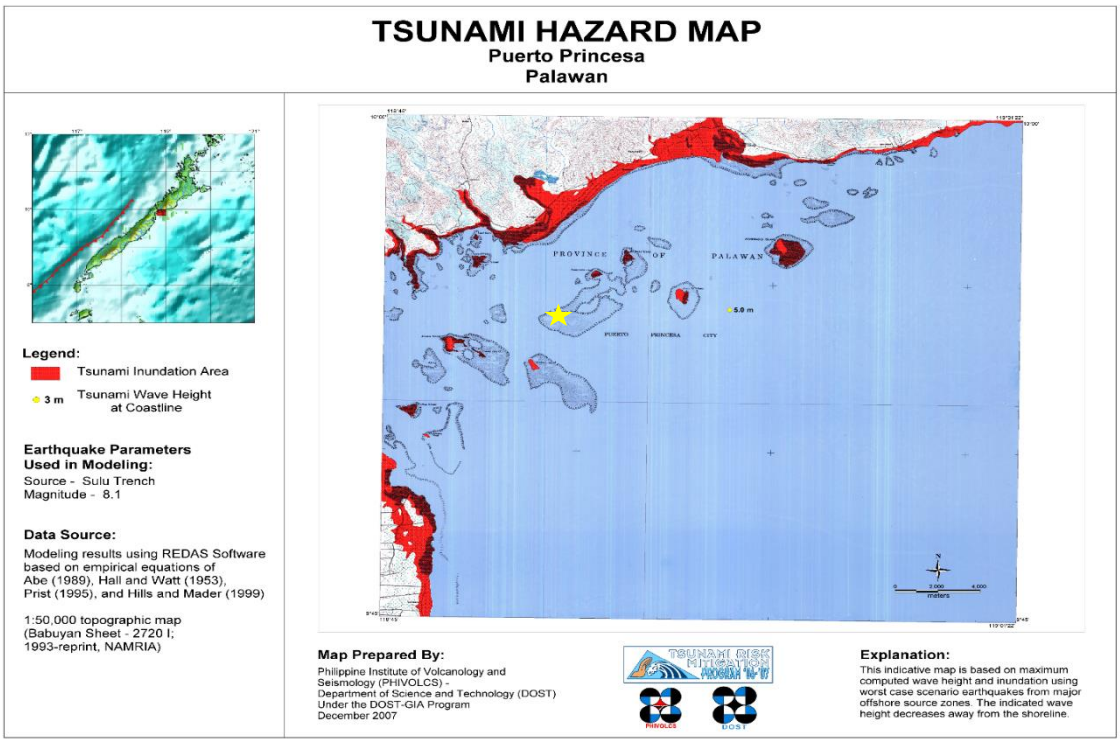


Figure 9 Tsunami hazard map of Puerto Princesa (PHIVOLCS, 2007)

Earthquake occurrences along the Sulu and Negros Trench may generate tsunamis that could traverse across Sulu Sea and reach the eastern coastline of Palawan. However, the project site is not in direct danger for tsunami in case Sulu Trench produces an 8.1-Magnitude earthquake as shown in Figure 9, the Tsunami Hazard Map from PHIVOLCS.

Volcanic Hazards

There are no active volcanoes in the island. Immense eruptions from volcanoes in other parts of the Philippines, however, may endanger the area to ash fall depending on the prevailing wind direction. Based on the data from DOST-PHIVOLCS, the nearest volcano from the project area is Mt. Kanlaon in Negros which is 475.2 km away.

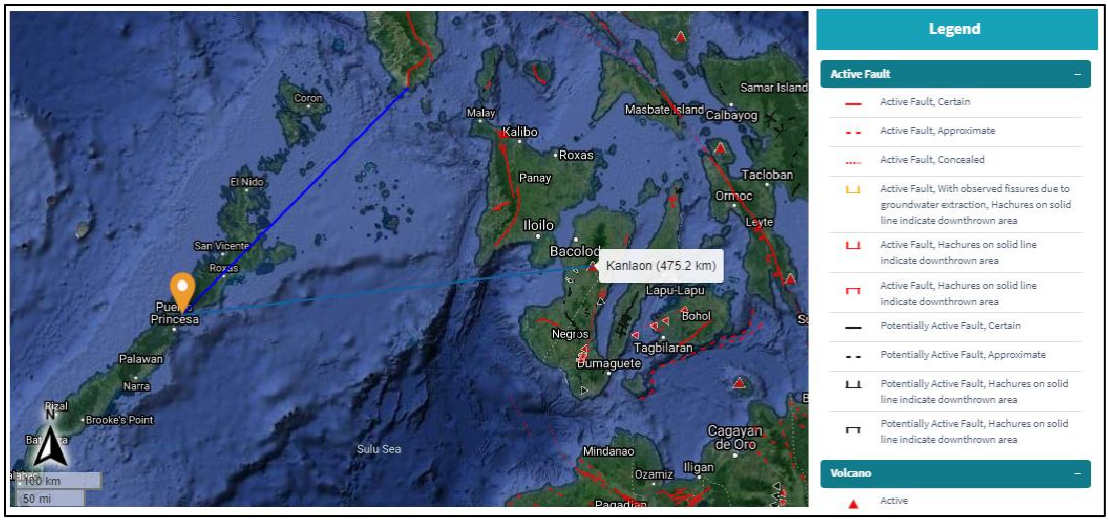


Figure 10 Nearest fault segment and volcano from the project area that are likely to pose earthquake- and volcanic-related hazards, respectively (from Hazard Hunter PH)

Earthquake-Related Hazards

Liquefaction

Soil liquefaction occurs in seismically active areas when saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden changes in stress conditions, in which material that is ordinarily solid behaves like a liquid. This phenomenon is most often observed in saturated, loose (low density or uncompacted) sandy soils. This is because loose sand has a tendency to compress when a load is applied. Dense sands by contrast tend to dilate. If the soil is saturated by water, a condition that often exists when the soil is below the water table, then water fills the gaps between pore spaces. In response to soil compressing, the pore pressure increases, and the water attempts to flow out from the soil to zones of low pressure (usually towards the ground surface).

Since Palawan is not seismically active, it may be considered as less prone to liquefaction. However, the soil type in the project site and its geographical location being near the coast, make it generally susceptible to liquefaction.

Ground Shaking

According to the seismic hazards assessment report of PHIVOLCS, all sites may be affected by ground shaking in the event of an earthquake and can be mitigated by following the provisions of the National Building Code and the Structural Building Code of the Philippines.

Seismic Design Considerations

Overview

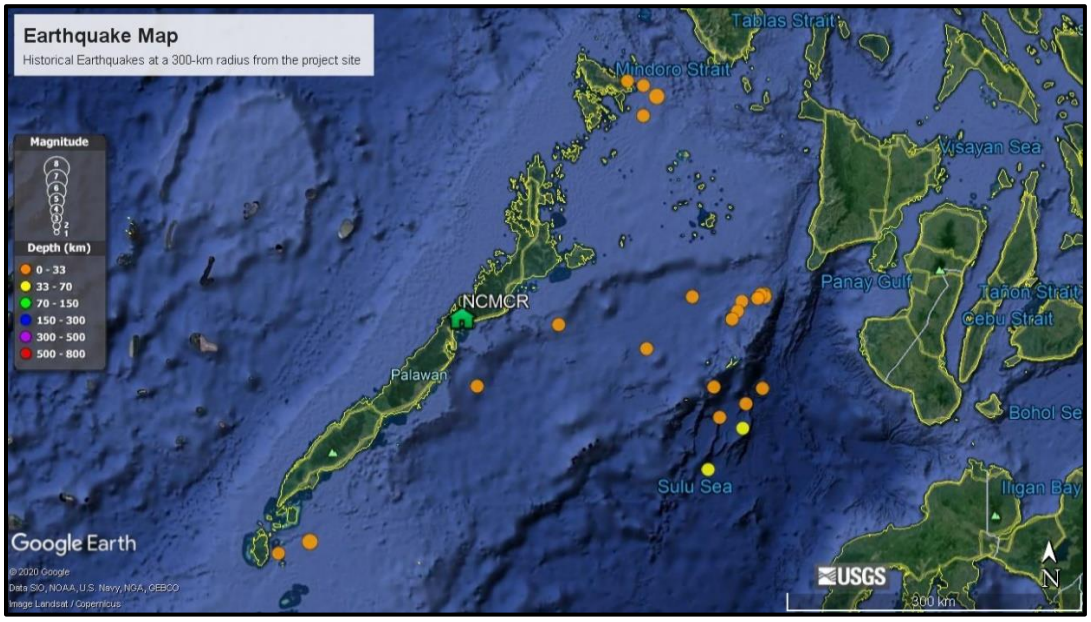


Figure 11 Image showing earthquakes that have occurred at a 300-km radius from the project site in the last century (1920 - Present)

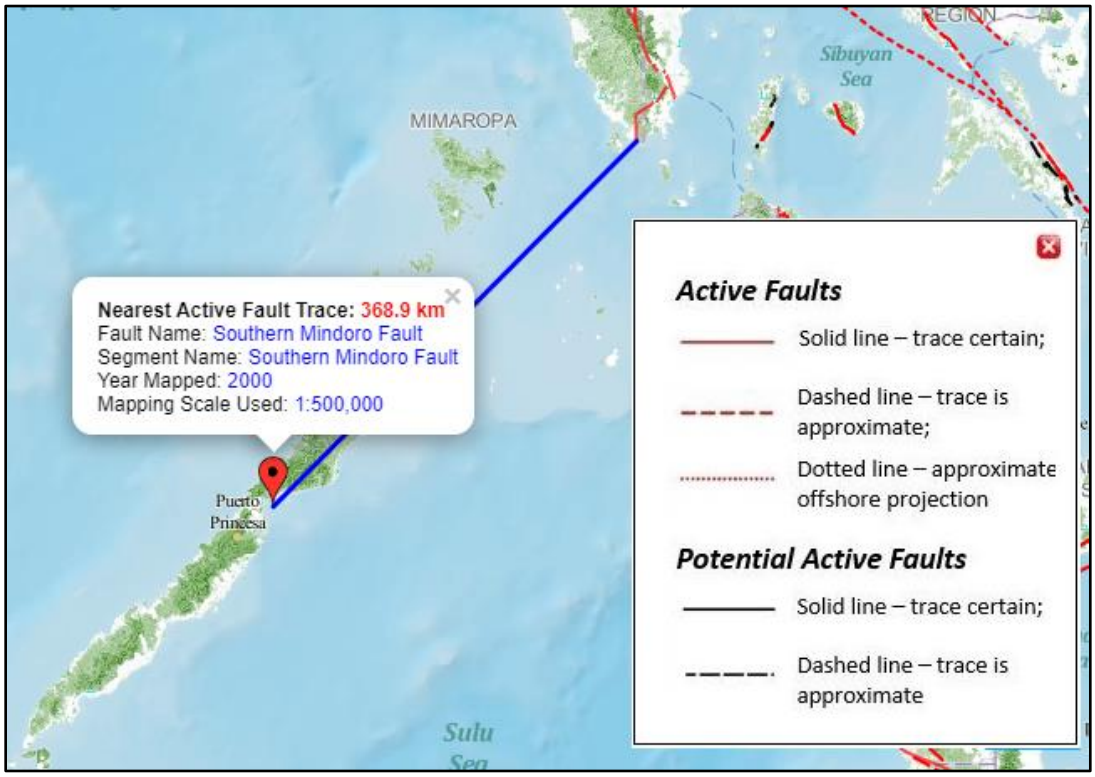


Figure 12 Fault map of the Philippines showing the nearest active fault trace from the project site (PHIVOLCS Faultfinder, 2020)

Peak Ground Acceleration

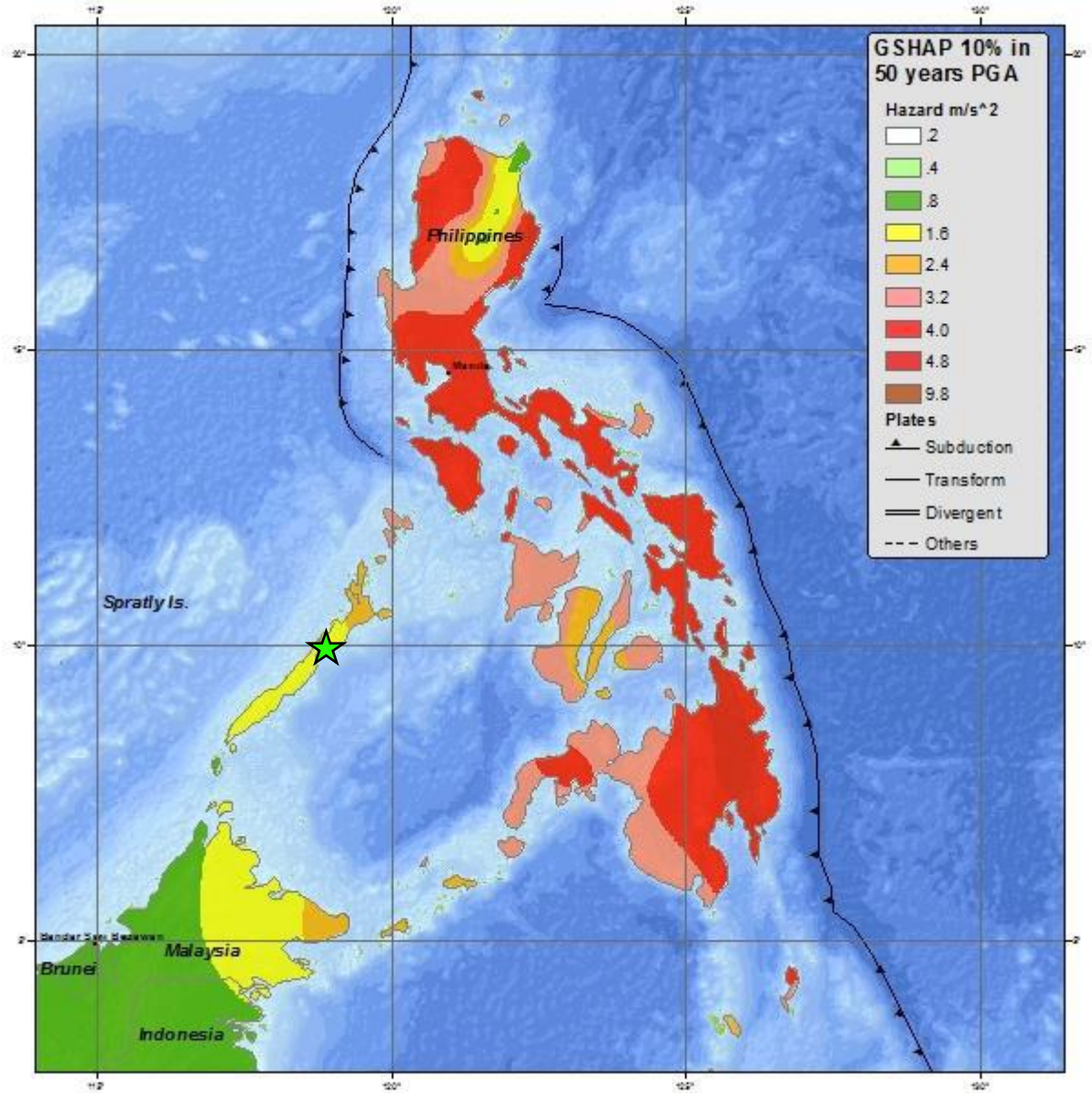


Figure 13 Peak Ground Acceleration Map of the Philippines with green star showing location of the project site

Based on the Philippine Seismic Hazard Map from the U.S. Geological Survey (USGS), the project area may experience a peak ground acceleration of 1.6 m/s^2, equivalent to 0.163 g. With the magnitude of this value, the Modified Mercalli Scale categorizes this as a Type VI Instrumental Intensity and hence, light potential damage and strong perceived shaking may be experienced.

Deterministic Calculations

The attenuation relation for Japan (Fukushima and Tanaka, 1994) was used based on the values attained using the equation below. The following correction factors were applied: 0.6 for rock, 0.87 for hard soil, 1.07 for medium soil and 1.39 for soft soil.

The attenuation equation of Fukushima and Tanaka is:

$$log_{10}A = 0.41M - log_{10}(R + 0.032\ x\ 10^{0.41}) - 0.0034R + 1.3$$

Where:

A is the mean peak acceleration (in cm/s^2);

R is the shortest distance between the site and the fault rupture (km); and,

M is the surface wave magnitude.

Based on a deterministic determination of Peak Ground Acceleration (PGA), the table below shows the seismic coefficients based on the nearest earthquake generator obtained from the U.S. Geological Survey (USGS):

Table 2. PGA computations with respective correction factors.

EQ GENERATOR	DISTANCE (km)	MAGNITUDE	PGA	ROCK	HARD SOIL	MEDIUM SOIL	SOFT SOIL
Southern Mindoro Fault	366	7.1	0.002	0.001	0.002	0.003	0.003
Negros Trench	330	5.2	0.001	0.000	0.001	0.001	0.001

Based on the results, to reduce the magnitude of site amplification, it is highly recommended that building the foundation on medium and soft soils are avoided.

NSCP Provisions

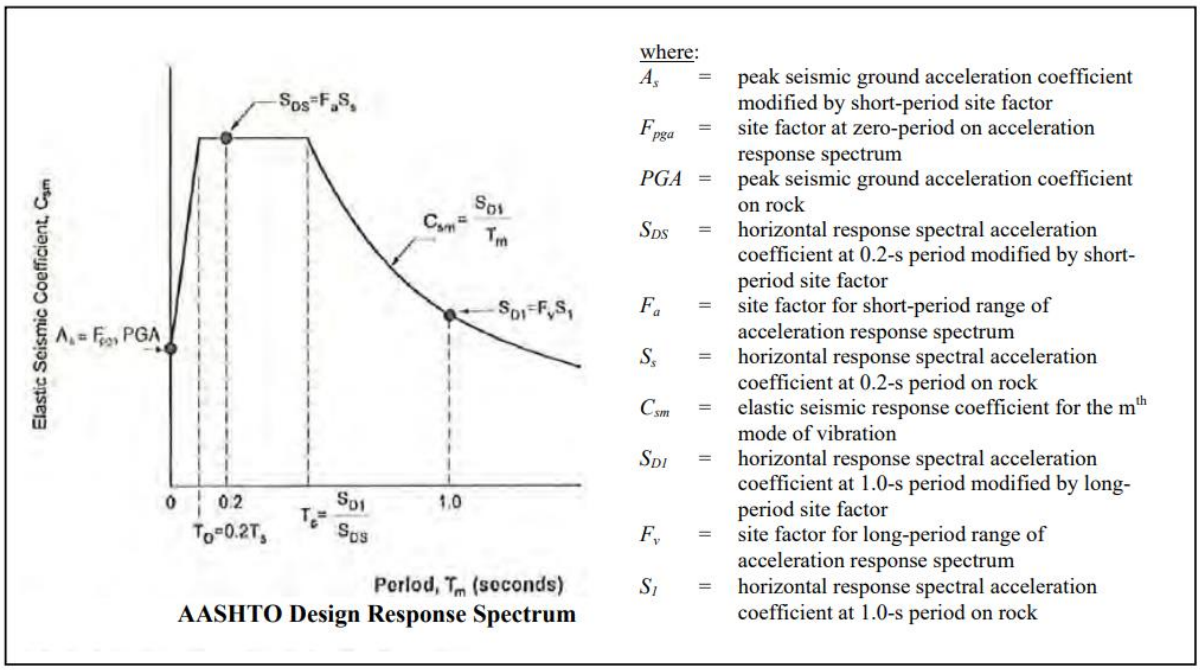
To satisfy the NSCP code provisions (2015) for earthquake design of buildings, the following seismic factors are determined:

Seismic Zone	= 2
Soil Profile Type	= S_E
Near-Source Factor, N_a	= 1.0
Near-Source Factor, N_v	= 1.0
Seismic Coefficient, C_a	= 0.34
Seismic Coefficient, C_v	= 0.64

Peak Ground and Spectral Acceleration

The DPWH D.O.75/NSCP Volume 2 – Bridges, 2005 2nd Edition assigns two (2) seismic zones in the Philippines shown in the figures below. In general, the whole country belongs to Zone 4, except Palawan which is in Zone 2.

The AASHTO LRFD Bridge Design Specifications, 2012, 6th Edition may also be referred in obtaining the PGA and spectral acceleration values. The general procedure to develop the design spectrum is to use the peak ground acceleration coefficient (PGA) and the short and long period spectral acceleration coefficients (S_S and S_L) based on the maps prepared in the DPWH specifications. The site-specific response spectrum ground-motion analysis were used to generate a uniform-hazard acceleration response spectrum considering a 7% probability of exceedance in 75 years (1,000 return period for Level 2 earthquake ground motion) and 53% probability of exceedance in 75 years (100-year return period for Level 1 earthquake ground motion).



AASHTO Design Response Spectrum

where:

A_s	=	peak seismic ground acceleration coefficient modified by short-period site factor
F_{pga}	=	site factor at zero-period on acceleration response spectrum
PGA	=	peak seismic ground acceleration coefficient on rock
S_{DS}	=	horizontal response spectral acceleration coefficient at 0.2-s period modified by short-period site factor
F_a	=	site factor for short-period range of acceleration response spectrum
S_s	=	horizontal response spectral acceleration coefficient at 0.2-s period on rock
C_{sm}	=	elastic seismic response coefficient for the m^{th} mode of vibration
S_{D1}	=	horizontal response spectral acceleration coefficient at 1.0-s period modified by long-period site factor
F_v	=	site factor for long-period range of acceleration response spectrum
S_1	=	horizontal response spectral acceleration coefficient at 1.0-s period on rock

The 5% damped-design spectrum shall be taken as specified in the figure above. This spectrum shall be calculated using the mapped peaked ground acceleration coefficients and the spectral acceleration coefficients scaled by zero-, short-, and long-period site factors, F_{PGA}, F_a and F_v respectively.

Geotechnical Investigation

Summary of Results

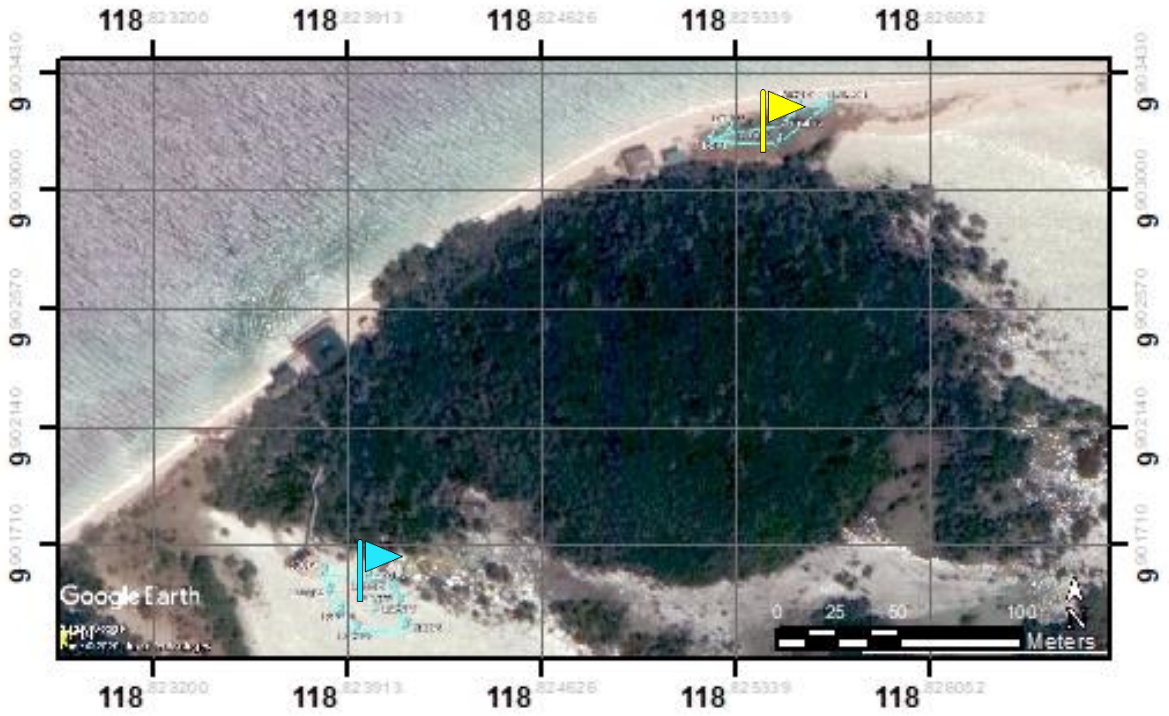


Figure 14 Bird's eye view of the sampling locations - Location 1 depicted by the yellow flag and Location 2 by the blue flag

Overview

This section of the report shows some geotechnical assessment gathered from the Dynamic Cone Penetrometer Test (DCPT). These assessments include: DCP resistance, the estimated allowable bearing capacities for each sampling site and the California Bearing Ration (CBR) for each layer. Allowable bearing capacity calculations were based on the study by Stockwell (1976) and CBR values were based on Webster et al (1992).

Dynamic Cone Penetrometer Test (DCPT)

Dynamic Cone Penetrometer Testing was conducted at the project site in order to get an overview of the average bearing capacity of the subsurface up to over one and a half meters (1.5) below the natural ground elevation.

Location 1

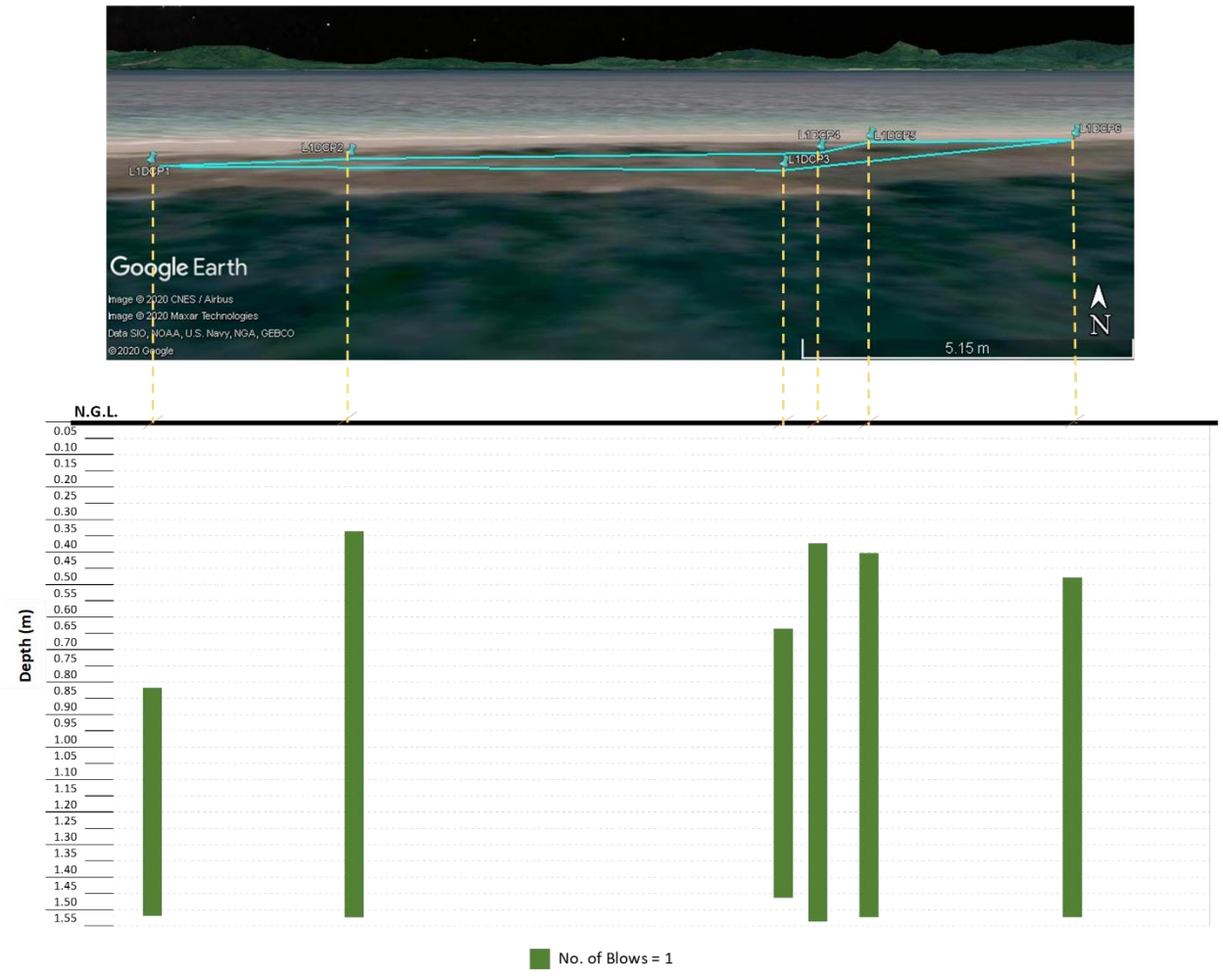


Figure 15 Depths of sampling at Location 1 relative to the natural ground level (NGL) and the corresponding number of blows for the sampled soil layers.

The image above illustrates the depth in meters of sampling on Location 1 and the corresponding number of blows needed to penetrate each layer. Based on the DCPT results, several layers on the sampling points in Location 1 have extremely soft soils with allowable bearing capacities ranging from 21 kPa to 60 kPa and California Bearing Ratio (CBR) values from 0.1% to 1.0%

Table 3. Allowable bearing capacities and California bearing ratio for the sampling points in Location 1

Depth (m)	Allowable Bearing Capacity (kPa)	California Bearing Ratio (%)
DCPT – 1		
0.82	32	0.2
0.92	41	0.3
1.02	41	0.3
1.13	38	0.3
1.18	68	1.4
1.21	100	3.8
1.25	81	2.2
1.28	100	3.8
1.35	53	0.7
1.42	53	0.7
1.48	60	1.0
1.52	81	2.2
DCPT – 2		
0.34	44	0.4
0.59	21	0.1
0.83	22	0.1
0.95	36	0.2
1.04	44	0.4
1.11	53	0.7
1.2	44	0.4
1.3	41	0.3
1.35	68	1.4
1.43	48	0.5
1.49	60	1.0
1.53	81	2.2
DCPT - 3		
0.64	21	0.1
0.76	36	0.2
0.88	36	0.2
0.96	48	0.5
1.01	68	1.4
1.07	60	1.0

1.12	68	1.4
1.19	53	0.7
1.23	81	2.2
1.27	81	2.2
1.31	81	2.2
1.34	100	3.8
1.37	100	3.8
1.4	100	3.8
1.43	100	3.8
1.46	100	3.8
1.48	134	8.6
DCPT – 4		
0.37	36	0.2
0.54	28	0.1
0.72	27	0.1
0.78	60	1.0
0.84	60	1.0
0.89	68	1.4
0.93	81	2.2
1.02	44	0.4
1.1	48	0.5
1.18	48	0.5
1.22	81	2.2
1.27	68	1.4
1.34	53	0.7
1.39	68	1.4
1.43	81	2.2
1.48	68	1.4
1.54	60	1.0
DCPT – 5		
0.4	36	0.2
0.51	38	0.3
0.6	44	0.4
0.8	25	0.1
0.95	31	0.2
1.02	53	0.7

1.08	60	1.0
1.13	68	1.4
1.18	68	1.4
1.24	60	1.0
1.28	81	2.2
1.33	68	1.4
1.37	81	2.2
1.4	100	3.8
1.44	81	2.2
1.48	81	2.2
1.52	81	2.2
DCPT – 6		
0.48	34	0.2
0.65	28	0.1
0.81	29	0.1
0.96	31	0.2
1.07	38	0.3
1.13	60	1.0
1.19	60	1.0
1.24	68	1.4
1.29	68	1.4
1.33	81	2.2
1.38	68	1.4
1.44	60	1.0
1.49	68	1.4
1.53	81	2.2

Location 2

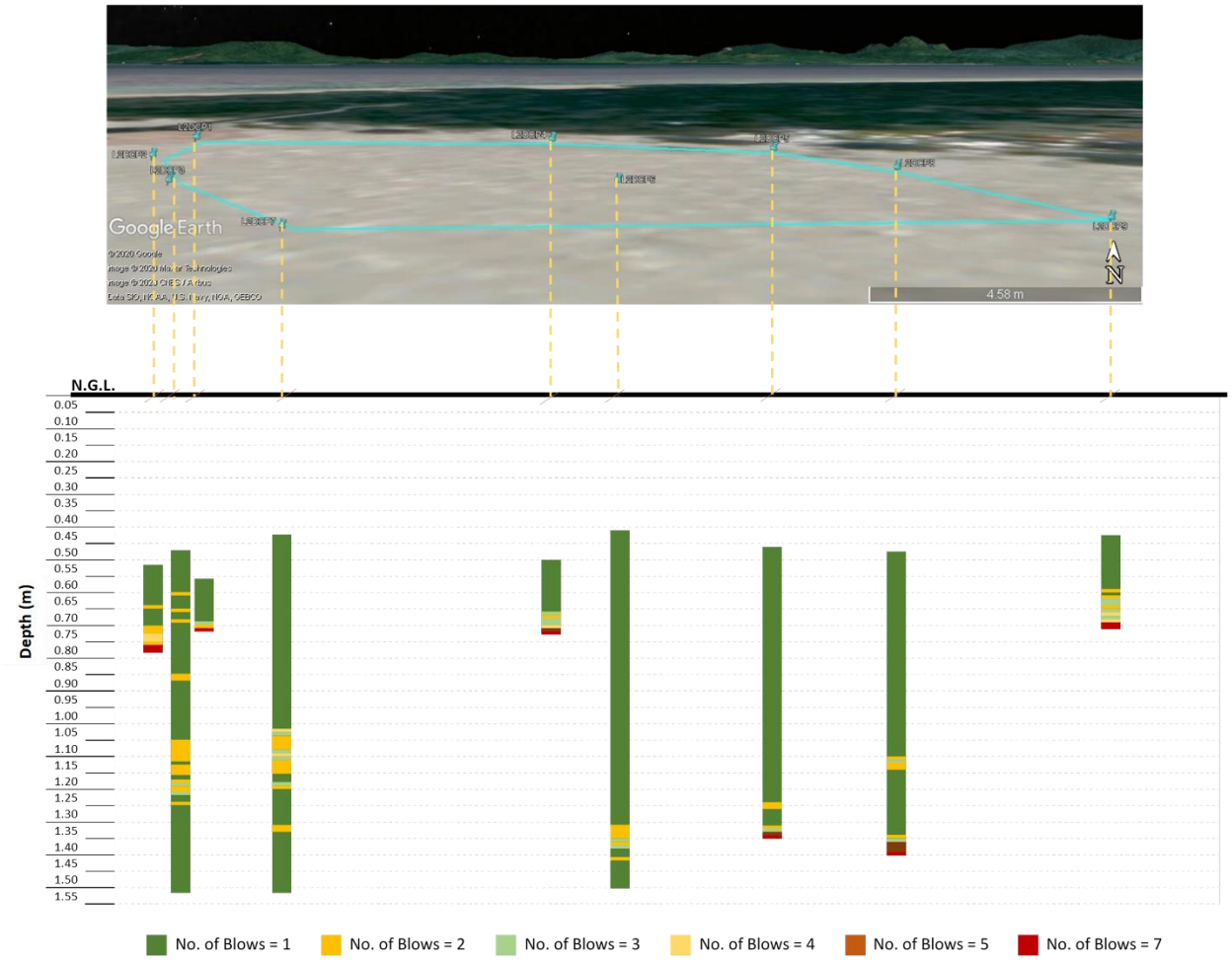


Figure 16 Depths of sampling at Location 2 relative to the natural ground level (NGL) and the corresponding number of blows for the sampled soil layers.

The image above illustrates the depth in meters of sampling on Location 2 and the corresponding number of blows needed to penetrate each layer. Based on the DCPT results, soil layers at Location 2 have higher DCP resistance in contrast to Location 1. Extremely soft soils were encountered on shallow depths below the natural ground level from 0.43 to 0.73 meters with allowable bearing capacities ranging from 38 kPa to 60 kPa and CBR Values from 0.3 to 1.0%.

Table 4. Allowable bearing capacities and California bearing ratio for the sampling points in Location 2

Depth (m)	Allowable Bearing Capacity (kPa)	California Bearing Ratio (%)
DCPT – 1		
0.56	100	3.8
0.58	134	8.6

0.60	134	8.6
0.61	223	22.2
0.62	223	22.2
0.63	223	22.2
0.64	223	22.2
0.65	223	22.2
0.67	134	8.6
0.68	223	22.2
0.69	223	22.2
0.70	501	75.8
0.71	372	48.1
0.72	934	195.8
DCPT – 2		
0.52	38	0.3
0.56	81	2.2
0.58	134	8.6
0.6	134	8.6
0.62	134	8.6
0.63	223	22.2
0.64	223	22.2
0.65	372	48.1
0.66	223	22.2
0.67	223	22.2
0.68	223	22.2
0.7	134	8.6
0.71	223	22.2
0.72	372	48.1
0.73	372	48.1
0.74	619	104.6
0.75	619	104.6
0.76	372	48.1
0.77	934	195.8
0.78	934	195.8
DCPT – 3		
0.47	68	1.4
0.51	81	2.2

0.55	81	2.2
0.58	100	3.8
0.59	223	22.2
0.6	223	22.2
0.61	372	48.1
0.62	223	22.2
0.63	223	22.2
0.64	223	22.2
0.65	223	22.2
0.66	372	48.1
0.67	223	22.2
0.68	223	22.2
0.69	372	48.1
0.71	134	8.6
0.74	100	3.8
0.76	134	8.6
0.78	134	8.6
0.8	134	8.6
0.81	223	22.2
0.82	223	22.2
0.83	223	22.2
0.84	223	22.2
0.85	223	22.2
0.86	372	48.1
0.87	372	48.1
0.88	223	22.2
0.89	223	22.2
0.9	223	22.2
0.91	223	22.2
0.92	223	22.2
0.93	223	22.2
0.94	223	22.2
0.95	223	22.2
0.96	223	22.2
0.97	223	22.2
0.98	223	22.2

0.99	223	22.2
1.01	134	8.6
1.02	223	22.2
1.03	223	22.2
1.04	223	22.2
1.05	372	48.1
1.06	372	48.1
1.07	372	48.1
1.08	372	48.1
1.09	372	48.1
1.1	372	48.1
1.12	223	22.2
1.13	223	22.2
1.14	372	48.1
1.15	372	48.1
1.16	372	48.1
1.17	223	22.2
1.18	372	48.1
1.19	501	75.8
1.2	372	48.1
1.21	372	48.1
1.22	501	75.8
1.23	223	22.2
1.24	223	22.2
1.25	372	48.1
1.26	223	22.2
1.31	68	1.4
1.34	100	3.8
1.38	81	2.2
1.41	100	3.8
1.44	100	3.8
1.46	134	8.6
1.49	100	3.8
1.52	100	3.8
DCPT – 4		
0.5	60	1.0

0.56	60	1.0
0.6	81	2.2
0.62	134	8.6
0.63	223	22.2
0.64	223	22.2
0.65	223	22.2
0.66	223	22.2
0.67	501	75.8
0.68	372	48.1
0.69	501	75.8
0.7	501	75.8
0.71	619	104.6
0.72	729	134.3
0.73	934	195.8
DCPT – 5		
0.46	60	1.0
0.5	81	2.2
0.56	60	1.0
0.61	68	1.4
0.66	68	1.4
0.7	81	2.2
0.74	81	2.2
0.81	53	0.7
0.86	68	1.4
0.9	81	2.2
0.94	81	2.2
0.98	81	2.2
1.02	81	2.2
1.05	100	3.8
1.07	134	8.6
1.1	100	3.8
1.12	134	8.6
1.14	134	8.6
1.16	134	8.6
1.18	134	8.6
1.19	223	22.2

1.21	134	8.6
1.22	223	22.2
1.23	223	22.2
1.24	223	22.2
1.26	223	22.2
1.27	223	22.2
1.28	223	22.2
1.3	134	8.6
1.31	223	22.2
1.32	372	48.1
1.33	501	75.8
1.34	729	134.3
1.35	934	195.8
DCPT – 6		
0.42	68	1.4
0.46	81	2.2
0.49	100	3.8
0.53	81	2.2
0.56	100	3.8
0.6	81	2.2
0.63	100	3.8
0.66	100	3.8
0.69	100	3.8
0.73	81	2.2
0.76	100	3.8
0.8	81	2.2
0.83	100	3.8
0.87	81	2.2
0.91	81	2.2
0.94	100	3.8
0.98	81	2.2
1.00	134	8.6
1.03	100	3.8
1.05	134	8.6
1.08	100	3.8
1.1	134	8.6

1.11	223	22.2
1.13	134	8.6
1.15	134	8.6
1.16	223	22.2
1.17	223	22.2
1.18	223	22.2
1.20	134	8.6
1.21	223	22.2
1.23	134	8.6
1.24	223	22.2
1.25	223	22.2
1.28	100	3.8
1.3	134	8.6
1.31	223	22.2
1.32	372	48.1
1.33	372	48.1
1.34	372	48.1
1.35	372	48.1
1.36	501	75.8
1.37	372	48.1
1.38	501	75.8
1.39	223	22.2
1.40	223	22.2
1.41	223	22.2
1.42	372	48.1
1.43	223	22.2
1.44	223	22.2
1.45	223	22.2
1.46	223	22.2
1.47	223	22.2
1.48	223	22.2
1.49	223	22.2
1.50	223	22.2
DCPT – 7		
0.43	28	0.1
0.49	60	1.0

0.55	60	1.0
0.61	60	1.0
0.66	68	1.4
0.71	68	1.4
0.76	68	1.4
0.8	81	2.2
0.84	81	2.2
0.88	81	2.2
0.91	100	3.8
0.93	134	8.6
0.94	223	22.2
0.95	223	22.2
0.96	223	22.2
0.97	223	22.2
0.98	223	22.2
1.01	100	3.8
1.02	223	22.2
1.03	619	104.6
1.04	501	75.8
1.05	372	48.1
1.06	372	48.1
1.07	372	48.1
1.08	372	48.1
1.09	501	75.8
1.1	619	104.6
1.11	501	75.8
1.13	223	22.2
1.15	223	22.2
1.16	223	22.2
1.17	223	22.2
1.18	223	22.2
1.19	501	75.8
1.2	372	48.1
1.23	100	3.8
1.24	223	22.2
1.25	223	22.2

1.27	134	8.6
1.29	134	8.6
1.31	134	8.6
1.33	223	22.2
1.35	134	8.6
1.38	100	3.8
1.41	100	3.8
1.44	100	3.8
1.47	100	3.8
1.52	68	1.4
DCPT – 8		
0.47	48	0.5
0.53	60	1.0
0.59	60	1.0
0.66	53	0.7
0.73	53	0.7
0.75	134	8.6
0.77	134	8.6
0.78	223	22.2
0.79	223	22.2
0.8	223	22.2
0.81	223	22.2
0.83	134	8.6
0.84	223	22.2
0.87	100	3.8
0.9	100	3.8
0.93	100	3.8
0.95	134	8.6
0.98	100	3.8
1	134	8.6
1.01	223	22.2
1.03	134	8.6
1.06	100	3.8
1.08	134	8.6
1.1	134	8.6
1.11	372	48.1

1.12	501	75.8
1.13	372	48.1
1.14	372	48.1
1.15	223	22.2
1.16	223	22.2
1.17	223	22.2
1.18	223	22.2
1.19	223	22.2
1.21	134	8.6
1.23	134	8.6
1.27	81	2.2
1.29	134	8.6
1.3	223	22.2
1.31	223	22.2
1.32	223	22.2
1.33	223	22.2
1.34	223	22.2
1.35	372	48.1
1.36	501	75.8
1.37	729	134.3
1.38	729	134.3
1.39	729	134.3
1.4	934	195.8
DCPT – 9		
0.43	48	0.5
0.48	68	1.4
0.52	81	2.2
0.55	100	3.8
0.57	134	8.6
0.58	223	22.2
0.59	223	22.2
0.6	372	48.1
0.61	223	22.2
0.62	372	48.1
0.63	501	75.8
0.64	501	75.8

0.65	372	48.1
0.66	501	75.8
0.67	619	104.6
0.68	501	75.8
0.69	619	104.6
0.7	934	195.8
0.71	934	195.8

Conclusions and Recommendation

Due to the very weak strength of the soil, it is recommended that ground improvement measures are implemented. It is recommended to place a total of 0.6m thick engineered fill material with two geogrids. These two layers of geogrid raft foundation must be placed at 0.2m and 0.4m from the bottom of the footing.

In addressing the issues discussed, the construction of a "**GEOGRID FOUNDATION RAFT**" below the foundation to reduce the pressure exerted on the sub-grade. The geogrids are able to address the problems of low bearing capacity of soils by filling the gap between the available bearing capacity of the soil and the actual load from the concrete foundation.

Generally, the load dispersion happens at 2:1 through the soil. However, by using one or more layers of geogrid raft below the concrete foundation, load dispersion happens at 1:1 pattern thereby reducing the final load transferred to the weak natural sub-grade.

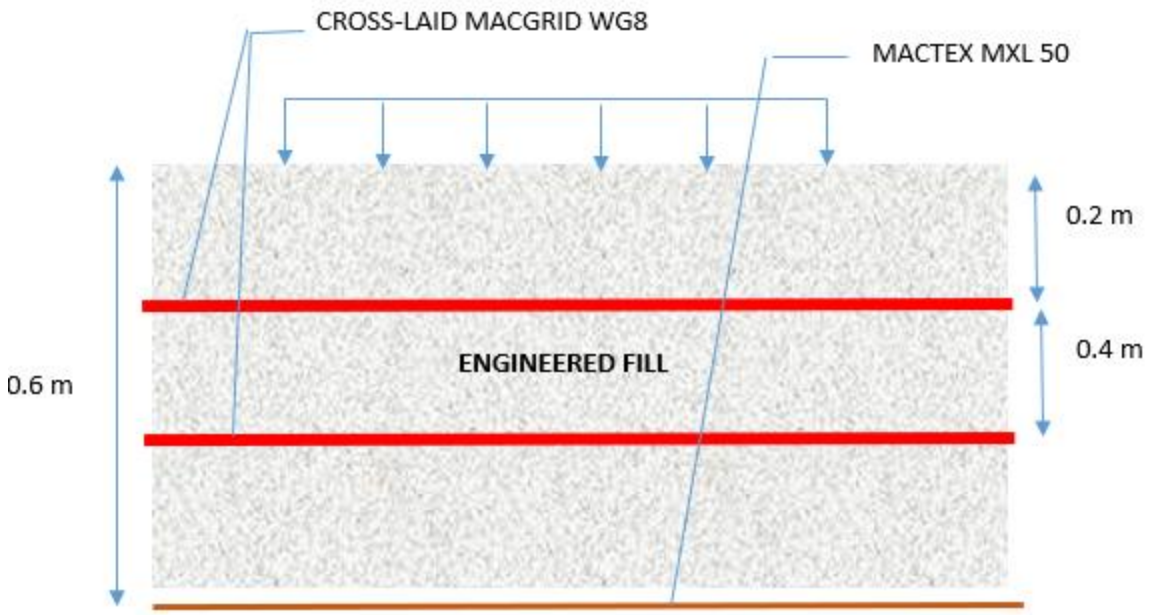


Figure 17. Image showing recommended configuration of soil improvement.

The above-raft shall have the following components:

1) Engineered Fill – The engineered fill shall consist of free draining granular materials free from excess moisture, muck, roots, sod and other deleterious materials. The fill is compacted at 95% MDD and the shear angle of internal friction shall not be less than 34 degrees. The material shall conform to the following grading requirements:

Sieve Designation, mm	Percent Passing
100	100
0.0425	0 – 60
0.075	0 – 15 max

2) Mactex MXL 50 - The geotextile shall act as a separator and shall prevent the “good material fills” from penetrating the natural soft sub-grade.

3) MacGrid WG8 – The geogrid has an ultimate tensile strength of 80 KN/m. Two sheets of geogrid are lain in a way that the two main tensile directions are orthogonal to each other. This is to provide the necessary support in both directions

Site Preparation and Earthworks

The following recommendations are intended to attain the planned grades within the footprint areas of the proposed structures for the site:

- Areas to support slabs-on-grade should be stripped of all surface debris, asphalt pavement, litter and any organic topsoil. Following stripping, any soft or organic-laden soil should be undercut and removed from structural areas of the site. The Geotechnical Engineer or qualified representative should observe the proper stripping, excavation and preparation;
- Once stripping and undercutting is complete and prior to beginning fill placement activities, it is recommended that all surface areas receiving new fill be evaluated (where possible) by proof-rolling the exposed grade. The subgrade should be proof-rolled in the presence of a suitable qualified geotechnical engineer of record or qualified representative with at least two passes of a fully loaded dump truck weighing at least 20 tons or similar equipment to identify any soft/loose packets. A density of 95% of the standard maximum dry density for the subgrade is required in the supper foot under the slab on grade.
- Soils that are observed to rut or deflect excessively under the moving load should be undercut and replaced with properly compacted fill soils satisfying the structural fill requirements detailed in this report.
- If soils are wet of optimum, lowering the moisture content by scarifying and aeration (discing and exposure to sun and wind) may be required. However, this method may not be feasible if construction occurs during wet season conditions. Very moist to wet soils will “pump” under the operation of heavy equipment, resulting in deep rutting and perhaps rendering the operation of grading and paving equipment difficult or impossible.

Therefore, other methods of subgrade modification may be required in areas of any high moisture content. Modification may also be achieved by undercutting and replacement with granular subbase combination with geotexture separation layer or geogrid reinforcement), mixing stone into the subgrade, or treating the subgrade with hydrated lime. The appropriate method of subgrade modification should be determined at the time of construction.

- Fill placement should be in loose horizontal lifts no greater than 200 mm thick compacted uniformly with the proper equipment.
- Fill required to support the footings and the slab-on-grade should be compacted to at least 98% of the maximum dry density. The moisture content of the fill should be within ±2% of the optimum moisture content.
- Fill placement on sloping ground should be benched into the existing slope and bear on natural materials.
- If any loose materials or unsuitable soils are noted within the floor slab during densification, they should be undercut and replaced with compacted structural fill. The base of the undercut areas should be evaluated by a geotechnical engineer during construction to verify that any loose or unsuitable soils have been completely removed and that stable soil has been achieved. If loose native soils are encountered below the design footing level, then such soils shall also be undercut and replaced with compacted structural fill, lean concrete, or flowable fill, placed up to their design footing level. The actual depths of undercuts should be determined by the Geotechnical Engineer of Record at the time of construction.

For proper site preparation, the earthwork should be performed under the observation of and to the satisfaction of the Geotechnical Engineer of Record or his/her authorized representative. The quality of compaction must be monitored by Field Density Tests using ASTM D-1556 (Sand Cone Method) or ASTM D-6938 (Nuclear Gage Method).

Limitations

The conclusions and recommendations submitted in this report are based in part upon the data obtained from a limited number of soil samples which were collected from the subsurface exploration. The nature and extent of variations between explorations may not become evident until construction or further investigation. There are some variations in subsurface conditions across the site, which cannot be fully defined by this investigation. It is unlikely that the measurements obtained from the sampling/testing during the investigation will represent the extreme conditions that may exist within the sites. The assessments, analyses and recommendations in this report are based on the assumption that no abrupt changes are encountered in the aforementioned project site. This includes the presence of varying groundwater levels, liquefiable layers and any factors that may significantly decrease the stability and bearing capacity of the ground.

If variations or other conditions do become evident, it will be necessary to reevaluate the recommendations of this report. Interpretations and computations in this report were based on the borehole logs that were submitted to the author. The author is not responsible for any incorrect information that was derived from the aforementioned data. Moreover, in the event that conclusions or recommendations on the data contained in this report are made by others, the author is free from the conclusions and recommendations that are made hereafter.

This report has been prepared specifically for the Client and other stakeholders. Information contained in this report should not be construed as appropriate for any other purposes or for other users. Its scope is limited to this project and location described herein and represents the author's understanding of the significant aspects relevant to the soil and foundation considerations in this report.

We appreciate this opportunity to be of service. Please do not hesitate to contact our office if you have any further enquiries regarding the findings or recommendations found in this report.

Prepared by:

CLEMENT CHRISTIAN A. FAJARDO
Geotechnical Engineer
PRC Reg. No.: 002295
ANCOLD No.: 3981
PTR No.: 947220 issued May 22, 2020
in the City of Manila

Appendices

Dynamic Cone Penetrometer Test Results (Location 1)

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID: -

Chainage (m): -

Project: Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research

Location: PUERTO PRINCESA

Client: Provincial Environment and Natural Resources Office - Palawan

Sheet No.: 1

Test Date: 03-Jul-20

Project No. 1911PENRO1

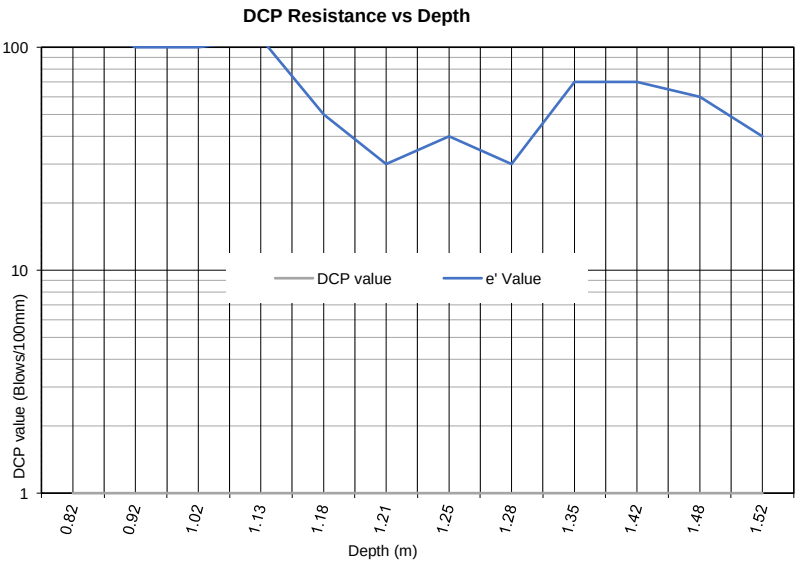
Co-ordinates System

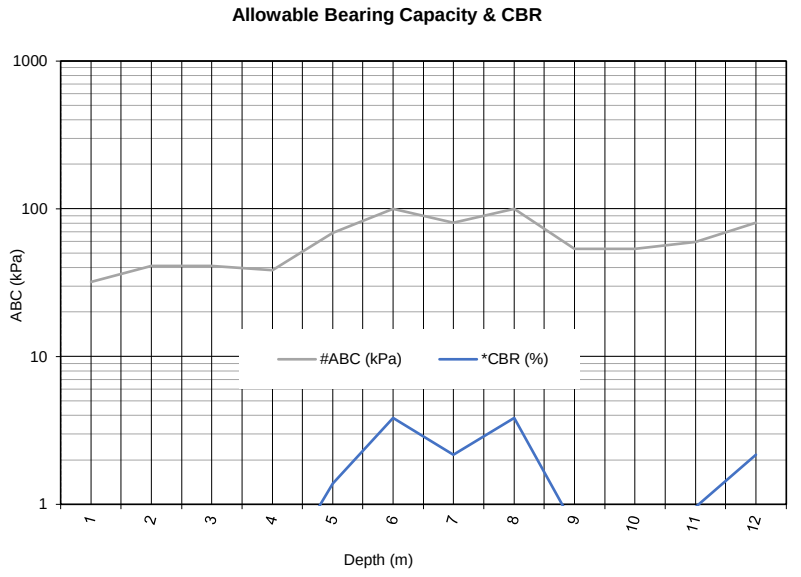
E: 118.82524

N: 9.90317

CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.82	1	140	32	0.2
0.92	1	100	41	0.3
1.02	1	100	41	0.3
1.13	1	110	38	0.3
1.18	1	50	68	1.4
1.21	1	30	100	3.8
1.25	1	40	81	2.2
1.28	1	30	100	3.8
1.35	1	70	53	0.7
1.42	1	70	53	0.7
1.48	1	60	60	1.0
1.52	1	40	81	2.2





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).

** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

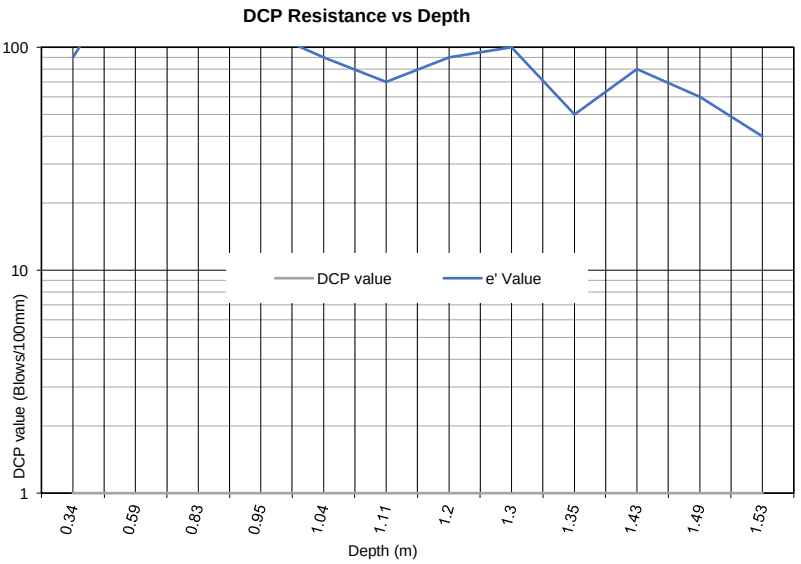
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

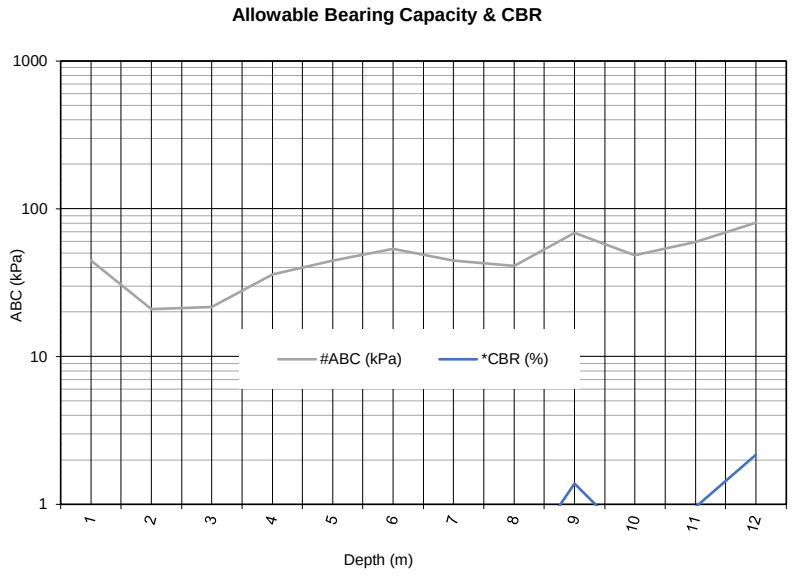
Co-ordinates System

E: 118.82531
N: 9.9032

CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.34	1	90	44	0.4
0.59	1	250	21	0.1
0.83	1	240	22	0.1
0.95	1	120	36	0.2
1.04	1	90	44	0.4
1.11	1	70	53	0.7
1.2	1	90	44	0.4
1.3	1	100	41	0.3
1.35	1	50	68	1.4
1.43	1	80	48	0.5
1.49	1	60	60	1.0
1.53	1	40	81	2.2





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

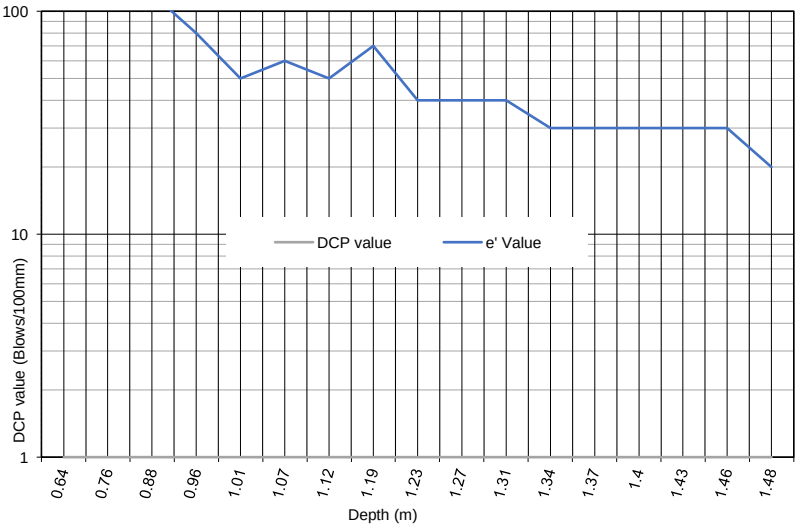
Co-ordinates System

E: 118.82549
N: 9.90316

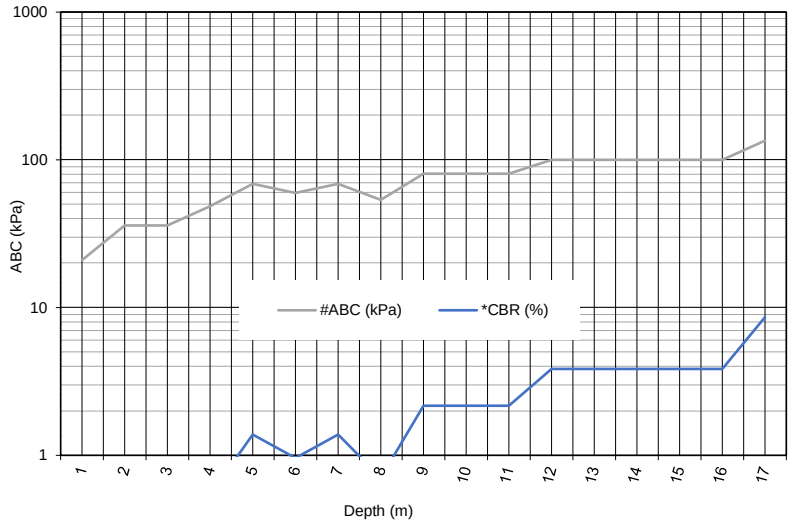
CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.64	1	250	21	0.1
0.76	1	120	36	0.2
0.88	1	120	36	0.2
0.96	1	80	48	0.5
1.01	1	50	68	1.4
1.07	1	60	60	1.0
1.12	1	50	68	1.4
1.19	1	70	53	0.7
1.23	1	40	81	2.2
1.27	1	40	81	2.2
1.31	1	40	81	2.2
1.34	1	30	100	3.8
1.37	1	30	100	3.8
1.4	1	30	100	3.8
1.43	1	30	100	3.8
1.46	1	30	100	3.8
1.48	1	20	134	8.6

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR



NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

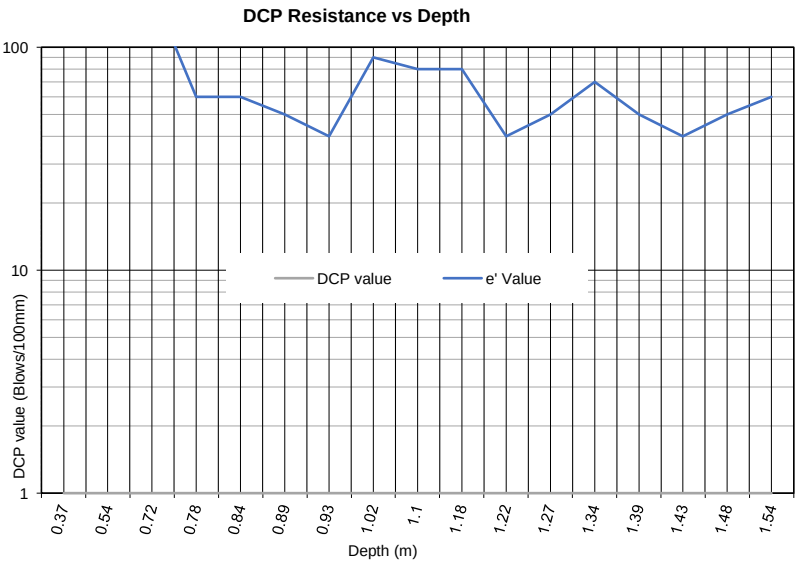
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

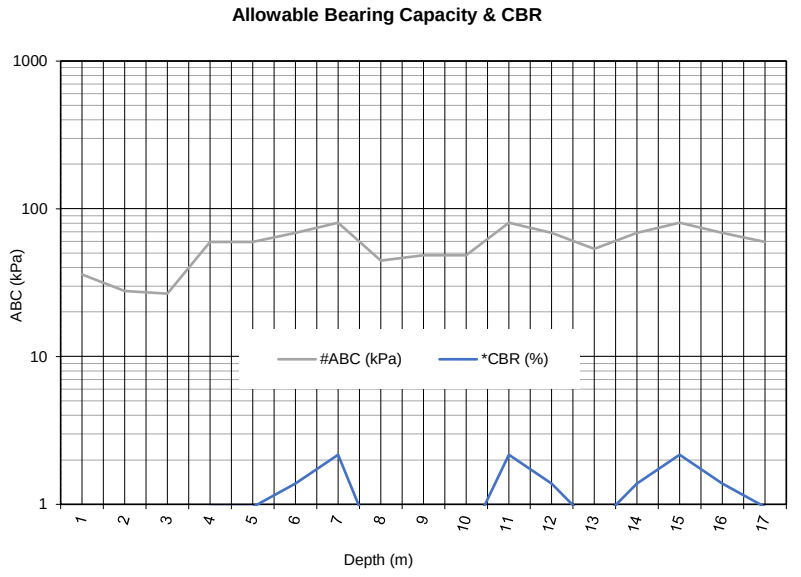
Co-ordinates System

E: 118.82552
N: 9.90323

CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.37	1	120	36	0.2
0.54	1	170	28	0.1
0.72	1	180	27	0.1
0.78	1	60	60	1.0
0.84	1	60	60	1.0
0.89	1	50	68	1.4
0.93	1	40	81	2.2
1.02	1	90	44	0.4
1.1	1	80	48	0.5
1.18	1	80	48	0.5
1.22	1	40	81	2.2
1.27	1	50	68	1.4
1.34	1	70	53	0.7
1.39	1	50	68	1.4
1.43	1	40	81	2.2
1.48	1	50	68	1.4
1.54	1	60	60	1.0





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

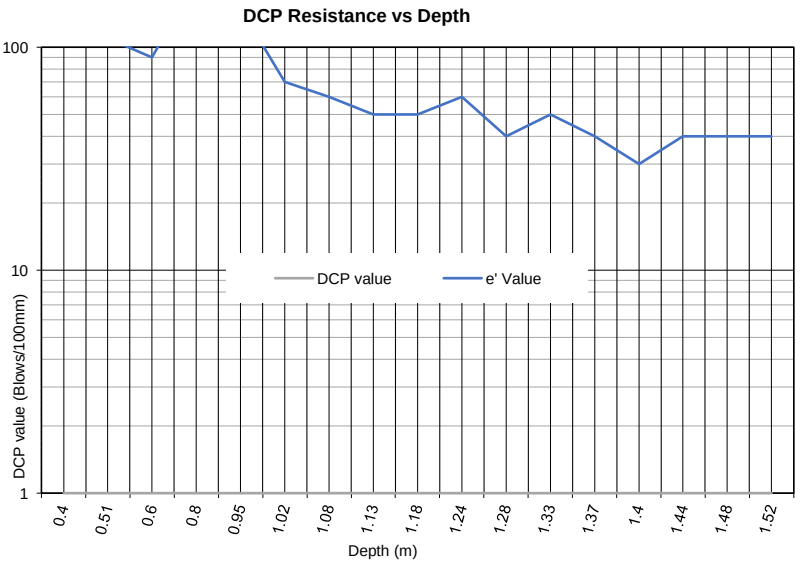
Co-ordinates System

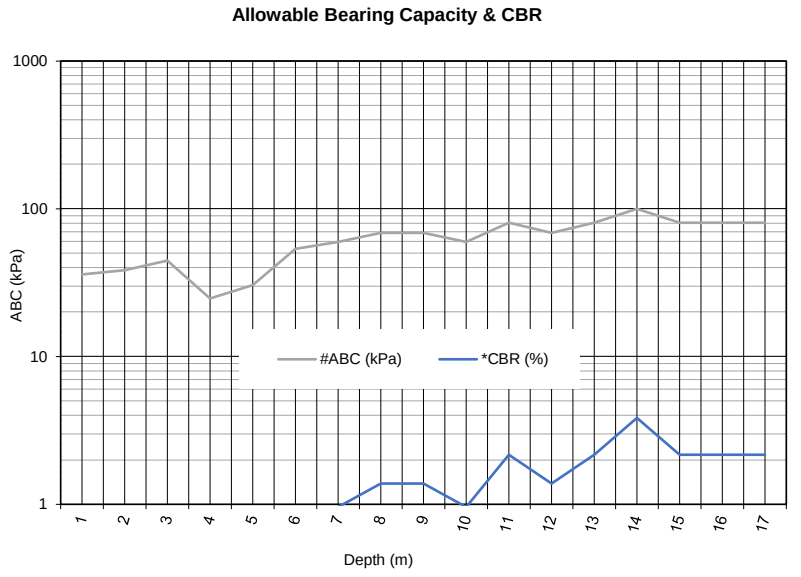
E: 118.82556

N: 9.90329

CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.4	1	120	36	0.2
0.51	1	110	38	0.3
0.6	1	90	44	0.4
0.8	1	200	25	0.1
0.95	1	150	31	0.2
1.02	1	70	53	0.7
1.08	1	60	60	1.0
1.13	1	50	68	1.4
1.18	1	50	68	1.4
1.24	1	60	60	1.0
1.28	1	40	81	2.2
1.33	1	50	68	1.4
1.37	1	40	81	2.2
1.4	1	30	100	3.8
1.44	1	40	81	2.2
1.48	1	40	81	2.2
1.52	1	40	81	2.2





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).

** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

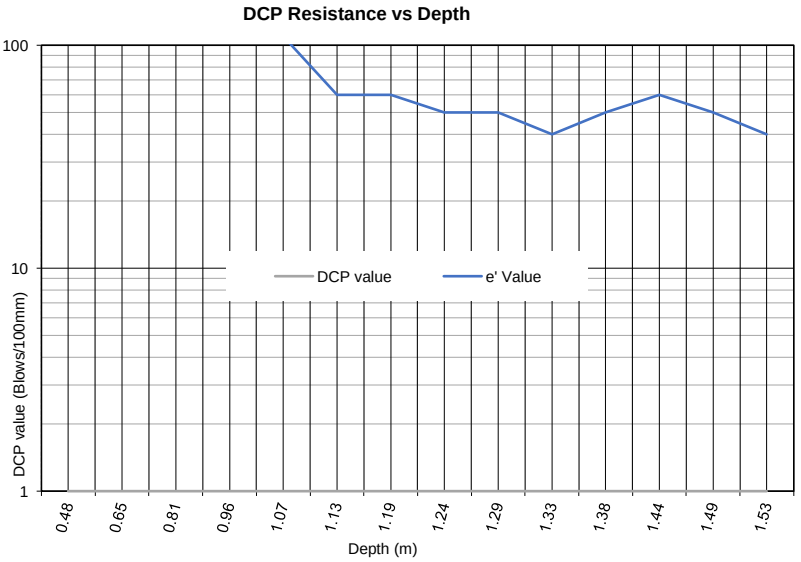
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

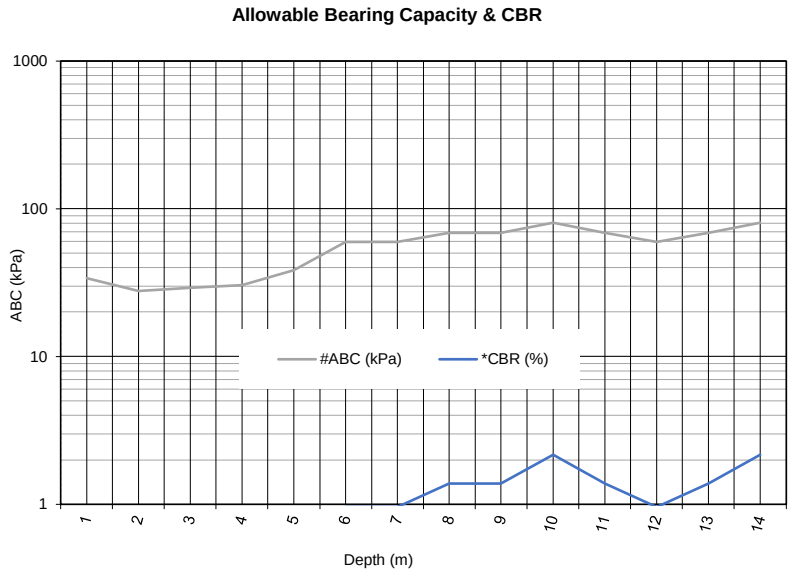
Co-ordinates System

E: 118.82568
N: 9.90331

CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.48	1	130	34	0.2
0.65	1	170	28	0.1
0.81	1	160	29	0.1
0.96	1	150	31	0.2
1.07	1	110	38	0.3
1.13	1	60	60	1.0
1.19	1	60	60	1.0
1.24	1	50	68	1.4
1.29	1	50	68	1.4
1.33	1	40	81	2.2
1.38	1	50	68	1.4
1.44	1	60	60	1.0
1.49	1	50	68	1.4
1.53	1	40	81	2.2





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

Dynamic Cone Penetrometer Test Results (Location 2)

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

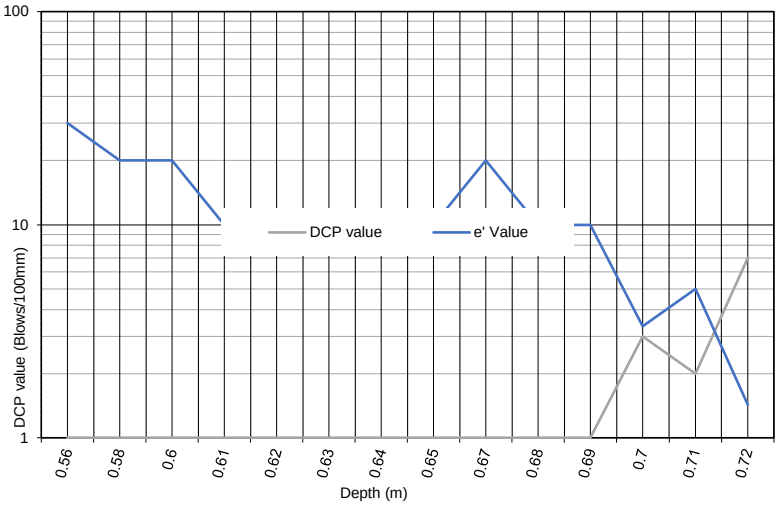
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System	**E:**	118.82382
	N:	9.9016

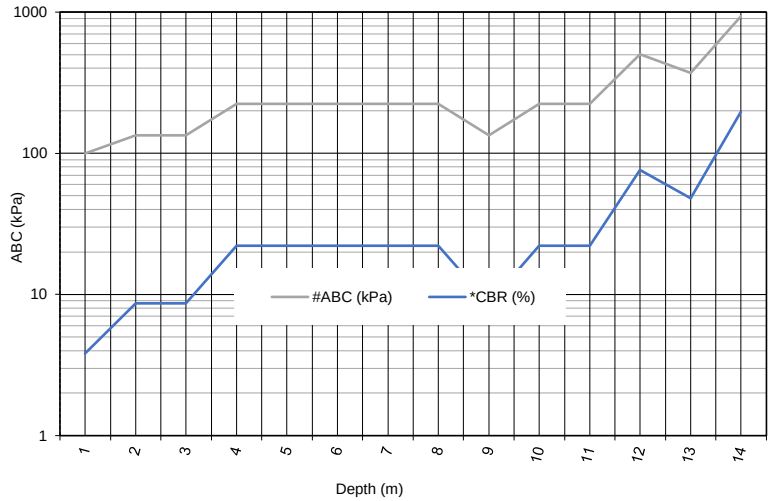
CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.56	1	30	100	3.8
0.58	1	20	134	8.6
0.6	1	20	134	8.6
0.61	1	10	223	22.2
0.62	1	10	223	22.2
0.63	1	10	223	22.2
0.64	1	10	223	22.2
0.65	1	10	223	22.2
0.67	1	20	134	8.6
0.68	1	10	223	22.2
0.69	1	10	223	22.2
0.7	3	3	501	75.8
0.71	2	5	372	48.1
0.72	7	1	934	195.8

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR



NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System

E: 118.82834
N: 9.90152

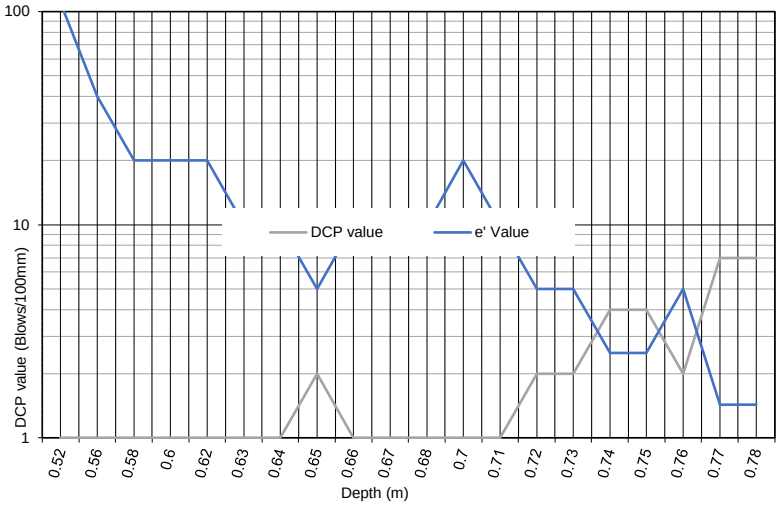
CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.52	1	110	38	0.3
0.56	1	40	81	2.2
0.58	1	20	134	8.6
0.6	1	20	134	8.6
0.62	1	20	134	8.6
0.63	1	10	223	22.2
0.64	1	10	223	22.2
0.65	2	5	372	48.1
0.66	1	10	223	22.2
0.67	1	10	223	22.2
0.68	1	10	223	22.2
0.7	1	20	134	8.6
0.71	1	10	223	22.2
0.72	2	5	372	48.1
0.73	2	5	372	48.1
0.74	4	3	619	104.6
0.75	4	3	619	104.6
0.76	2	5	372	48.1
0.77	7	1	934	195.8
0.78	7	1	934	195.8

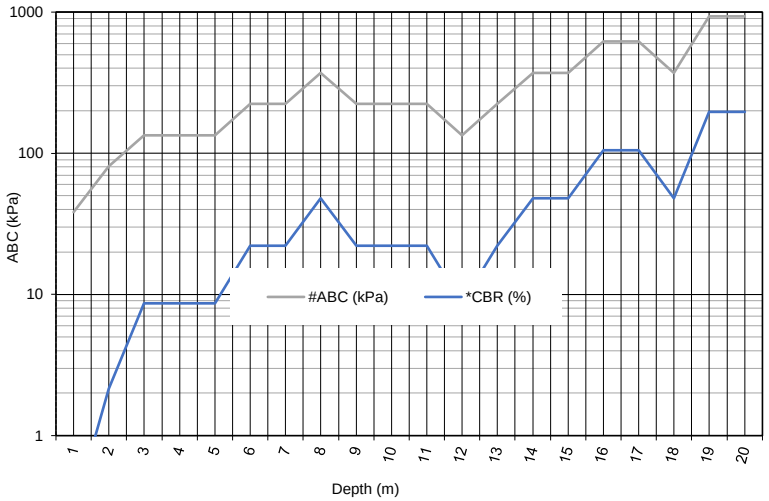
NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR



DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

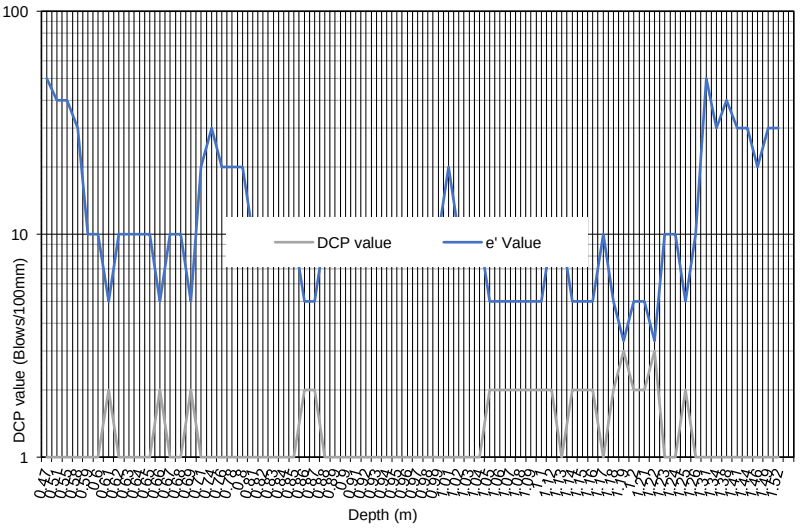
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System	**E:**	118.82388
	N:	9.90146

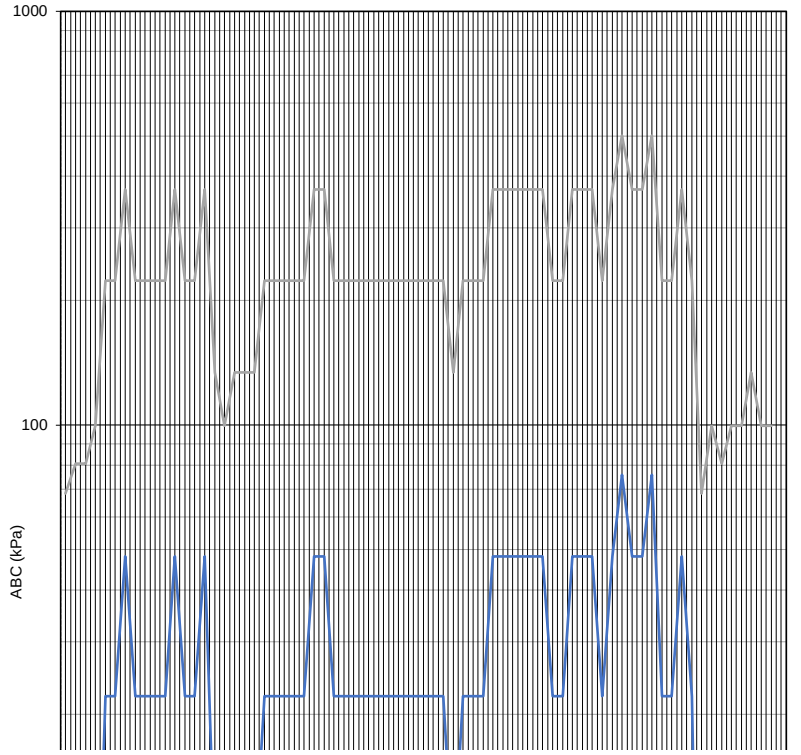
CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.47	1	50	68	1.4
0.51	1	40	81	2.2
0.55	1	40	81	2.2
0.58	1	30	100	3.8
0.59	1	10	223	22.2
0.6	1	10	223	22.2
0.61	2	5	372	48.1
0.62	1	10	223	22.2
0.63	1	10	223	22.2
0.64	1	10	223	22.2
0.65	1	10	223	22.2
0.66	2	5	372	48.1
0.67	1	10	223	22.2
0.68	1	10	223	22.2
0.69	2	5	372	48.1
0.71	1	20	134	8.6
0.74	1	30	100	3.8
0.76	1	20	134	8.6
0.78	1	20	134	8.6
0.8	1	20	134	8.6
0.81	1	10	223	22.2
0.82	1	10	223	22.2
0.83	1	10	223	22.2
0.84	1	10	223	22.2
0.85	1	10	223	22.2
0.86	2	5	372	48.1
0.87	2	5	372	48.1
0.88	1	10	223	22.2
0.89	1	10	223	22.2
0.9	1	10	223	22.2
0.91	1	10	223	22.2
0.92	1	10	223	22.2
0.93	1	10	223	22.2
0.94	1	10	223	22.2
0.95	1	10	223	22.2
0.96	1	10	223	22.2
0.97	1	10	223	22.2
0.98	1	10	223	22.2
0.99	1	10	223	22.2
1.01	1	20	134	8.6
1.02	1	10	223	22.2
1.03	1	10	223	22.2
1.04	1	10	223	22.2
1.05	2	5	372	48.1
1.06	2	5	372	48.1
1.07	2	5	372	48.1
1.08	2	5	372	48.1
1.09	2	5	372	48.1
1.1	2	5	372	48.1
1.12	2	10	223	22.2
1.13	1	10	223	22.2
1.14	2	5	372	48.1
1.15	2	5	372	48.1
1.16	2	5	372	48.1
1.17	1	10	223	22.2
1.18	2	5	372	48.1
1.19	3	3	501	75.8
1.2	2	5	372	48.1
1.21	2	5	372	48.1
1.22	3	3	501	75.8
1.23	1	10	223	22.2
1.24	1	10	223	22.2
1.25	2	5	372	48.1
1.26	1	10	223	22.2

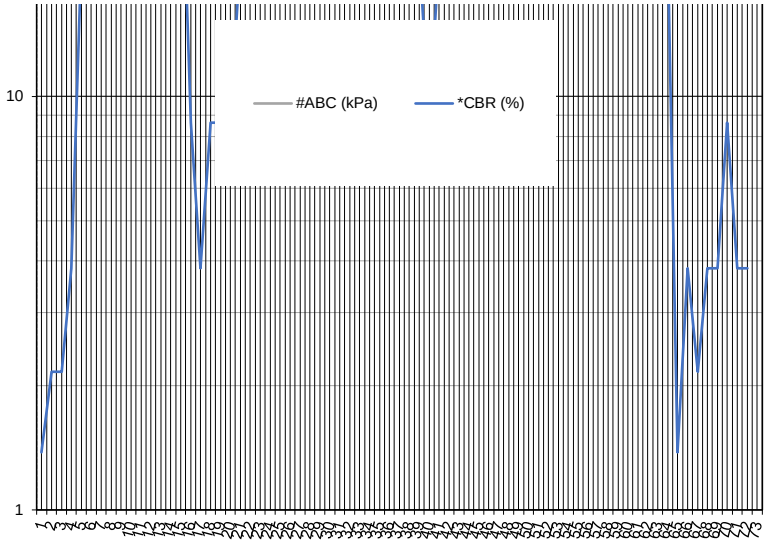
DCP Resistance vs Depth



Allowable Bearing Capacity & CBR



1.31	1	50	68	1.4
1.34	1	30	100	3.8
1.38	1	40	81	2.2
1.41	1	30	100	3.8
1.44	1	30	100	3.8
1.46	1	20	134	8.6
1.49	1	30	100	3.8
1.52	1	30	100	3.8



NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

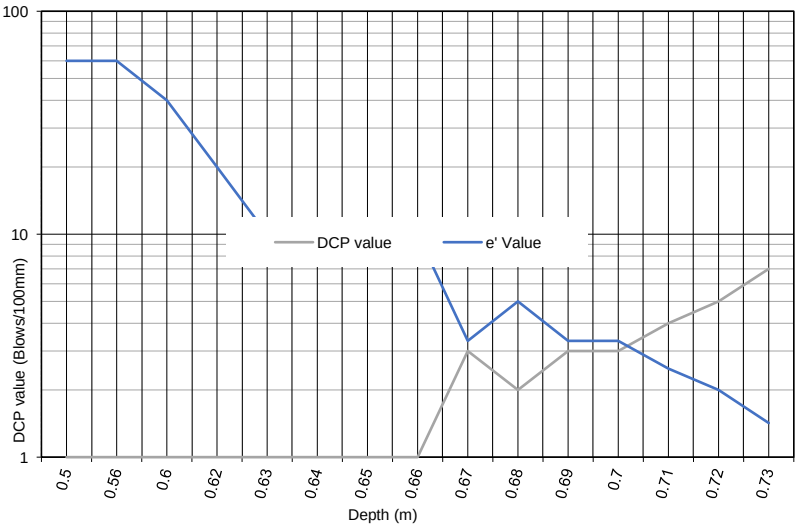
Co-ordinates System

E: 118.82398
N: 9.90159

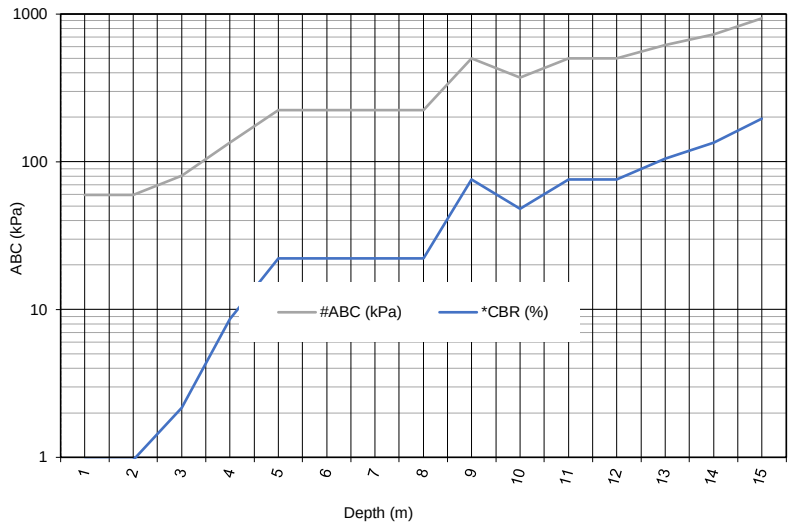
CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.5	1	60	60	1.0
0.56	1	60	60	1.0
0.6	1	40	81	2.2
0.62	1	20	134	8.6
0.63	1	10	223	22.2
0.64	1	10	223	22.2
0.65	1	10	223	22.2
0.66	1	10	223	22.2
0.67	3	3	501	75.8
0.68	2	5	372	48.1
0.69	3	3	501	75.8
0.7	3	3	501	75.8
0.71	4	3	619	104.6
0.72	5	2	729	134.3
0.73	7	1	934	195.8

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR



NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

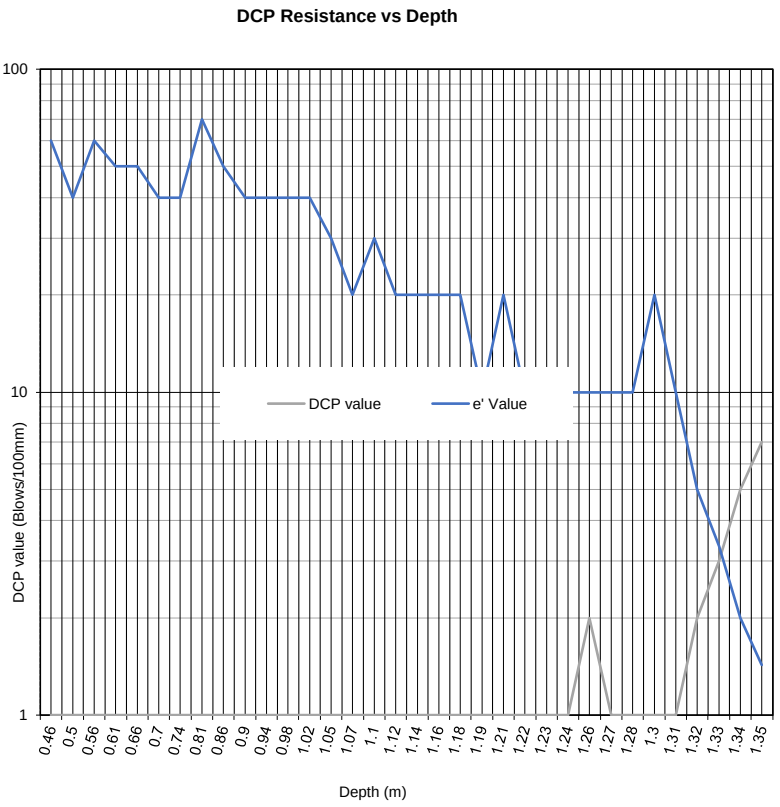
Chainage (m):

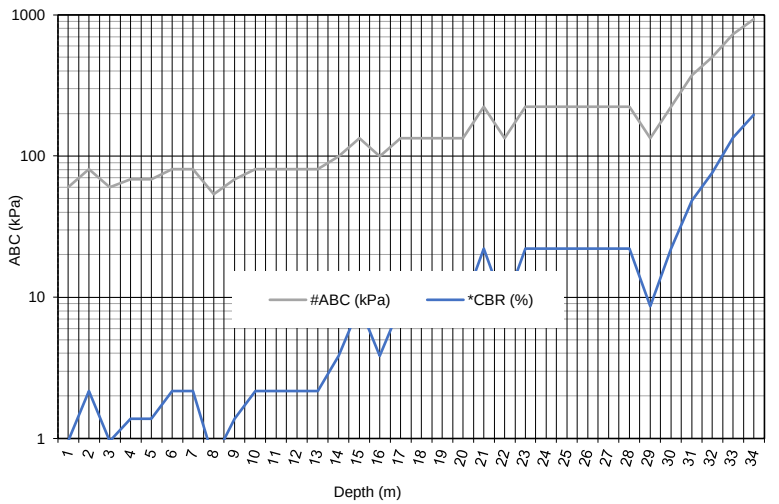
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System	**E:**	118.82407
	N:	9.90155

CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.46	1	60	60	1.0
0.5	1	40	81	2.2
0.56	1	60	60	1.0
0.61	1	50	68	1.4
0.66	1	50	68	1.4
0.7	1	40	81	2.2
0.74	1	40	81	2.2
0.81	1	70	53	0.7
0.86	1	50	68	1.4
0.9	1	40	81	2.2
0.94	1	40	81	2.2
0.98	1	40	81	2.2
1.02	1	40	81	2.2
1.05	1	30	100	3.8
1.07	1	20	134	8.6
1.1	1	30	100	3.8
1.12	1	20	134	8.6
1.14	1	20	134	8.6
1.16	1	20	134	8.6
1.18	1	20	134	8.6
1.19	1	10	223	22.2
1.21	1	20	134	8.6
1.22	1	10	223	22.2
1.23	1	10	223	22.2
1.24	1	10	223	22.2
1.26	2	10	223	22.2
1.27	1	10	223	22.2
1.28	1	10	223	22.2
1.3	1	20	134	8.6
1.31	1	10	223	22.2
1.32	2	5	372	48.1
1.33	3	3	501	75.8
1.34	5	2	729	134.3
1.35	7	1	934	195.8





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

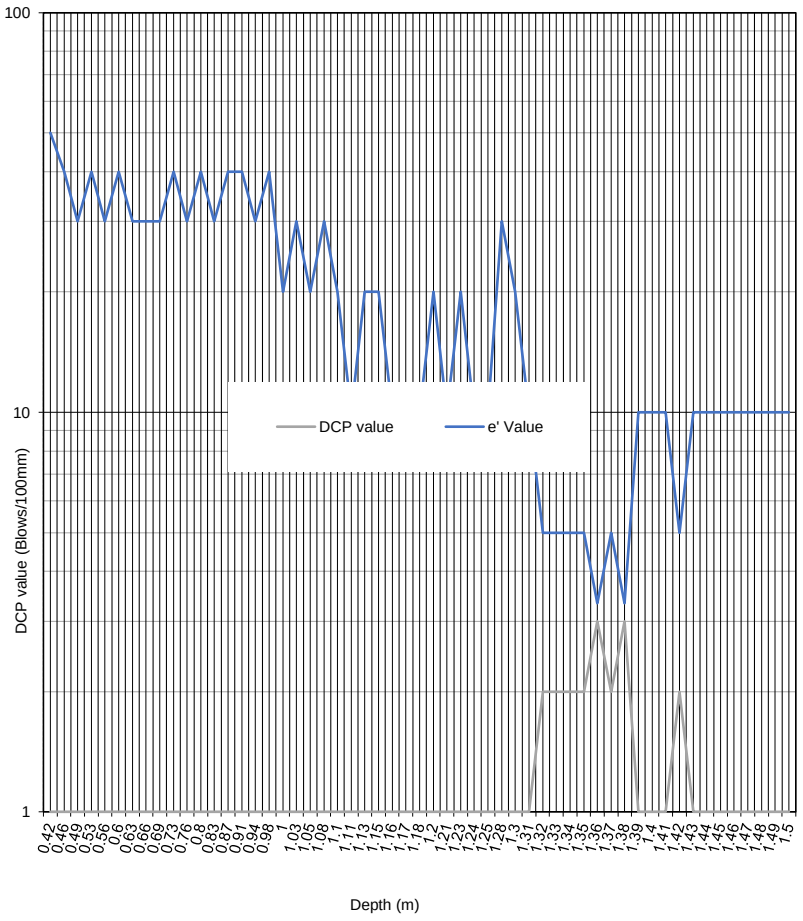
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System	**E:**	118.82401
	N:	9.90146

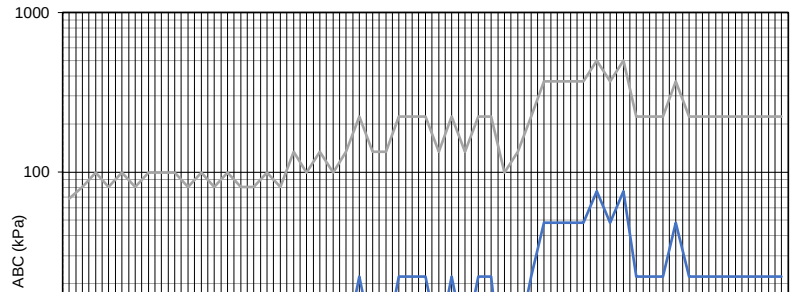
CHAINAGE N/A

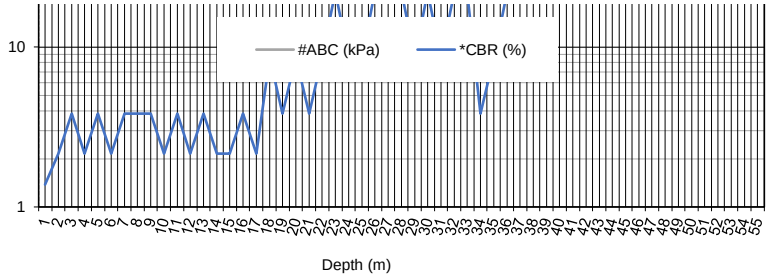
Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.42	1	50	68	1.4
0.46	1	40	81	2.2
0.49	1	30	100	3.8
0.53	1	40	81	2.2
0.56	1	30	100	3.8
0.6	1	40	81	2.2
0.63	1	30	100	3.8
0.66	1	30	100	3.8
0.69	1	30	100	3.8
0.73	1	40	81	2.2
0.76	1	30	100	3.8
0.8	1	40	81	2.2
0.83	1	30	100	3.8
0.87	1	40	81	2.2
0.91	1	40	81	2.2
0.94	1	30	100	3.8
0.98	1	40	81	2.2
1	1	20	134	8.6
1.03	1	30	100	3.8
1.05	1	20	134	8.6
1.08	1	30	100	3.8
1.1	1	20	134	8.6
1.11	1	10	223	22.2
1.13	1	20	134	8.6
1.15	1	20	134	8.6
1.16	1	10	223	22.2
1.17	1	10	223	22.2
1.18	1	10	223	22.2
1.2	1	20	134	8.6
1.21	1	10	223	22.2
1.23	1	20	134	8.6
1.24	1	10	223	22.2
1.25	1	10	223	22.2
1.28	1	30	100	3.8
1.3	1	20	134	8.6
1.31	1	10	223	22.2
1.32	2	5	372	48.1
1.33	2	5	372	48.1
1.34	2	5	372	48.1
1.35	2	5	372	48.1
1.36	3	3	501	75.8
1.37	2	5	372	48.1
1.38	3	3	501	75.8
1.39	1	10	223	22.2
1.4	1	10	223	22.2
1.41	1	10	223	22.2
1.42	2	5	372	48.1
1.43	1	10	223	22.2
1.44	1	10	223	22.2
1.45	1	10	223	22.2
1.46	1	10	223	22.2
1.47	1	10	223	22.2
1.48	1	10	223	22.2
1.49	1	10	223	22.2
1.5	1	10	223	22.2

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

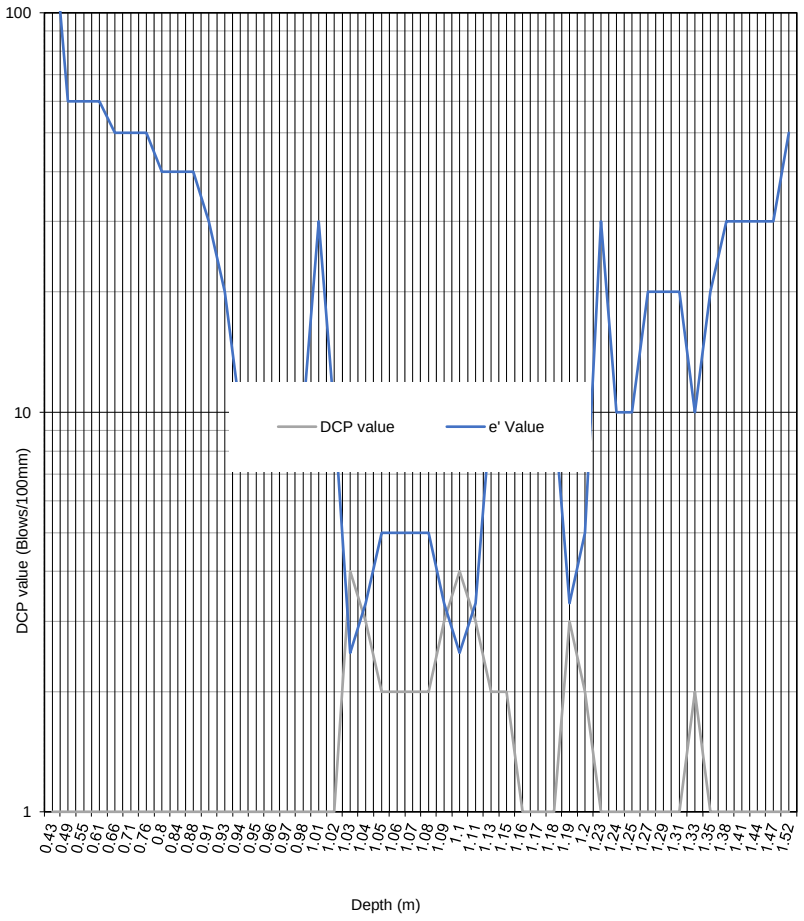
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System	**E:**	118.82394
	N:	9.90139

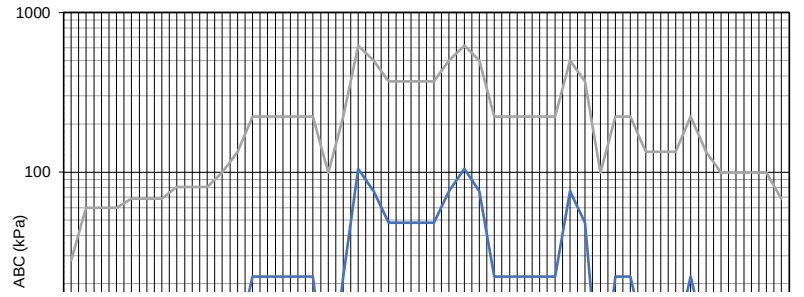
CHAINAGE N/A

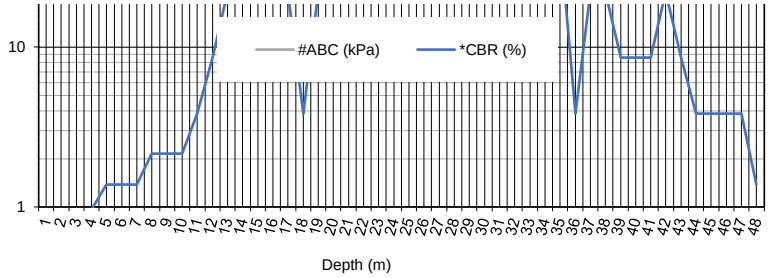
Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.43	1	170	28	0.1
0.49	1	60	60	1.0
0.55	1	60	60	1.0
0.61	1	60	60	1.0
0.66	1	50	68	1.4
0.71	1	50	68	1.4
0.76	1	50	68	1.4
0.8	1	40	81	2.2
0.84	1	40	81	2.2
0.88	1	40	81	2.2
0.91	1	30	100	3.8
0.93	1	20	134	8.6
0.94	1	10	223	22.2
0.95	1	10	223	22.2
0.96	1	10	223	22.2
0.97	1	10	223	22.2
0.98	1	10	223	22.2
1.01	1	30	100	3.8
1.02	1	10	223	22.2
1.03	4	3	619	104.6
1.04	3	3	501	75.8
1.05	2	5	372	48.1
1.06	2	5	372	48.1
1.07	2	5	372	48.1
1.08	2	5	372	48.1
1.09	3	3	501	75.8
1.1	4	3	619	104.6
1.11	3	3	501	75.8
1.13	2	10	223	22.2
1.15	2	10	223	22.2
1.16	1	10	223	22.2
1.17	1	10	223	22.2
1.18	1	10	223	22.2
1.19	3	3	501	75.8
1.2	2	5	372	48.1
1.23	1	30	100	3.8
1.24	1	10	223	22.2
1.25	1	10	223	22.2
1.27	1	20	134	8.6
1.29	1	20	134	8.6
1.31	1	20	134	8.6
1.33	2	10	223	22.2
1.35	1	20	134	8.6
1.38	1	30	100	3.8
1.41	1	30	100	3.8
1.44	1	30	100	3.8
1.47	1	30	100	3.8
1.52	1	50	68	1.4

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

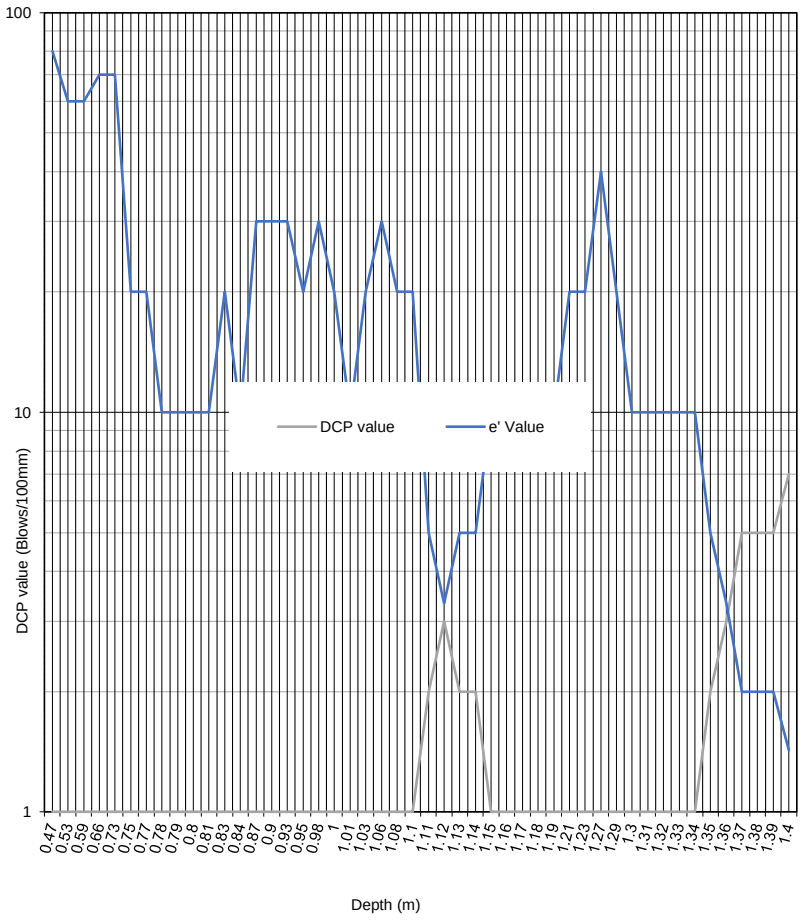
Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

Co-ordinates System	**E:**	118.82394
	N:	9.90139

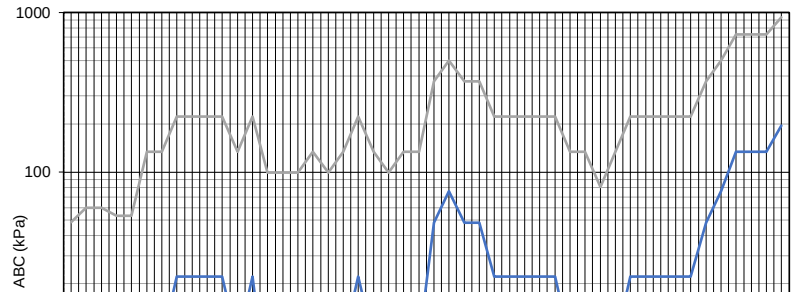
CHAINAGE N/A

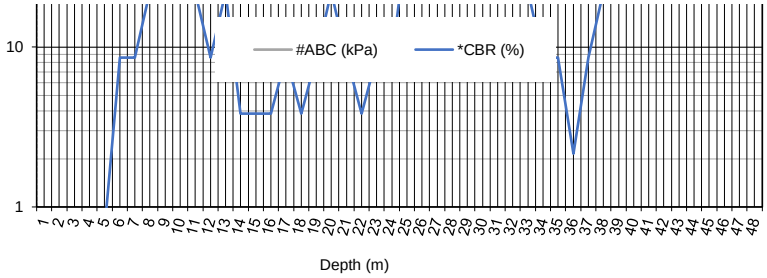
Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.47	1	80	48	0.5
0.53	1	60	60	1.0
0.59	1	60	60	1.0
0.66	1	70	53	0.7
0.73	1	70	53	0.7
0.75	1	20	134	8.6
0.77	1	20	134	8.6
0.78	1	10	223	22.2
0.79	1	10	223	22.2
0.8	1	10	223	22.2
0.81	1	10	223	22.2
0.83	1	20	134	8.6
0.84	1	10	223	22.2
0.87	1	30	100	3.8
0.9	1	30	100	3.8
0.93	1	30	100	3.8
0.95	1	20	134	8.6
0.98	1	30	100	3.8
1	1	20	134	8.6
1.01	1	10	223	22.2
1.03	1	20	134	8.6
1.06	1	30	100	3.8
1.08	1	20	134	8.6
1.1	1	20	134	8.6
1.11	2	5	372	48.1
1.12	3	3	501	75.8
1.13	2	5	372	48.1
1.14	2	5	372	48.1
1.15	1	10	223	22.2
1.16	1	10	223	22.2
1.17	1	10	223	22.2
1.18	1	10	223	22.2
1.19	1	10	223	22.2
1.21	1	20	134	8.6
1.23	1	20	134	8.6
1.27	1	40	81	2.2
1.29	1	20	134	8.6
1.3	1	10	223	22.2
1.31	1	10	223	22.2
1.32	1	10	223	22.2
1.33	1	10	223	22.2
1.34	1	10	223	22.2
1.35	2	5	372	48.1
1.36	3	3	501	75.8
1.37	5	2	729	134.3
1.38	5	2	729	134.3
1.39	5	2	729	134.3
1.4	7	1	934	195.8

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR





NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

Dynamic Cone Penetrometer

LOG SHEET

Test ID:

Chainage (m):

Project:	Geotechnical Investigation of Snake Island as the National Coastal and Matine Center for Research	**Sheet No.:**	1
Location:	PUERTO PRINCESA	**Test Date:**	03-Jul-20
Client:	Provincial Environment and Natural Resources Office - Palawan	**Project No.**	1911PENRO1

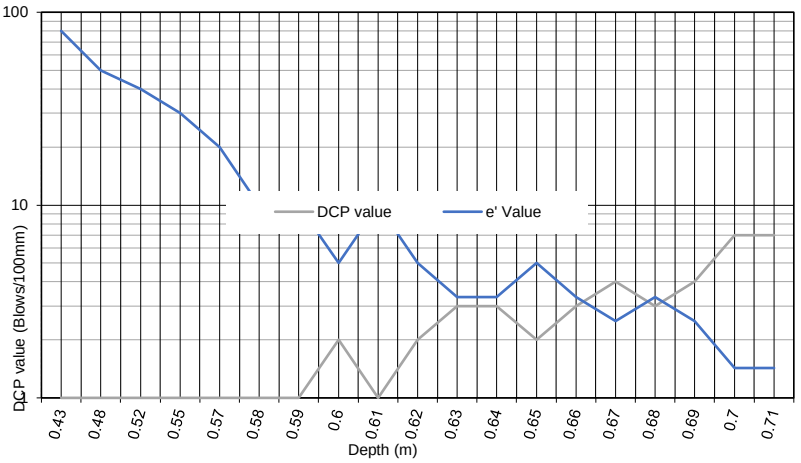
Co-ordinates System

E: 118.82412
N: 9.9014

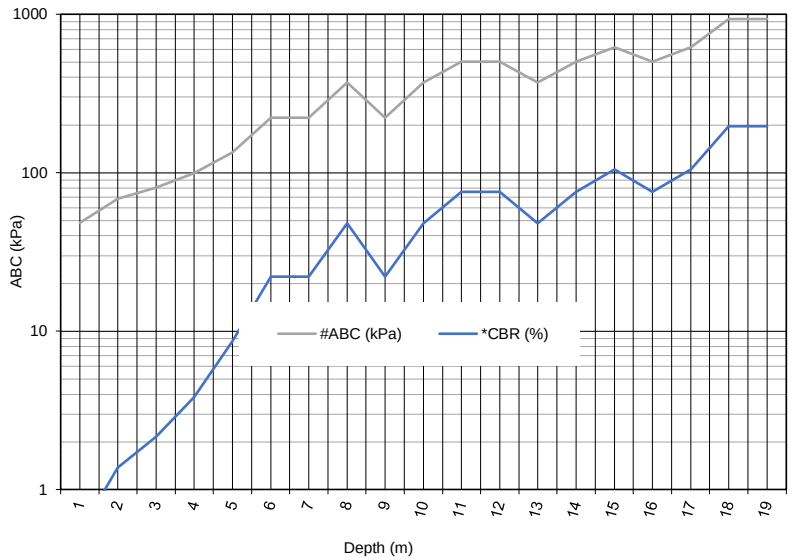
CHAINAGE N/A

Depth (m)	DCP value	e' Value	#ABC (kPa)	*CBR (%)
0.43	1	80	48	0.5
0.48	1	50	68	1.4
0.52	1	40	81	2.2
0.55	1	30	100	3.8
0.57	1	20	134	8.6
0.58	1	10	223	22.2
0.59	1	10	223	22.2
0.6	2	5	372	48.1
0.61	1	10	223	22.2
0.62	2	5	372	48.1
0.63	3	3	501	75.8
0.64	3	3	501	75.8
0.65	2	5	372	48.1
0.66	3	3	501	75.8
0.67	4	3	619	104.6
0.68	3	3	501	75.8
0.69	4	3	619	104.6
0.7	7	1	934	195.8
0.71	7	1	934	195.8

DCP Resistance vs Depth



Allowable Bearing Capacity & CBR



NT = Not Tested*

Note: # ABC values based on Stockwell (1976).
** CBR values based on Webster et al (1992).*

DCP 'e' Values & Allowable Bearing Capacity (ABC) & CBR vs Depth

DYNAMIC CONE PENETROMETER TEST

LOCATION 1

APPENDIX A: TEST RESULTS

SUMMARY OF DYNAMIC CONE PENETROMETER TEST RESULTS

Project Name: GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH
Project Location: PUERTO PRINCESA
Client: PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES O **Project Reference #:** 1911PENRO1
Client's Address: BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN
Consultant: - **Contact Number:** -

STATION	COORDINATE		DCPT NUMBER	LAYER NO.	THICKNESS (mm)	DCP (mm)	CBR (%)
	NORTHING	EASTING					
Testing Location: *SNAKE ISLAND - 1ST LOCATION* ***Date of Testing:*** *7/3/20*							
	9.90317 N	18.82524 E	DCPT-1	1	360	72.00	1.83
				2	340	48.57	3.03
	9.90320 N	118.82531 E	DCPT-2	1	490	163.33	0.65
				2	700	77.78	1.66
	9.90316 N	118.82549 E	DCPT-3	1	480	68.57	1.95
				2	360	36	4.43
	9.90323 N	118.82552 E	DCPT-4	1	350	116.67	0.99
				2	210	52.5	2.74
				3	610	61	2.27
	9.90329 N	118.82556 E	DCPT-5	1	550	110	1.07
				2	570	47.5	3.12
	9.90331 N	118.82568 E	DCPT-6	1	590	118	0.98
				2	460	51.11	2.84

Encoded by: ELLAINE RAMIREZ
Office Engineer

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

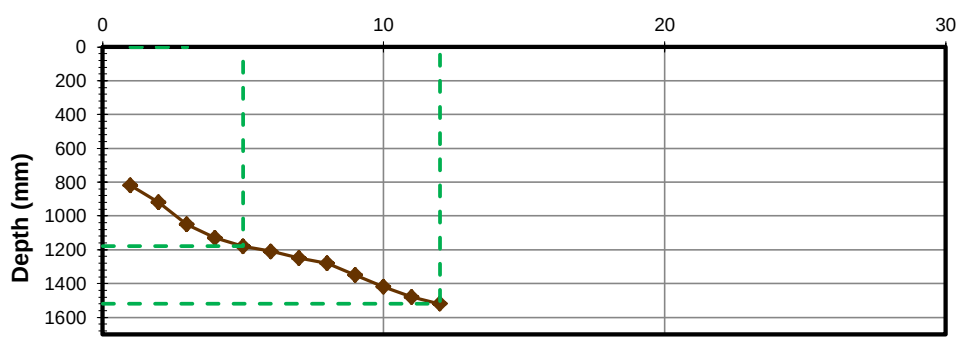
1911PENRO1_RDCP_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-1
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1520
Distance from Centerline (mm):	-	**Coordinates:**	9.90317 N ; 118.82524 E
Initial Reading (mm):	680	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	820									
1	2	920									
1	3	1050									
1	4	1130									
1	5	1180									
1	6	1210									
1	7	1250									
1	8	1280									
1	9	1350									
1	10	1420									
1	11	1480									
1	12	1520									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	820	1180	360	72.00	1.83	-	-	-	-	-	-
2	1180	1520	340	48.57	3.03	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

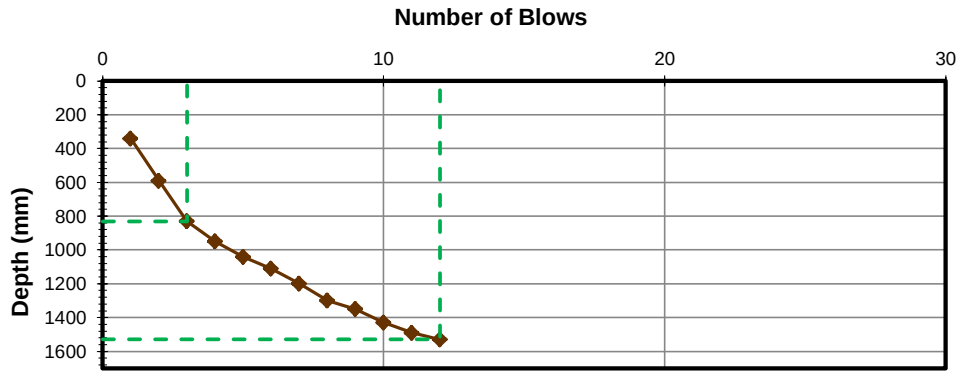
1911PENRO1_RDCP_DCPT-1_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-2
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1530
Distance from Centerline (mm):	-	**Coordinates:**	9.90320 N ; 118.82531 E
Initial Reading (mm):	250	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	340									
1	2	590									
1	3	830									
1	4	950									
1	5	1040									
1	6	1110									
1	7	1200									
1	8	1300									
1	9	1350									
1	10	1430									
1	11	1490									
1	12	1530									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	340	830	490	163.33	0.65	-	-	-	-	-	-
2	830	1530	700	77.78	1.66	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

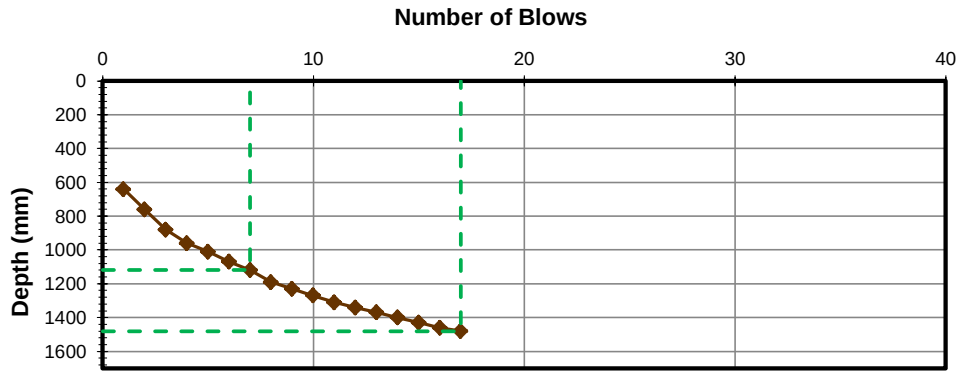
1911PENRO1_RDCP_DCPT-2_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-3
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1480
Distance from Centerline (mm):	-	**Coordinates:**	9.90316 N; 118.82549 E
Initial Reading (mm):	390	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	640	1	16	1460						
1	2	760	1	17	1480						
1	3	880									
1	4	960									
1	5	1010									
1	6	1070									
1	7	1120									
1	8	1190									
1	9	1230									
1	10	1270									
1	11	1310									
1	12	1340									
1	13	1370									
1	14	1400									
1	15	1430									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	640	1120	480	68.57	1.95	-	-	-	-	-	-
2	1120	1480	360	36.00	4.43	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

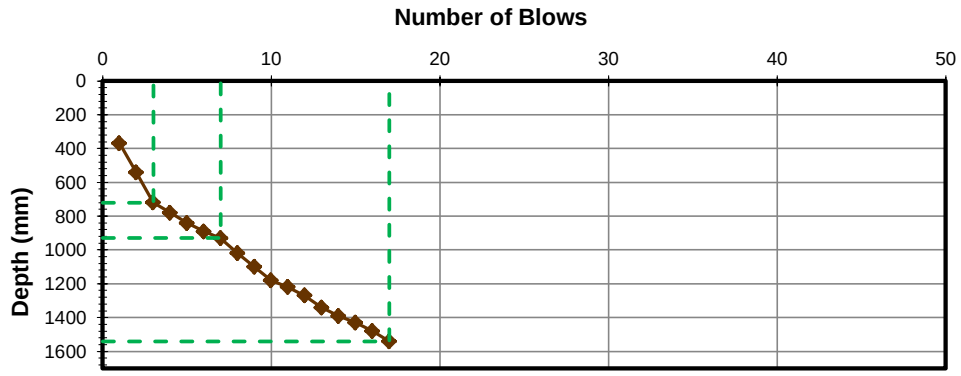
1911PENRO1_RDCP_DCPT-3_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-4
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1540
Distance from Centerline (mm):	-	**Coordinates:**	9.90323 N ; 118.82552 E
Initial Reading (mm):	250	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	370	1	16	1480						
1	2	540	1	17	1540						
1	3	720									
1	4	780									
1	5	840									
1	6	890									
1	7	930									
1	8	1020									
1	9	1100									
1	10	1180									
1	11	1220									
1	12	1270									
1	13	1340									
1	14	1390									
1	15	1430									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	370	720	350	116.67	0.99	3	930	1540	610	61.00	2.27
2	720	930	210	52.50	2.74	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

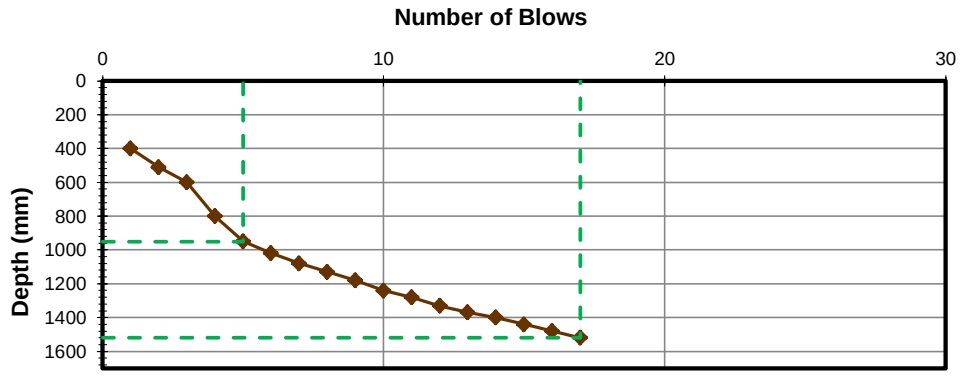
1911PENRO1_RDCP_DCPT-4_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-5
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1520
Distance from Centerline (mm):	-	**Coordinates:**	9.90329 N ; 118.82556 E
Initial Reading (mm):	280	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	400	1	16	1480						
1	2	510	1	17	1520						
1	3	600									
1	4	800									
1	5	950									
1	6	1020									
1	7	1080									
1	8	1130									
1	9	1180									
1	10	1240									
1	11	1280									
1	12	1330									
1	13	1370									
1	14	1400									
1	15	1440									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	400	950	550	110.00	1.07	-	-	-	-	-	-
2	950	1520	570	47.50	3.12	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

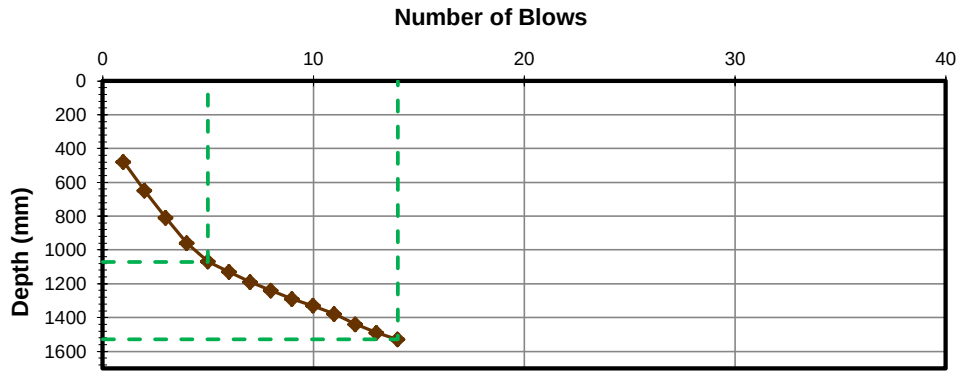
1911PENRO1_RDCP_DCPT-5_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-6
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1530
Distance from Centerline (mm):	-	**Coordinates:**	9.90331 N ; 118.82568 E
Initial Reading (mm):	350	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	480									
1	2	650									
1	3	810									
1	4	960									
1	5	1070									
1	6	1130									
1	7	1190									
1	8	1240									
1	9	1290									
1	10	1330									
1	11	1380									
1	12	1440									
1	13	1490									
1	14	1530									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	480	1070	590	118.00	0.98	-	-	-	-	-	-
2	1070	1530	460	51.11	2.84	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RDCP_DCPT-6_0

APPENDIX B: PHOTOGRAPHS

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFICE	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-1

SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90317 N ; 118.82524 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 1

DCPT-2

SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90320 N ; 118.82531 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 2

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFICE	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-3

SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90316 N; 118.82549 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 3

DCPT-4

SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90323 N ; 118.82552 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 4

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED
TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFICE	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-5

SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90329 N ; 118.82556 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 5

DCPT-6

SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90331 N ; 118.82568 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 6

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

LOCATION 2

APPENDIX A: TEST RESULTS

SUMMARY OF DYNAMIC CONE PENETROMETER TEST RESULTS

Project Name: GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH
Project Location: PUERTO PRINCESA
Client: PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES O **Project Reference #:** 1911PENRO1
Client's Address: BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN
Consultant: - **Contact Number:** -

STATION	COORDINATE		DCPT NUMBER	LAYER NO.	THICKNESS (mm)	DCP (mm)	CBR (%)
	NORTHING	EASTING					
Testing Location: *SNAKE ISLAND - 2ND LOCATION* ***Date of Testing:*** *7/3/20*							
	9.90160 N	118.82382 E	DCPT-1	1	110	12.22	17.54
				2	50	3.57	83.99
	9.90152 N	118.82384 E	DCPT-2	1	120	11.4	11.40
				2	60	22.65	22.65
				3	70	2.41	>100
	9.90146 N	118.82388 E	DCPT-3	1	130	21.67	8.46
				2	80	7.27	33.97
				3	570	8.26	28.88
				4	270	30	5.59
	9.90159 N	118.82398 E	DCPT-4	1	140	23.33	7.70
				2	90	3.1	>100
	9.90155 N	118.82407 E	DCPT-5	1	700	36.84	4.31
				2	190	6.55	38.80
	9.90146 N	118.82401 E	DCPT-6	1	610	32.11	5.13
				2	270	16.88	11.63
				3	200	6.67	37.95
	9.90139 N	118.82394 E	DCPT-7	1	500	41.67	3.68
				2	260	6.19	41.70
				3	330	20.63	9.01
	9.90149 N	118.82410 E	DCPT-8	1	260	52	2.78
				2	380	18.10	10.64
				3	160	10.67	20.86
				4	130	3.94	74.13

Encoded by: ELLAINE RAMIREZ
Office Engineer

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

SUMMARY OF DYNAMIC CONE PENETROMETER TEST RESULTS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES O	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

STATION	COORDINATE		DCPT NUMBER	LAYER NO.	THICKNESS (mm)	DCP (mm)	CBR (%)
	NORTHING	EASTING					
Testing Location: *SNAKE ISLAND - 2ND LOCATION* ***Date of Testing:*** *7/3/20*							
	9.90140 N	118.82412 E	DCPT-9	1	120	30.00	5.59
				2	160	3.64	82.09

Encoded by: ELLAINE RAMIREZ
Office Engineer

DPWH-BRS ACCREDITED TESTING LABORATORY

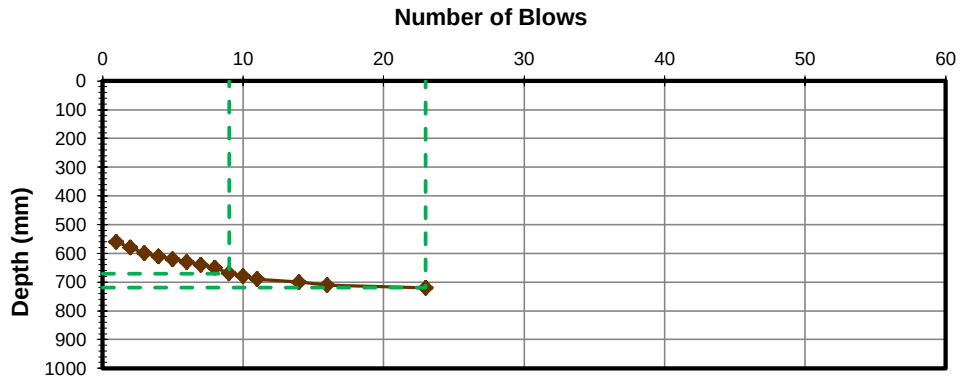
Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-1
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	720
Distance from Centerline (mm):	-	**Coordinates:**	9.90160 N ; 118.82382 E
Initial Reading (mm):	530	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	560									
1	2	580									
1	3	600									
1	4	610									
1	5	620									
1	6	630									
1	7	640									
1	8	650									
1	9	670									
1	10	680									
1	11	690									
3	14	700									
2	16	710									
7	23	720									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	560	670	110	12.22	17.54	-	-	-	-	-	-
2	670	720	50	3.57	83.99	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

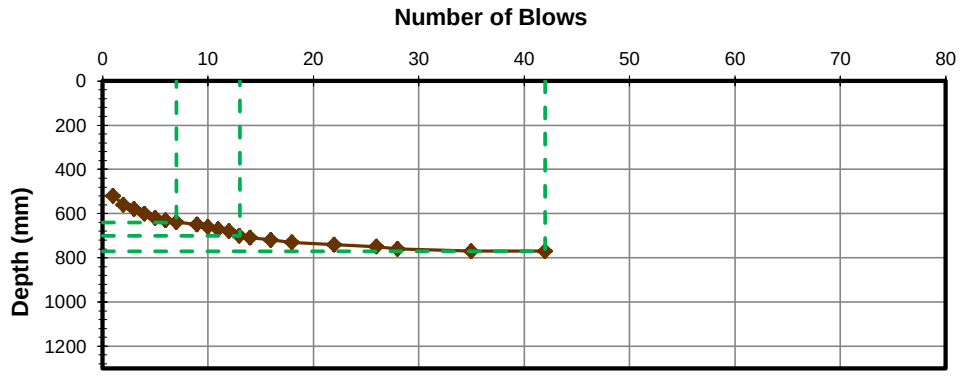
1911PENRO1_RDCP_DCPT-1_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-2
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	770
Distance from Centerline (mm):	-	**Coordinates:**	9.90152 N ; 118.82384 E
Initial Reading (mm):	410	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	520	4	22	740						
1	2	560	4	26	750						
1	3	580	2	28	760						
1	4	600	7	35	770						
1	5	620	7	42	770						
1	6	630									
1	7	640									
2	9	650									
1	10	660									
1	11	670									
1	12	680									
1	13	700									
1	14	710									
2	16	720									
2	18	730									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	520	640	120	17.14	11.40	3	700	770	70	2.41	>100
2	640	700	60	10.00	22.65	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

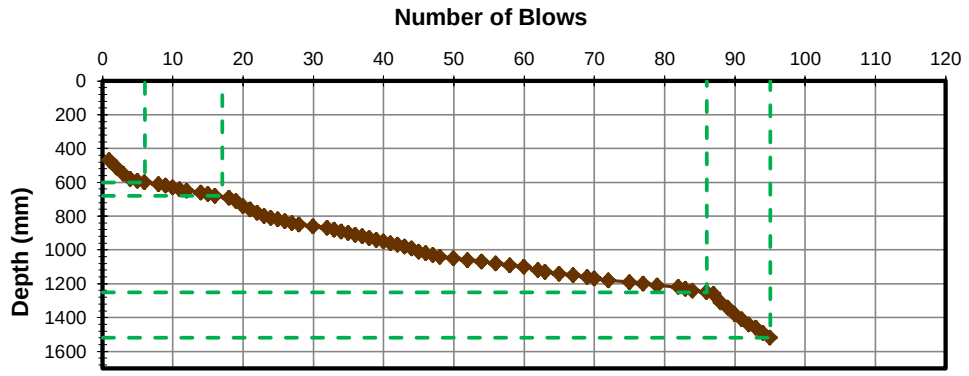
1911PENRO1_RDCP_DCPT-2_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-3
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1520
Distance from Centerline (mm):	-	**Coordinates:**	9.90146 N ; 118.82388 E
Initial Reading (mm):	420	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	470	1	19	710	1	36	910	2	54	1070
1	2	510	1	20	740	1	37	920	2	56	1080
1	3	550	1	21	760	1	38	930	2	58	1090
1	4	580	1	22	780	1	39	940	2	60	1100
1	5	590	1	23	800	1	40	950	2	62	1120
1	6	600	1	24	810	1	41	960	1	63	1130
2	8	610	1	25	820	1	42	970	2	65	1140
1	9	620	1	26	830	1	43	980	2	67	1150
1	10	630	1	27	840	1	44	990	2	69	1160
1	11	640	1	28	850	1	45	1010	1	70	1170
1	12	650	2	30	860	1	46	1020	2	72	1180
2	14	660	2	32	870	1	47	1030	3	75	1190
1	15	670	1	33	880	1	48	1040	2	77	1200
1	16	680	1	34	890	2	50	1050	2	79	1210
2	18	690	1	35	900	2	52	1060	3	82	1220
									1	83	1230
									1	84	1240
									2	86	1250
									1	87	1260
									1	88	1310
									1	89	1340
									1	90	1380
									1	91	1410
									1	92	1440
									1	93	1460
									1	94	1490
									1	95	1520



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	470	600	130	21.67	8.46	3	680	1250	570	8.26	28.88
2	600	680	80	7.27	33.97	4	1250	1520	270	30.00	5.59

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

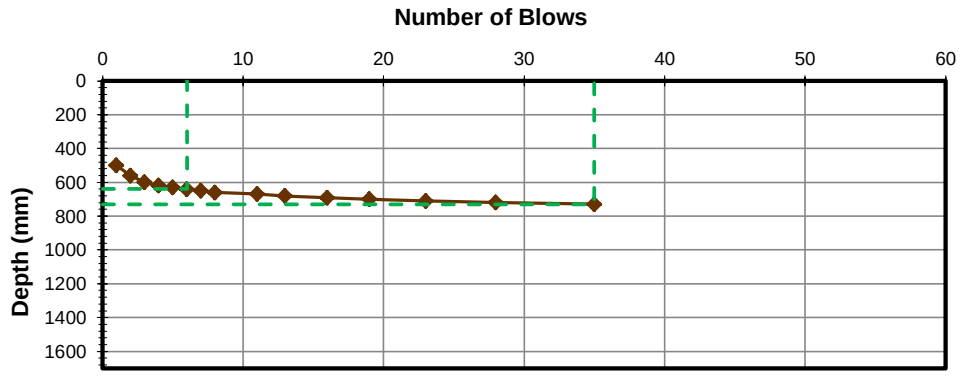
1911PENRO1_RDCP_DCPT-3_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-4
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	730
Distance from Centerline (mm):	-	**Coordinates:**	9.90159 N ; 118.82398 E
Initial Reading (mm):	440	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	500									
1	2	560									
1	3	600									
1	4	620									
1	5	630									
1	6	640									
1	7	650									
1	8	660									
3	11	670									
2	13	680									
3	16	690									
3	19	700									
4	23	710									
5	28	720									
7	35	730									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	500	640	140	23.33	7.70	-	-	-	-	-	-
2	640	730	90	3.10	>100	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

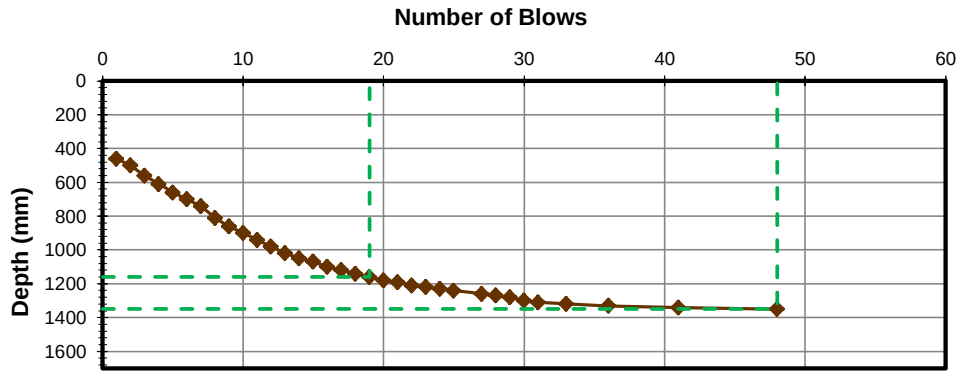
1911PENRO1_RDCP_DCPT-4_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-5
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1350
Distance from Centerline (mm):	-	**Coordinates:**	9.90155 N ; 118.82407 E
Initial Reading (mm):	400	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	460	1	16	1100	2	33	1320			
1	2	500	1	17	1120	3	36	1330			
1	3	560	1	18	1140	5	41	1340			
1	4	610	1	19	1160	7	48	1350			
1	5	660	1	20	1180						
1	6	700	1	21	1190						
1	7	740	1	22	1210						
1	8	810	1	23	1220						
1	9	860	1	24	1230						
1	10	900	1	25	1240						
1	11	940	2	27	1260						
1	12	980	1	28	1270						
1	13	1020	1	29	1280						
1	14	1050	1	30	1300						
1	15	1070	1	31	1310						



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	460	1160	700	36.84	4.31	-	-	-	-	-	-
2	1160	1350	190	6.55	38.80	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

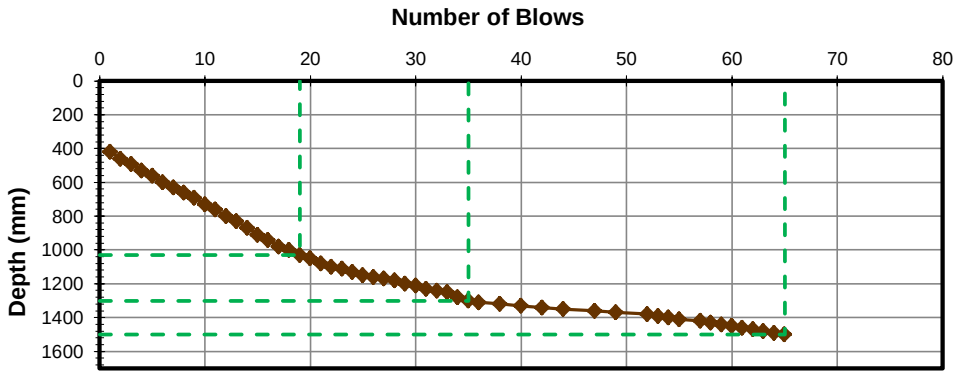
1911PENRO1_RDCP_DCPT-5_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-6
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1500
Distance from Centerline (mm):	-	**Coordinates:**	9.90146 N ; 118.82401 E
Initial Reading (mm):	370	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	420	1	16	940	1	31	1230	1	55	1410
1	2	460	1	17	980	1	32	1240	2	57	1420
1	3	490	1	18	1000	1	33	1250	1	58	1430
1	4	530	1	19	1030	1	34	1280	1	59	1440
1	5	560	1	20	1050	1	35	1300	1	60	1450
1	6	600	1	21	1080	1	36	1310	1	61	1460
1	7	630	1	22	1100	2	38	1320	1	62	1470
1	8	660	1	23	1110	2	40	1330	1	63	1480
1	9	690	1	24	1130	2	42	1340	1	64	1490
1	10	730	1	25	1150	2	44	1350	1	65	1500
1	11	760	1	26	1160	3	47	1360			
1	12	800	1	27	1170	2	49	1370			
1	13	830	1	28	1180	3	52	1380			
1	14	870	1	29	1200	1	53	1390			
1	15	910	1	30	1210	1	54	1400			



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	420	1030	610	32.11	5.13	3	1300	1500	200	6.67	37.95
2	1030	1300	270	16.88	11.63	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

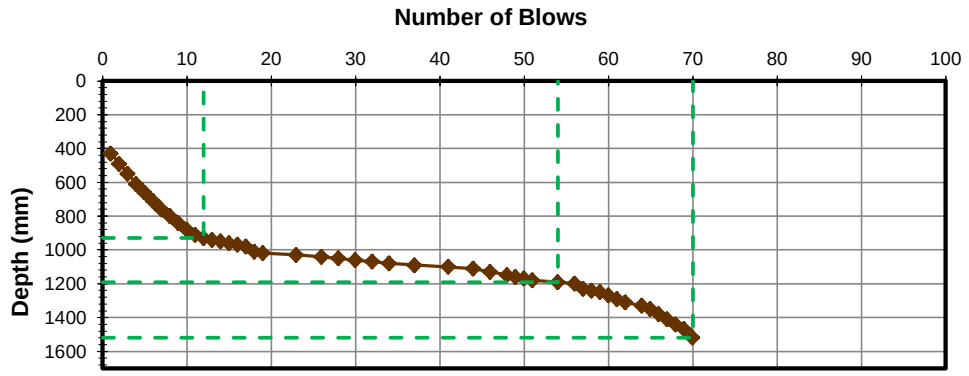
1911PENRO1_RDCP_DCPT-6_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-7
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1520
Distance from Centerline (mm):	-	**Coordinates:**	9.90139 N ; 118.82394 E
Initial Reading (mm):	260	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	430	1	16	970	1	49	1160	1	68	1440
1	2	490	1	17	980	1	50	1170	1	69	1470
1	3	550	1	18	1010	1	51	1180	1	70	1520
1	4	610	1	19	1020	3	54	1190			
1	5	660	4	23	1030	2	56	1200			
1	6	710	3	26	1040	1	57	1230			
1	7	760	2	28	1050	1	58	1240			
1	8	800	2	30	1060	1	59	1250			
1	9	840	2	32	1070	1	60	1270			
1	10	880	2	34	1080	1	61	1290			
1	11	910	3	37	1090	1	62	1310			
1	12	930	4	41	1100	2	64	1330			
1	13	940	3	44	1110	1	65	1350			
1	14	950	2	46	1130	1	66	1380			
1	15	960	2	48	1150	1	67	1410			



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	430	930	500	41.67	3.68	3	1190	1520	330	20.63	9.01
2	930	1190	260	6.19	41.70	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

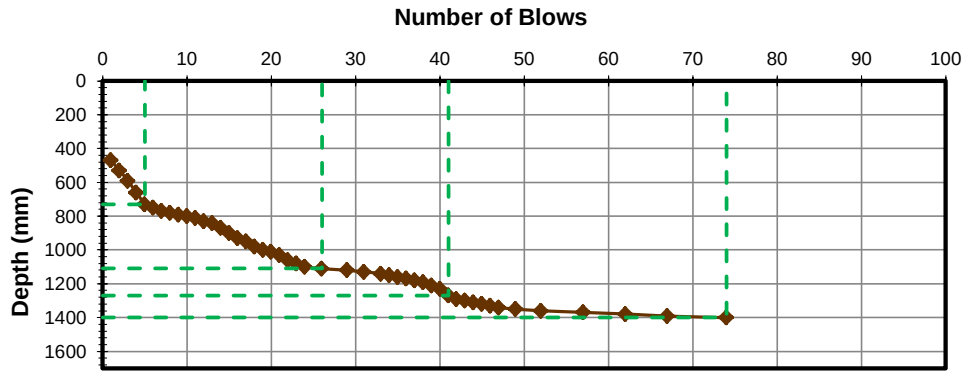
1911PENRO1_RDCP_DCPT-7_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-8
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	1400
Distance from Centerline (mm):	-	**Coordinates:**	9.90149 N ; 118.82410 E
Initial Reading (mm):	390	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	470	1	16	930	1	36	1170	5	62	1380
1	2	530	1	17	950	1	37	1180	5	67	1390
1	3	590	1	18	980	1	38	1190	7	74	1400
1	4	660	1	19	1000	1	39	1210			
1	5	730	1	20	1010	1	40	1230			
1	6	750	1	21	1030	1	41	1270			
1	7	770	1	22	1060	1	42	1290			
1	8	780	1	23	1080	1	43	1300			
1	9	790	1	24	1100	1	44	1310			
1	10	800	2	26	1110	1	45	1320			
1	11	810	3	29	1120	1	46	1330			
1	12	830	2	31	1130	1	47	1340			
1	13	840	2	33	1140	2	49	1350			
1	14	870	1	34	1150	3	52	1360			
1	15	900	1	35	1160	5	57	1370			



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	470	730	260	52.00	2.78	3	1110	1270	160	10.67	20.86
2	730	1110	380	18.10	10.64	4	1270	1400	130	3.94	74.13

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

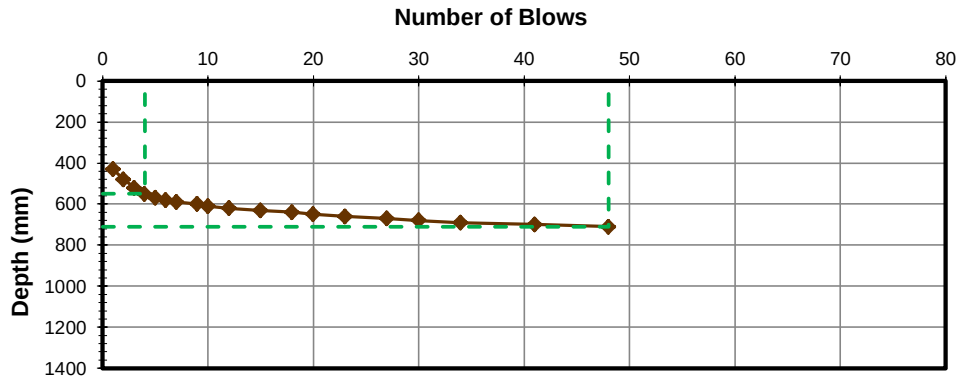
1911PENRO1_RDCP_DCPT-8_0

DYNAMIC CONE PENETROMETER TEST (DCPT) REPORT

STP 240-20

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOU	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Testing Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Testing:	07/03/20	**DCPT Number:**	DCPT-9
Site Topography:	FLAT		
Concrete Coring Performed?	☐ Yes ☑ No	**Hole Depth (mm):**	710
Distance from Centerline (mm):	-	**Coordinates:**	9.90140 N ; 118.82412 E
Initial Reading (mm):	350	**Station:**	-

No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)	No. of Blows	Blows (Cum.)	Penetration (mm)
1	1	430	3	30	680						
1	2	480	4	34	690						
1	3	520	7	41	700						
1	4	550	7	48	710						
1	5	570									
1	6	580									
1	7	590									
2	9	600									
1	10	610									
2	12	620									
3	15	630									
3	18	640									
2	20	650									
3	23	660									
4	27	670									



PLOT OF DCP TEST RESULTS

SUMMARY OF TEST RESULTS

Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)	Layer No.	Depth From	Depth To	Thickness (mm)	DCP (mm/blow)	CBR (%)
1	430	550	120	30.00	5.59	-	-	-	-	-	-
2	550	710	160	3.64	82.09	-	-	-	-	-	-

Performed by: RODELITO PODADOR
Field Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RDCP_DCPT-9_0

APPENDIX B: PHOTOGRAPHS

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFIC	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-1

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90160 N ; 118.82382 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 1

DCPT-2

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90152 N ; 118.82384 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 2

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFIC	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-3

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION

DATE OF SAMPLING: 7/3/2020

STATION: -

COORDINATES: 9.90146 N ; 118.82388 E

SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 3

DCPT-4

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION

DATE OF SAMPLING: 7/3/2020

STATION: -

COORDINATES: 9.90159 N ; 118.82398 E

SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 4

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFIC	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-5

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90155 N ; 118.82407 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 5

DCPT-6

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/2020
STATION: -
COORDINATES: 9.90146 N ; 118.82401 E
SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 6

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFIC	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-7

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION

DATE OF SAMPLING: 7/3/2020

STATION: -

COORDINATES: 9.90139 N ; 118.82394 E

SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 7

DCPT-8

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION

DATE OF SAMPLING: 7/3/2020

STATION: -

COORDINATES: 9.90149 N ; 118.82410 E

SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 8

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NAT'L COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFIC	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

DCPT-9

SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION

DATE OF SAMPLING: 7/3/2020

STATION: -

COORDINATES: 9.90140 N ; 118.82412 E

SITE TOPOGRAPHY: FLAT

Figure .1 Panoramic View

Figure .2 DCPT 9

Photographed by: RODELITO PODADOR
Field Supervisor

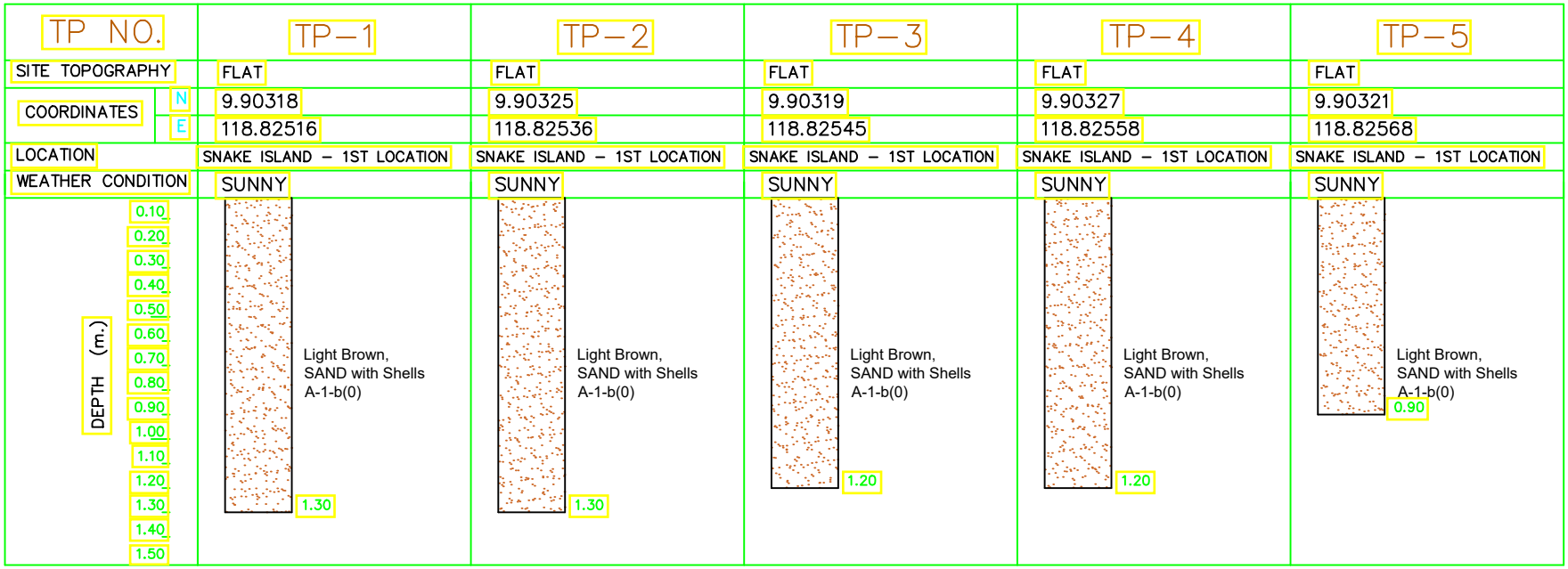
DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

TESTPITS

LOCATION 1

APPENDIX A: SOIL PROFILE



TEST PIT SOIL PROFILE
NOT TO SCALE

LEGEND

- INFERRED WATER LEVEL
- SPT – N VALUE > 50
- PEAT
- CLAY
- SILT
- SAND
- GRAVEL
- ROCK/HARD STRATA

PREPARED BY:	CLIENT / CONSULTANT:	PROJECT TITLE:	SKETCHED BY: / CHECKED BY:	DRAWING NO:
VICTOR S. ADRIANO CIVIL ENGINEERING CONSULTANCY SERVICES #20-B Karilagan St. Dona Damiana Village, Rosario, Pasig City	**PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICE** BRGY. STA. MONICA, PUERTO PRINCESA, PALAWAN	GEOTECHNICAL INVESTIGATION WORKS FOR SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH PUERTO PRINCESA, PALAWAN **SHEET TITLE:** SOIL PROFILE	RODELITO PODADOR, Field Supervisor ELLAINE RAMIREZ, Office Engineer **APPROVED BY:** REMEDIOS SOLDAO, Head of Engineering Department	SP-01 SP-01 **REFERENCE NO.:** 1911PENR01_RSPBH_TP1-5_0

APPENDIX B: SUMMARY OF TEST RESULTS AND PARTICLE SIZE ANALYSIS & ATTERBERG LIMITS TEST REPORTS

SUMMARY OF TEST PIT TEST RESULTS

Project Name: GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH
Project Location: PUERTO PRINCESA
Client's Address: BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN

Project Reference #: 1911PENRO1
Client: PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFICE
Consultant: -
Contact Number: -

STATION	TP NO.	SAMPLE ID	SAMPLE DEPTH (m)	AASHTO CLASS	ATTERBERG LIMITS		MOISTURE CONTENT (%)	PARTICLE SIZE GRADING (CUMULATIVE % PASSING)										HYDROMETER PERFORMED?	G_s	*MDR		*CBR	
					LL (%)	PI (%)		2 1/2" (50.00 mm)	1 1/2" (37.50 mm)	1" (25.00 mm)	3/4" (19.00 mm)	3/8" (9.50 mm)	#4 (4.75 mm)	#10 (2.00 mm)	#40 (0.425 mm)	#100 (0.150 mm)	#200 (0.075 mm)			MDD (g/cc)	OMC (%)	95% MDD	100% MDD
Sampling Procedure: *AASHTO R13-03 (2007),* ***Sampling Location:*** *SNAKE ISLAND - 1ST LOCATION* ***Date of Sampling:*** *7/2/20*																							
	TP-1	SS1	0.00-1.30	A-1-b(0)	NL	NP	10.2						100	96	22	1	0	NO	-	1.86	8.40	3.22	4.25
		NOTE: 1.30m WATER ENCOUNTERED																					
	TP-2	SS1	0.00-1.30	A-1-b(0)	NL	NP	9.9						100	95	31	1	1	NO	-	1.81	9.00	2.85	3.75
		NOTE: 1.30m WATER ENCOUNTERED																					
	TP-3	SS1	0.00-1.20	A-1-b(0)	NL	NP	12.9						100	96	31	1	1	NO	-	1.94	9.50	4.63	6.14
		NOTE: 1.20m WATER ENCOUNTERED																					
	TP-4	SS1	0.00-1.20	A-1-b(0)	NL	NP	10.9						100	96	25	1	1	NO	-	1.91	9.00	3.01	3.95
		NOTE: 1.20m WATER ENCOUNTERED																					
	TP-5	SS1	0.00-0.90	A-1-b(0)	NL	NP	13.6						100	93	20	2	2	NO	-	1.97	9.60	3.40	4.19
		NOTE: 0.90m WATER ENCOUNTERED																					

*Test/s are not ISO/IEC 17025:2008 Accredited

Encoded by: ELLAINE RAMIREZ
Office Engineer

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

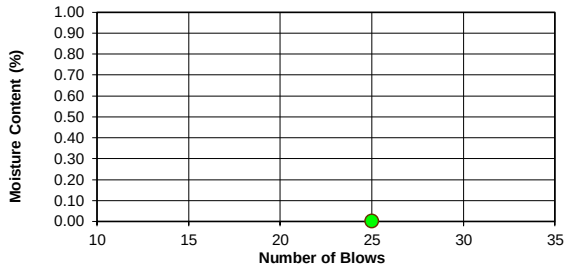
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/2/20	**TP/AH/BS Number:**	TP-1
Coordinates:	9.90318 N ; 118.82516 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.30
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

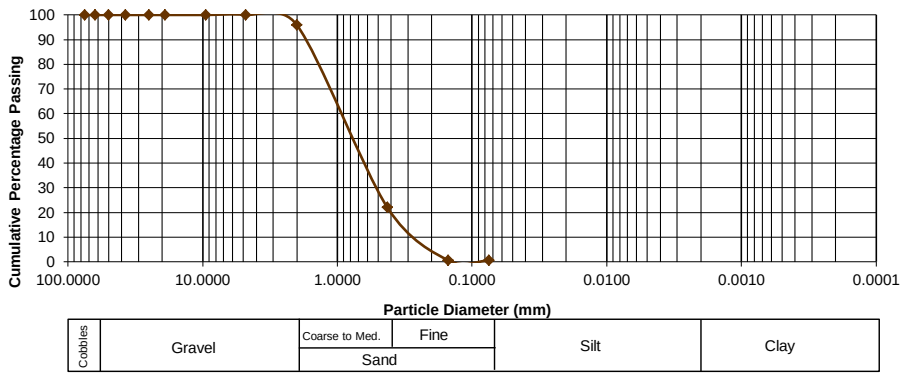


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	0.00	0.00	100.00	-	-	-	-
#10	2.000	6.09	4.07	95.93	±0.08	1.96		
#40	0.425	116.71	78.07	21.93	±0.76	1.96		
#100	0.150	148.65	99.44	0.56	±1.07	1.96		
#200	0.075	148.80	99.54	0.46	±1.31	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	184.54
Dry Soil + Can (g):	169.34
Mass of Can (g):	19.85
Moisture Loss (g):	15.20
Original Dry Mass (g):	149.49
Moisture Content (%):	**10.2**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**10.2**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-1_0

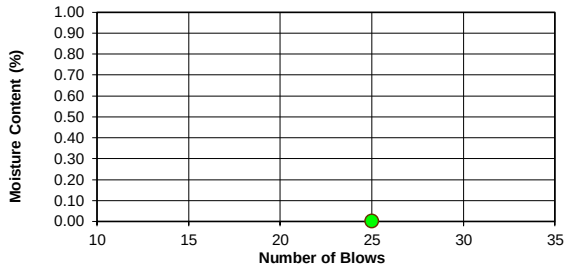
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/2/20	**TP/AH/BS Number:**	TP-2
Coordinates:	9.90325 N ; 118.82536 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.30
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

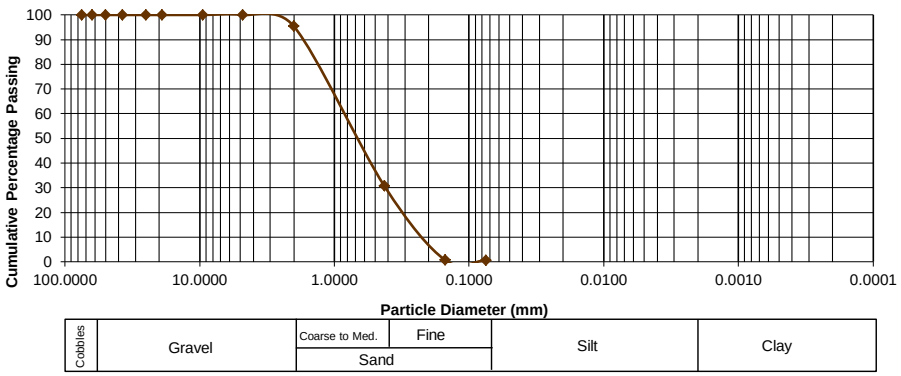


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	0.00	0.00	100.00	-	-		
#10	2.000	9.70	4.61	95.39	±0.05	1.96		
#40	0.425	145.81	69.36	30.64	±0.54	1.96		
#100	0.150	208.94	99.39	0.61	±0.76	1.96		
#200	0.075	209.10	99.47	0.53	±0.93	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	253.08
Dry Soil + Can (g):	232.23
Mass of Can (g):	22.01
Moisture Loss (g):	20.85
Original Dry Mass (g):	210.22
Moisture Content (%):	**9.9**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**9.9**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-2_0

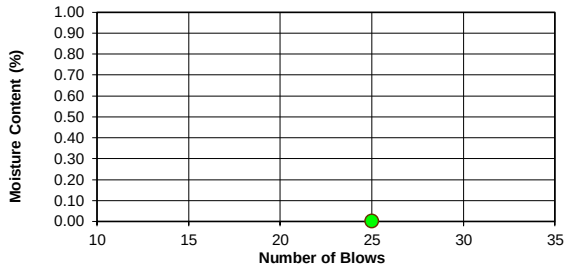
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/2/20	**TP/AH/BS Number:**	TP-3
Coordinates:	9.90319 N ; 118.82545 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.20
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

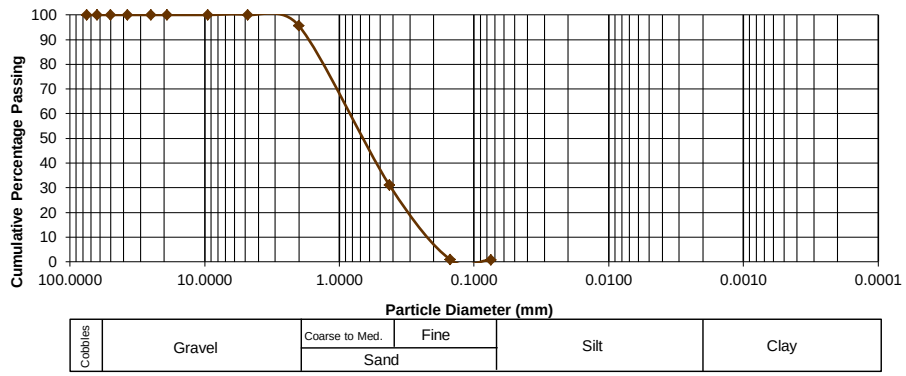


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	0.00	0.00	100.00	-	-		
#10	2.000	5.38	4.38	95.62	±0.09	1.96		
#40	0.425	84.74	68.97	31.03	±0.93	1.96		
#100	0.150	121.78	99.12	0.88	±1.31	1.96		
#200	0.075	121.97	99.28	0.72	±1.6	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	157.70
Dry Soil + Can (g):	141.82
Mass of Can (g):	18.96
Moisture Loss (g):	15.88
Original Dry Mass (g):	122.86
Moisture Content (%):	**12.9**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**12.9**
U_{95}	±0.02
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-3_0
Page 1 of 1

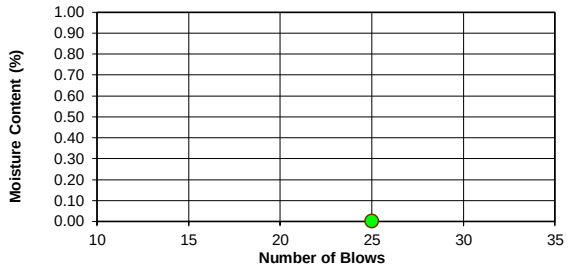
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/2/20	**TP/AH/BS Number:**	TP-4
Coordinates:	9.90327 N ; 118.82558 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.20
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

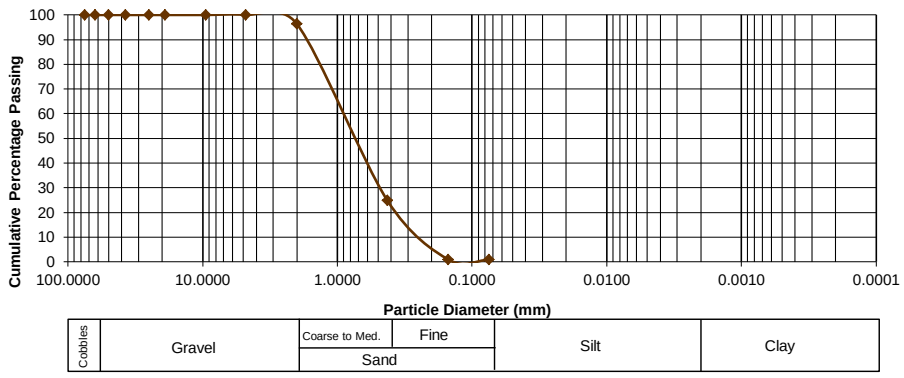


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	0.00	0.00	100.00	-	-	-	-
#10	2.000	5.63	3.65	96.35	±0.07	1.96		
#40	0.425	116.16	75.25	24.75	±0.74	1.96		
#100	0.150	152.99	99.11	0.89	±1.04	1.96		
#200	0.075	153.17	99.22	0.78	±1.27	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	190.73
Dry Soil + Can (g):	173.98
Mass of Can (g):	19.61
Moisture Loss (g):	16.75
Original Dry Mass (g):	154.37
Moisture Content (%):	**10.9**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**10.9**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-4_0

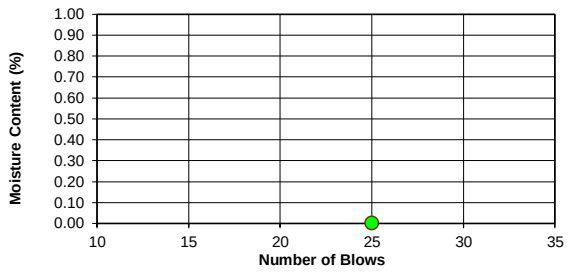
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/2/20	**TP/AH/BS Number:**	TP-5
Coordinates:	9.90321 N ; 118.82568 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-0.90
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

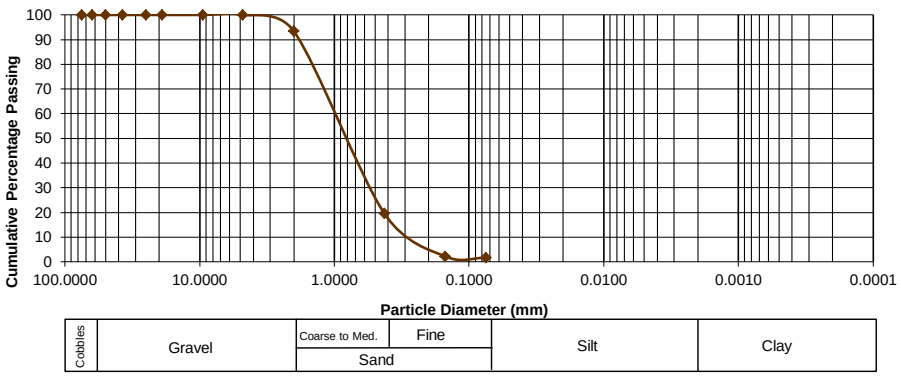


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	0.00	0.00	100.00	-	-	-	-
#10	2.000	13.74	6.63	93.37	±0.06	1.96		
#40	0.425	166.92	80.49	19.51	±0.55	1.96		
#100	0.150	202.90	97.84	2.16	±0.77	1.96		
#200	0.075	203.99	98.37	1.63	±0.95	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	255.74
Dry Soil + Can (g):	227.45
Mass of Can (g):	20.08
Moisture Loss (g):	28.29
Original Dry Mass (g):	207.37
Moisture Content (%):	**13.6**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**13.6**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-5_0

APPENDIX C: MOISTURE DENSITY RELATION & CALIFORNIA BEARING RATIO TEST REPORTS

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Sampling:	07/02/20	**TP/BS Number:**	TP-1
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90318 N ; 118.82516 E	**Layer Depth (m):**	0.00-1.30
Station:	-	**Date of Testing:**	07/16/20

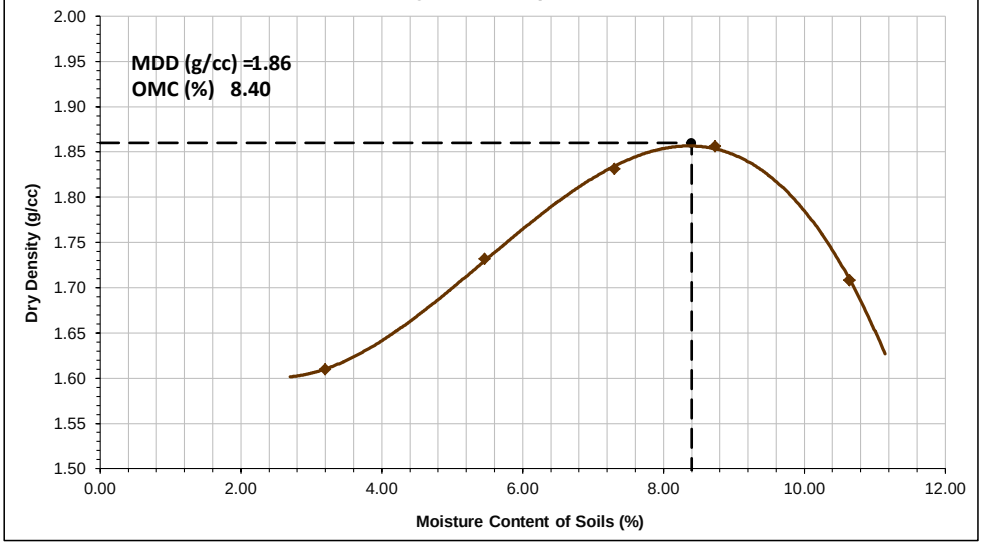
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO273**	**FO-300**	**FO-500**	**FO-165**	**FO-189**	**FO-501**	**FO-588**	**FO-116**	**FO-296**	**FO-284**	**-**	**-**
Wet Soil + Can (g)	151.91	154.43	182.51	172.38	162.08	183.53	163.27	156.77	151.80	160.15	-	-
Dry Soil + Can (g)	147.59	150.49	174.15	164.38	152.38	172.35	151.67	145.79	139.11	146.60	-	-
Mass of Can (g)	19.97	19.63	19.73	19.37	19.29	19.83	19.60	19.40	19.38	19.86	-	-
Moisture Loss (g)	4.32	3.94	8.36	8.00	9.70	11.18	11.60	10.98	12.69	13.55	-	-
Mass of Dry Soil (g)	127.62	130.86	154.42	145.01	133.09	152.52	132.07	126.39	119.73	126.74	-	-
Moisture Content (%)	3.39	3.01	5.41	5.52	7.29	7.33	8.78	8.69	10.60	10.69	-	-
Average Moisture (%)	**3.20**		**5.47**		**7.31**		**8.74**		**10.65**		**-**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**-**
Wet Soil + Mold (g)	5,010.00	5,165.00	5,295.00	5,345.00	5,225.00	-
Mass of Mold (g)	3,450.00	3,450.00	3,450.00	3,450.00	3,450.00	-
Mass of Wet Soil (g)	1,560.00	1,715.00	1,845.00	1,895.00	1,775.00	-
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	-
Wet Density (g/cc)	**1.66**	**1.83**	**1.96**	**2.02**	**1.89**	**-**
Dry Density (g/cc)	**1.61**	**1.73**	**1.83**	**1.86**	**1.71**	**-**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.86**
Opt. Moisture Content (%):	**8.40**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-1_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-1
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.30
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90318 N ; 118.82516 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**DE76**	**FC54**	**WQ98**	**SC35**	**FAX-34**	**O-465**
Wet Soil + Can (g)	162.79	189.45	159.47	182.15	164.49	180.50
Dry Soil + Can (g)	151.44	176.63	148.38	169.90	152.97	168.22
Mass of Can (g)	18.25	22.35	19.56	22.14	18.81	20.50
Moisture Loss (g)	11.35	12.82	11.09	12.25	11.52	12.28
Mass of Dry Soil (g)	133.19	154.29	128.82	147.76	134.16	147.72
Moisture Content (%)	8.52	8.31	8.61	8.29	8.59	8.31
Average Moisture (%)	**8.42**		**8.45**		**8.45**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-29**	**CBR-30**	**CBR-32**
Wet Soil + Mold (g)	10290.00	10730.00	10880.00
Mass of Mold (g)	6140.00	6270.00	6265.00
Mass of Wet Soil (g)	4150.00	4460.00	4615.00
Volume of Mold (cc)	2185.00	2250.00	2237.04
Wet Density (g/cc)	**1.90**	**1.98**	**2.06**
Dry Density (g/cc)	**1.75**	**1.83**	**1.90**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	2.84	2.42	2.1
Reading After Soaking ($x10^{-1}$ mm)	5.06	4.31	3.75
Swell (%)	**1.91**	**1.62**	**1.42**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	13.95	17.44	21.80	0.72	0.90	1.12			
1.27	26.51	33.14	41.42	1.37	1.71	2.14			
1.91	36.28	45.34	56.68	1.87	2.34	2.92			
2.54	41.86	52.32	65.40	2.16	2.70	3.37	**3.07**	**3.83**	**4.79**
3.81	49.53	61.91	77.39	2.55	3.19	3.99			
5.08	53.02	66.27	82.84	2.73	3.42	4.27	**2.60**	**3.25**	**4.07**
7.62	57.20	71.50	89.38	2.95	3.69	4.61			
10.16	58.60	73.25	91.56	3.02	3.78	4.72			
12.70	59.99	74.99	93.74	3.09	3.87	4.83			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

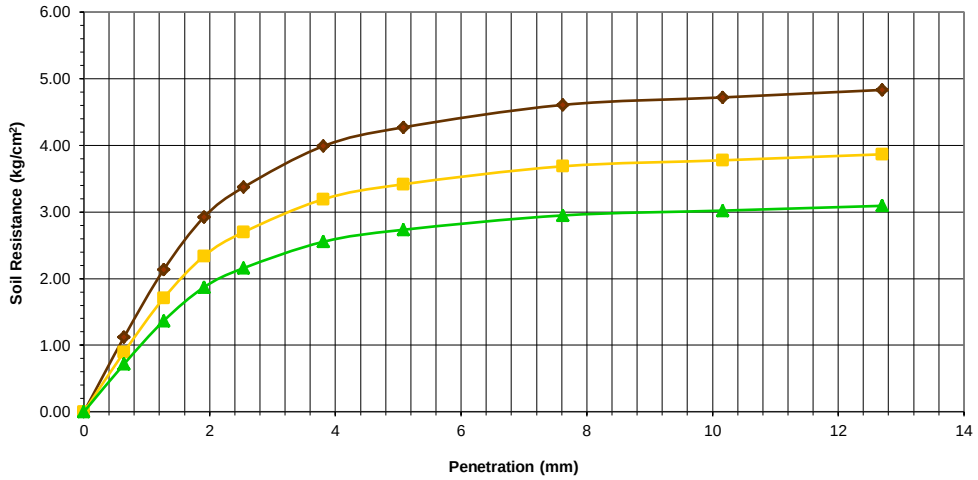
1911PENRO1_RCBRT_TP-1_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

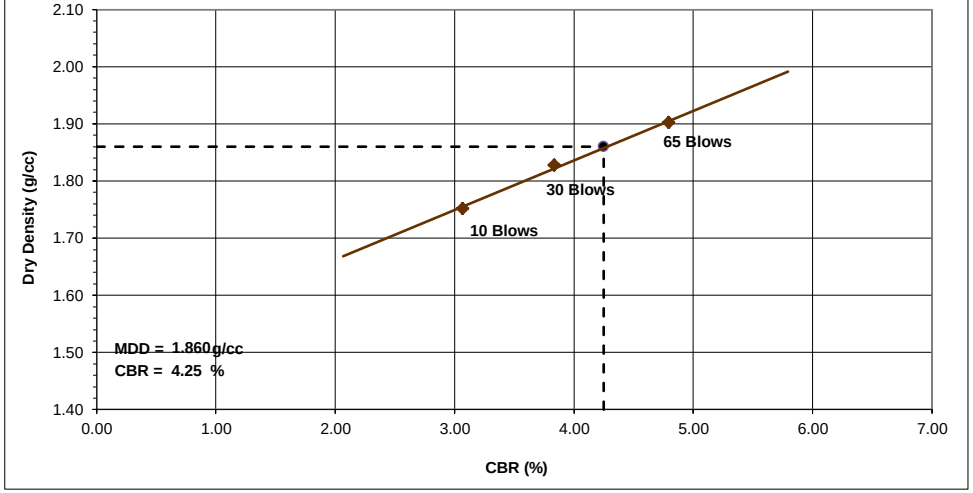
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-1
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.30
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90318 N ; 118.82516 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	1.899	2.60
30	1.982	3.25
65	2.063	4.07

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.860	4.25
95	1.767	3.22

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

R-CBRT v.1 - *VS Adriano Civil Engineering Consultancy Services. #20-B Karilagan Street Dona Damiana Village, Rosario Pasig. +63(2) 655-80-69*

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Sampling:	07/02/20	**TP/BS Number:**	TP-2
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90325 N ; 118.82536 E	**Layer Depth (m):**	0.00-1.30
Station:	-	**Date of Testing:**	07/16/20

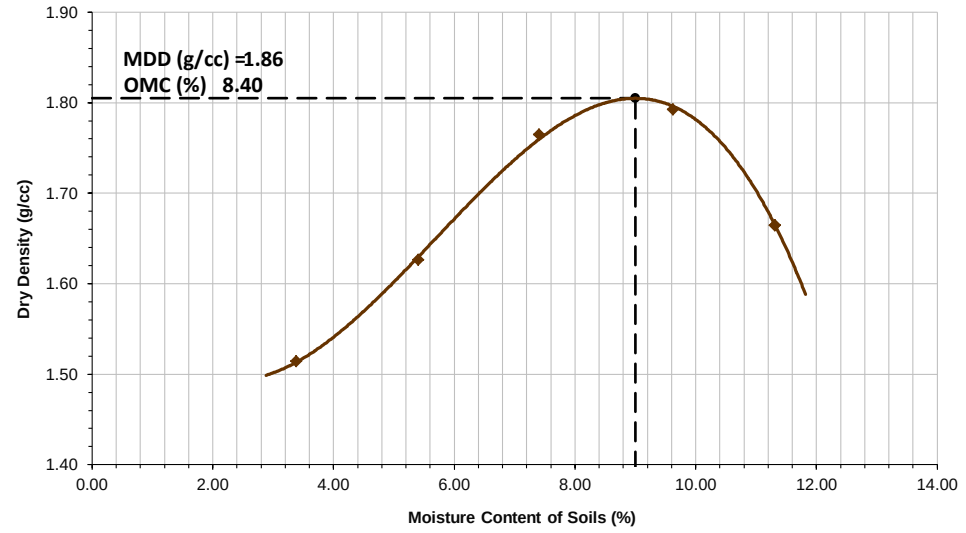
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO-13**	**FO-431**	**FO-148**	**FO-109**	**FO-373**	**FO-200**	**FO-181**	**FO-172**	**FO-407**	**FO-157**	**-**	**-**
Wet Soil + Can (g)	159.92	154.71	172.10	164.03	161.12	169.37	158.65	178.40	167.25	183.39	-	-
Dry Soil + Can (g)	155.10	150.50	164.16	156.72	151.23	159.14	146.54	164.29	152.03	166.92	-	-
Mass of Can (g)	19.33	19.78	19.61	19.48	19.36	19.35	19.25	19.35	19.36	19.41	-	-
Moisture Loss (g)	4.82	4.21	7.94	7.31	9.89	10.23	12.11	14.11	15.22	16.47	-	-
Mass of Dry Soil (g)	135.77	130.72	144.55	137.24	131.87	139.79	127.29	144.94	132.67	147.51	-	-
Moisture Content (%)	3.55	3.22	5.49	5.33	7.50	7.32	9.51	9.74	11.47	11.17	-	-
Average Moisture (%)	**3.39**		**5.41**		**7.41**		**9.62**		**11.32**		**-**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**-**
Wet Soil + Mold (g)	4,920.00	5,060.00	5,230.00	5,295.00	5,190.00	-
Mass of Mold (g)	3,450.00	3,450.00	3,450.00	3,450.00	3,450.00	-
Mass of Wet Soil (g)	1,470.00	1,610.00	1,780.00	1,845.00	1,740.00	-
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	-
Wet Density (g/cc)	**1.57**	**1.71**	**1.90**	**1.96**	**1.85**	**-**
Dry Density (g/cc)	**1.51**	**1.63**	**1.76**	**1.79**	**1.66**	**-**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.81**
Opt. Moisture Content (%):	**9.00**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-2_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-2
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.30
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90325 N ; 118.82536 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**GF3**	**DS5**	**AW4**	**DX7**	**FO-112**	**AG-72**
Wet Soil + Can (g)	155.13	194.32	173.27	179.63	165.16	184.97
Dry Soil + Can (g)	143.70	180.18	160.51	166.45	152.87	171.60
Mass of Can (g)	19.35	20.45	21.31	18.25	19.55	20.05
Moisture Loss (g)	11.43	14.14	12.76	13.18	12.29	13.37
Mass of Dry Soil (g)	124.34	159.73	139.20	148.21	133.32	151.55
Moisture Content (%)	9.19	8.86	9.16	8.89	9.22	8.82
Average Moisture (%)	**9.02**		**9.03**		**9.02**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-34**	**CBR-36**	**CBR-37**
Wet Soil + Mold (g)	10460.00	10410.00	10930.00
Mass of Mold (g)	6410.00	6210.00	6405.00
Mass of Wet Soil (g)	4050.00	4200.00	4525.00
Volume of Mold (cc)	2187.00	2174.00	2249.31
Wet Density (g/cc)	**1.85**	**1.93**	**2.01**
Dry Density (g/cc)	**1.70**	**1.77**	**1.85**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	1.85	1.58	1.37
Reading After Soaking ($x10^{-1}$ mm)	3.56	3.04	2.64
Swell (%)	**1.47**	**1.25**	**1.09**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows		
	10	30	65	10	30	65
0.64	12.56	15.70	19.62	0.65	0.81	1.01
1.27	22.32	27.90	34.88	1.15	1.44	1.80
1.91	30.00	37.50	46.87	1.55	1.93	2.42
2.54	36.28	45.34	56.68	1.87	2.34	2.92
3.81	44.65	55.81	69.76	2.30	2.88	3.60
5.08	51.62	64.53	80.66	2.66	3.33	4.16
7.62	61.39	76.74	95.92	3.16	3.96	4.94
10.16	68.36	85.46	106.82	3.52	4.40	5.51
12.70	72.55	90.69	113.36	3.74	4.67	5.84

CBR (%) Blows		
10	30	65
2.66	**3.32**	**4.15**
2.53	**3.17**	**3.96**

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

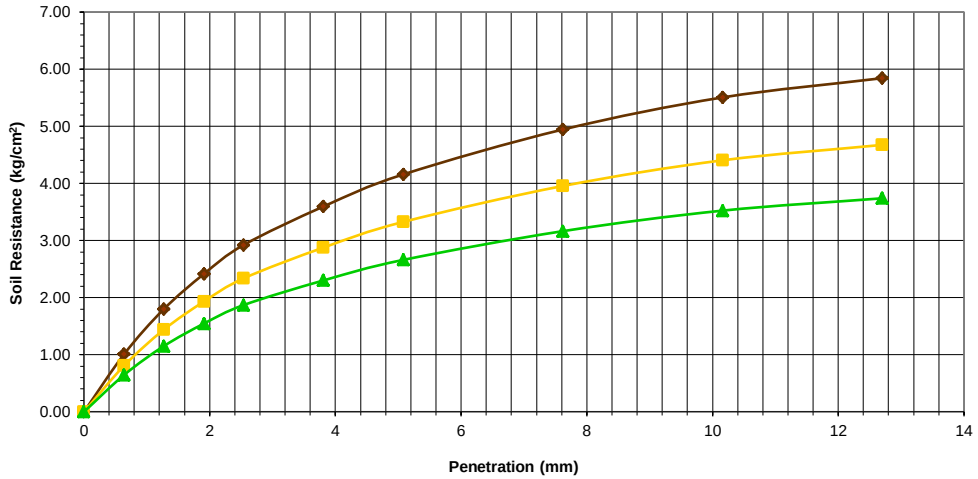
1911PENRO1_RCBRT_TP-2_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

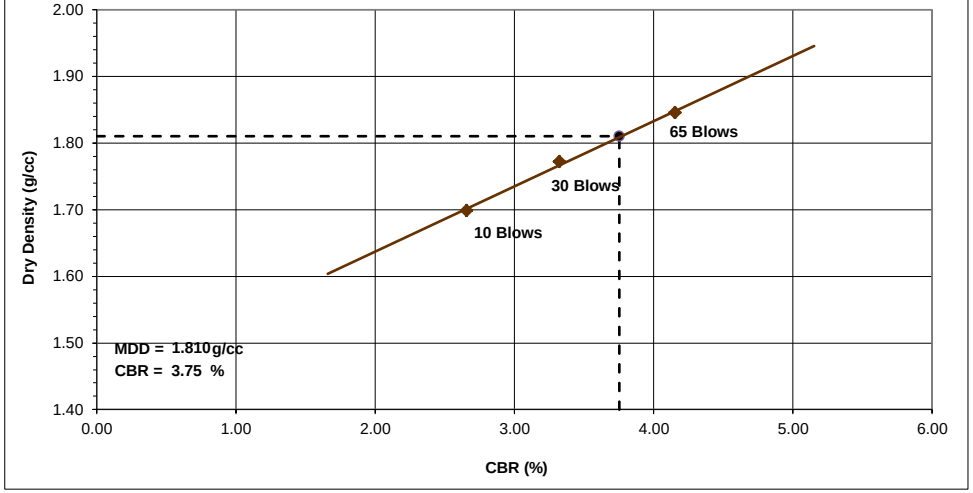
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-2
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.30
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90325 N ; 118.82536 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	1.852	2.53
30	1.932	3.17
65	2.012	3.96

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.810	3.75
95	1.720	2.85

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

R-CBRT v.1 - *VS Adriano Civil Engineering Consultancy Services. #20-B Karilagan Street Dona Damiana Village, Rosario Pasig. +63(2) 655-80-69*

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Sampling:	07/02/20	**TP/BS Number:**	TP-3
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90319 N ; 118.82545 E	**Layer Depth (m):**	0.00-1.20
Station:	-	**Date of Testing:**	07/16/20

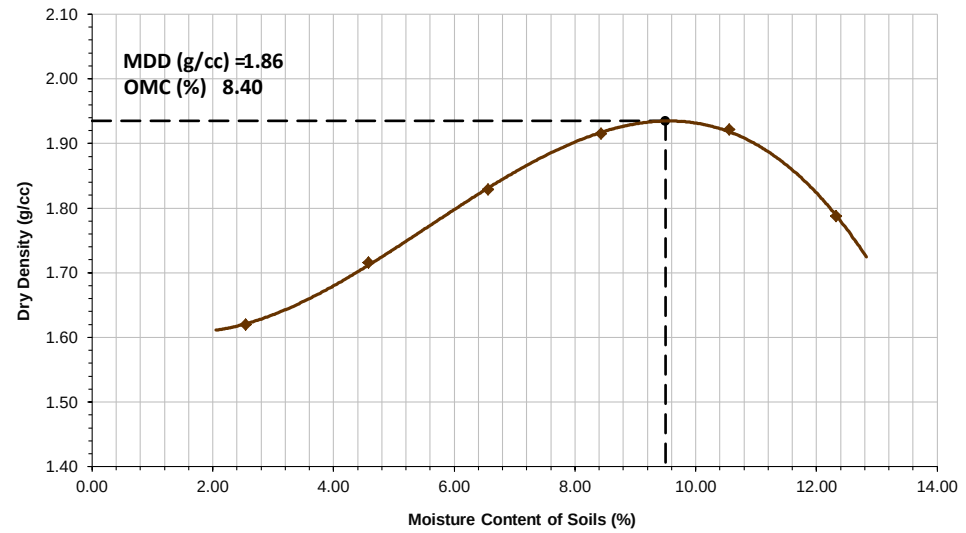
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**BEU46**	**SG66**	**FO-577**	**FO-332**	**TBY**	**FO-391**	**TEL99**	**FO557**	**FO368**	**FO398**	**FO115**	**FO459**
Wet Soil + Can (g)	158.48	162.04	167.13	176.55	166.39	185.07	156.07	163.43	164.68	172.11	161.27	171.64
Dry Soil + Can (g)	155.42	158.06	161.03	169.29	157.31	175.12	145.57	152.09	150.70	157.67	146.03	154.72
Mass of Can (g)	18.98	18.91	19.73	19.72	22.14	19.96	19.10	19.87	19.76	19.40	20.17	19.85
Moisture Loss (g)	3.06	3.98	6.10	7.26	9.08	9.95	10.50	11.34	13.98	14.44	15.24	16.92
Mass of Dry Soil (g)	136.44	139.15	141.30	149.57	135.17	155.16	126.47	132.22	130.94	138.27	125.86	134.87
Moisture Content (%)	2.24	2.86	4.32	4.85	6.72	6.41	8.30	8.58	10.68	10.44	12.11	12.55
Average Moisture (%)	**2.55**		**4.59**		**6.57**		**8.44**		**10.56**		**12.33**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**
Wet Soil + Mold (g)	5,005.00	5,130.00	5,275.00	5,395.00	5,440.00	5,330.00
Mass of Mold (g)	3,445.00	3,445.00	3,445.00	3,445.00	3,445.00	3,445.00
Mass of Wet Soil (g)	1,560.00	1,685.00	1,830.00	1,950.00	1,995.00	1,885.00
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	939.00
Wet Density (g/cc)	**1.66**	**1.79**	**1.95**	**2.08**	**2.12**	**2.01**
Dry Density (g/cc)	**1.62**	**1.72**	**1.83**	**1.92**	**1.92**	**1.79**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.94**
Opt. Moisture Content (%):	**9.50**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-3_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-3
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.20
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90319 N ; 118.82545 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**VF45**	**CD55**	**S56**	**EW6**	**AG-24**	**FB-36**
Wet Soil + Can (g)	145.89	190.01	163.90	190.02	162.33	180.87
Dry Soil + Can (g)	134.70	175.46	151.17	175.46	149.67	167.10
Mass of Can (g)	20.44	19.00	18.89	18.24	19.28	19.00
Moisture Loss (g)	11.18	14.55	12.73	14.57	12.66	13.77
Mass of Dry Soil (g)	114.27	156.46	132.27	157.22	130.39	148.10
Moisture Content (%)	9.79	9.30	9.63	9.26	9.71	9.30
Average Moisture (%)	**9.54**		**9.45**		**9.50**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-37**	**CBR-38**	**CBR-39**
Wet Soil + Mold (g)	10600.00	10960.00	11260.00
Mass of Mold (g)	6130.00	6450.00	6390.00
Mass of Wet Soil (g)	4470.00	4510.00	4870.00
Volume of Mold (cc)	2232.00	2170.00	2239.16
Wet Density (g/cc)	**2.00**	**2.08**	**2.17**
Dry Density (g/cc)	**1.83**	**1.90**	**1.99**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	2.31	1.97	1.71
Reading After Soaking ($x10^{-1}$ mm)	3.62	3.08	2.68
Swell (%)	**1.13**	**0.95**	**0.83**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	20.93	26.16	32.70	1.08	1.35	1.69			
1.27	36.28	45.34	56.68	1.87	2.34	2.92			
1.91	48.83	61.04	76.30	2.52	3.15	3.93			
2.54	59.99	74.99	93.74	3.09	3.87	4.83	**4.40**	**5.50**	**6.87**
3.81	75.34	94.18	117.72	3.88	4.85	6.07			
5.08	86.50	108.13	135.16	4.46	5.57	6.97	**4.25**	**5.31**	**6.64**
7.62	103.24	129.06	161.32	5.32	6.65	8.32			
10.16	115.80	144.75	180.94	5.97	7.46	9.33			
12.70	125.57	156.96	196.20	6.47	8.09	10.11			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

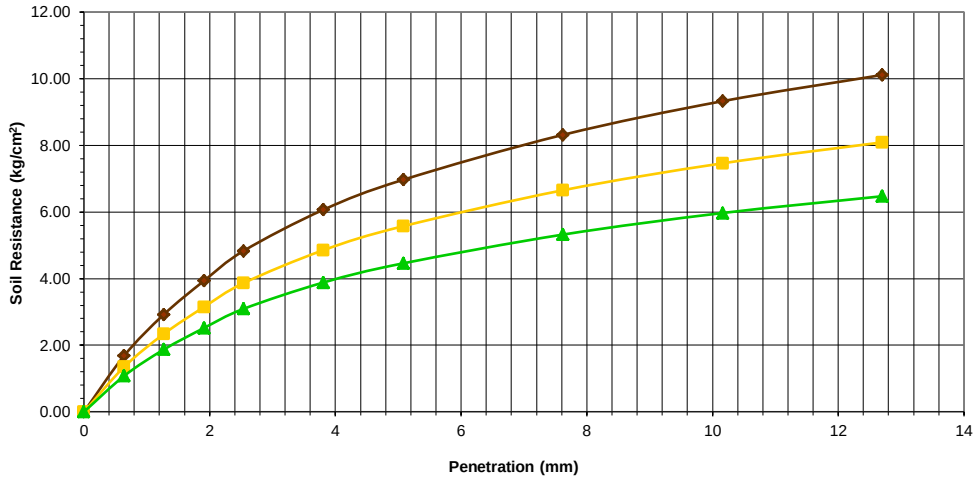
1911PENRO1_RCBRT_TP-3_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

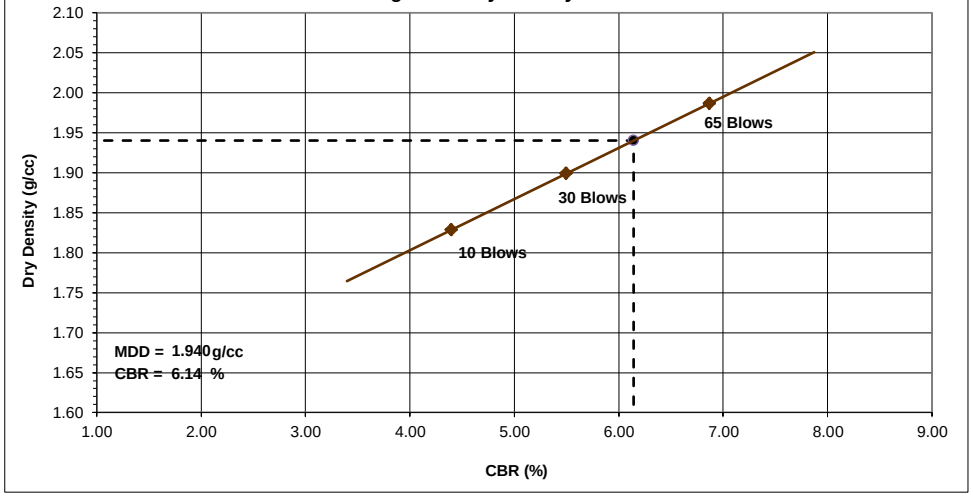
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-3
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.20
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90319 N ; 118.82545 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	2.003	4.25
30	2.078	5.31
65	2.175	6.64

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.940	6.14
95	1.843	4.63

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Sampling:	07/02/20	**TP/BS Number:**	TP-4
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90327 N ; 118.82558 E	**Layer Depth (m):**	0.00-1.20
Station:	-	**Date of Testing:**	07/16/20

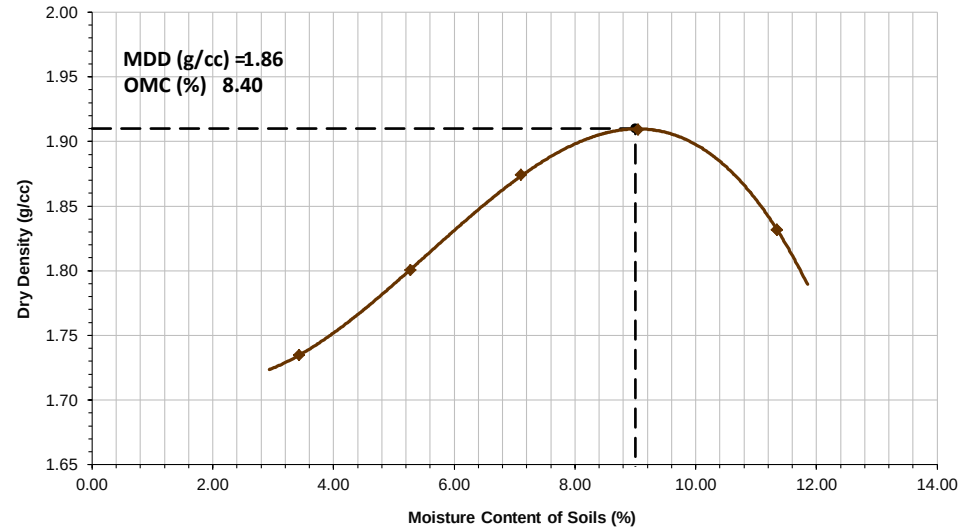
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO56**	**FO520**	**FO191**	**FO421**	**FO101**	**FO-338**	**FO-333**	**FO-73**	**FO-08**	**FO-170**	**-**	**-**
Wet Soil + Can (g)	168.79	165.27	171.45	164.60	161.81	164.72	170.76	165.82	173.76	176.87	-	-
Dry Soil + Can (g)	164.01	160.27	163.83	157.34	152.43	155.04	158.18	153.74	157.68	161.17	-	-
Mass of Can (g)	19.53	19.67	19.67	19.59	19.75	19.67	19.66	19.68	19.49	19.29	-	-
Moisture Loss (g)	4.78	5.00	7.62	7.26	9.38	9.68	12.58	12.08	16.08	15.70	-	-
Mass of Dry Soil (g)	144.48	140.60	144.16	137.75	132.68	135.37	138.52	134.06	138.19	141.88	-	-
Moisture Content (%)	3.31	3.56	5.29	5.27	7.07	7.15	9.08	9.01	11.64	11.07	-	-
Average Moisture (%)	**3.43**		**5.28**		**7.11**		**9.05**		**11.35**		**-**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**-**
Wet Soil + Mold (g)	5,135.00	5,230.00	5,335.00	5,405.00	5,365.00	-
Mass of Mold (g)	3,450.00	3,450.00	3,450.00	3,450.00	3,450.00	-
Mass of Wet Soil (g)	1,685.00	1,780.00	1,885.00	1,955.00	1,915.00	-
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	-
Wet Density (g/cc)	**1.79**	**1.90**	**2.01**	**2.08**	**2.04**	**-**
Dry Density (g/cc)	**1.73**	**1.80**	**1.87**	**1.91**	**1.83**	**-**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.91**
Opt. Moisture Content (%):	**9.00**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-4_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-4
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.20
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90327 N ; 118.82558 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**HU32**	**YTRE**	**JU65**	**RE87**	**AG-28**	**AFO-331**
Wet Soil + Can (g)	173.15	169.06	153.56	178.00	160.21	176.18
Dry Soil + Can (g)	160.26	156.91	142.45	165.08	148.39	163.45
Mass of Can (g)	20.41	20.04	20.98	18.47	19.25	19.65
Moisture Loss (g)	12.89	12.15	11.11	12.92	11.82	12.73
Mass of Dry Soil (g)	139.86	136.87	121.47	146.61	129.14	143.80
Moisture Content (%)	9.21	8.88	9.14	8.81	9.15	8.85
Average Moisture (%)	**9.05**		**8.98**		**9.00**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-19**	**CBR-20**	**CBR-21**
Wet Soil + Mold (g)	11560.00	11600.00	11740.00
Mass of Mold (g)	7260.00	7190.00	6980.00
Mass of Wet Soil (g)	4300.00	4410.00	4760.00
Volume of Mold (cc)	2206.00	2172.00	2245.93
Wet Density (g/cc)	**1.95**	**2.03**	**2.12**
Dry Density (g/cc)	**1.79**	**1.86**	**1.94**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	1.76	1.5	1.3
Reading After Soaking ($x10^{-1}$ mm)	3.59	3.06	2.66
Swell (%)	**1.57**	**1.34**	**1.17**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	15.35	19.18	23.98	0.79	0.99	1.24			
1.27	25.11	31.39	39.24	1.29	1.62	2.02			
1.91	32.09	40.11	50.14	1.65	2.07	2.58			
2.54	37.67	47.09	58.86	1.94	2.43	3.03	**2.76**	**3.45**	**4.31**
3.81	44.65	55.81	69.76	2.30	2.88	3.60			
5.08	48.83	61.04	76.30	2.52	3.15	3.93	**2.40**	**3.00**	**3.75**
7.62	54.41	68.02	85.02	2.80	3.51	4.38			
10.16	58.60	73.25	91.56	3.02	3.78	4.72			
12.70	61.39	76.74	95.92	3.16	3.96	4.94			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

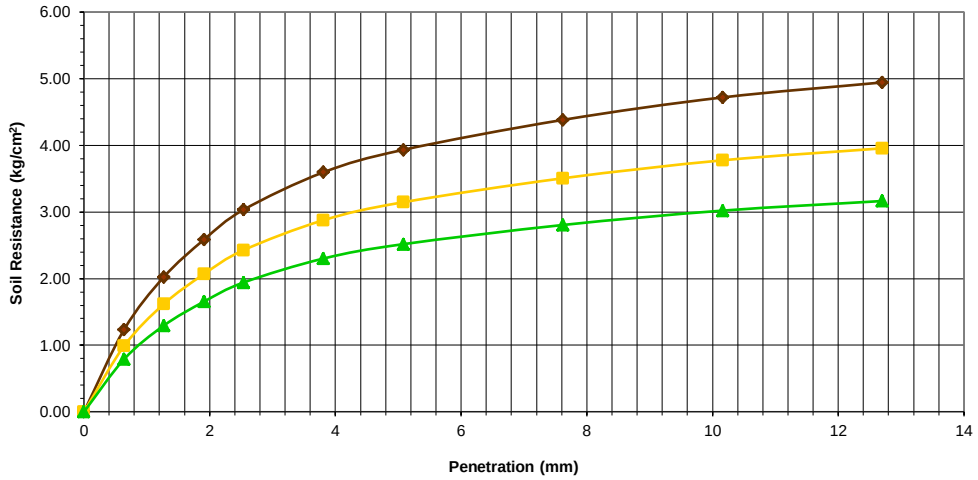
1911PENRO1_RCBRT_TP-4_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

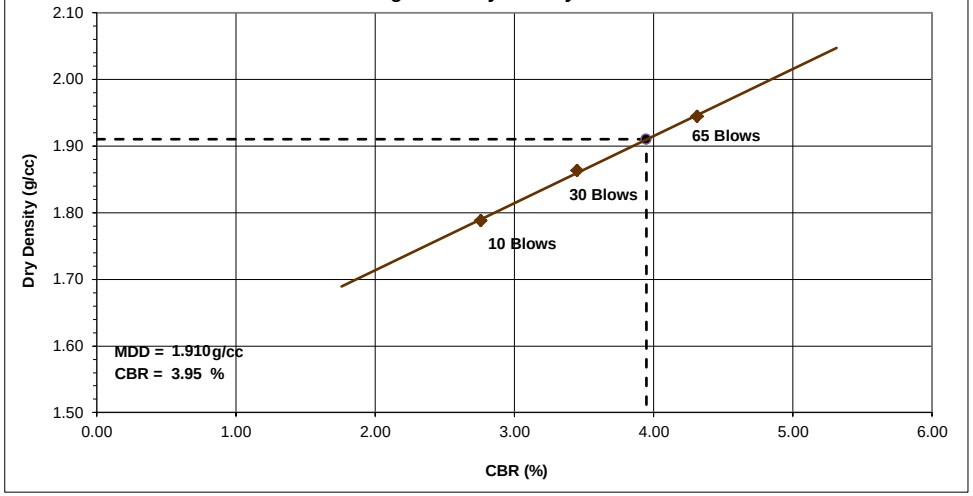
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-4
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.20
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90327 N ; 118.82558 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	1.949	2.40
30	2.030	3.00
65	2.119	3.75

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.910	3.95
95	1.815	3.01

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

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MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION		
Date of Sampling:	07/02/20	**TP/BS Number:**	TP-5
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90321 N ; 118.82568 E	**Layer Depth (m):**	0.00-0.90
Station:	-	**Date of Testing:**	07/16/20

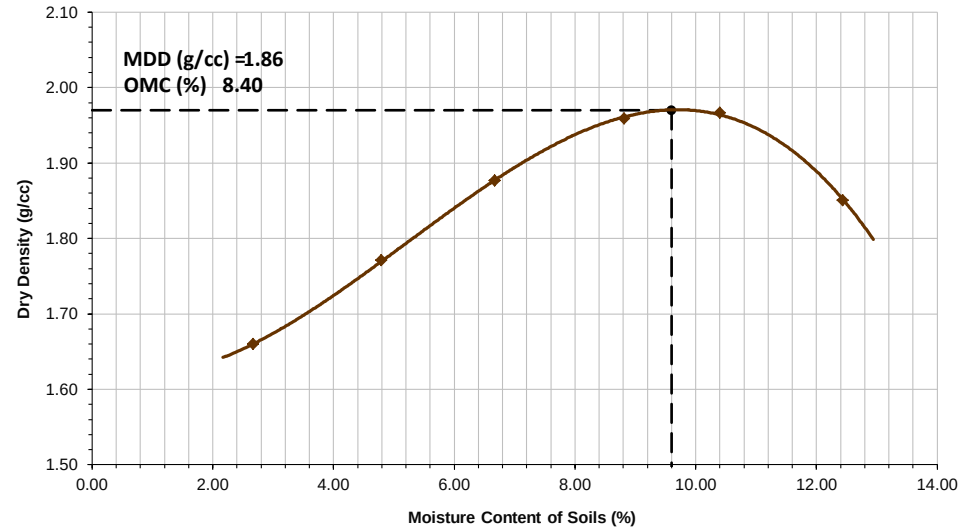
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO-408**	**FO-567**	**FO-230**	**FO-552**	**FO-15**	**FO-512**	**AZ-19**	**FO-217**	**FO-167**	**FO-185**	**FO-22**	**FO-432**
Wet Soil + Can (g)	164.09	155.73	163.50	156.65	171.72	167.99	176.70	163.04	160.93	177.09	171.17	172.02
Dry Soil + Can (g)	159.99	152.52	156.99	150.30	161.82	159.07	163.93	151.36	147.47	162.45	154.43	155.08
Mass of Can (g)	19.62	19.84	19.49	19.70	19.52	19.41	18.72	19.33	19.60	20.13	19.31	19.49
Moisture Loss (g)	4.10	3.21	6.51	6.35	9.90	8.92	12.77	11.68	13.46	14.64	16.74	16.94
Mass of Dry Soil (g)	140.37	132.68	137.50	130.60	142.30	139.66	145.21	132.03	127.87	142.32	135.12	135.59
Moisture Content (%)	2.92	2.42	4.73	4.86	6.96	6.39	8.79	8.85	10.53	10.29	12.39	12.49
Average Moisture (%)	**2.67**		**4.80**		**6.67**		**8.82**		**10.41**		**12.44**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**
Wet Soil + Mold (g)	4,620.00	4,755.00	4,885.00	5,000.00	5,035.00	4,955.00
Mass of Mold (g)	3,105.00	3,105.00	3,105.00	3,105.00	3,105.00	3,105.00
Mass of Wet Soil (g)	1,515.00	1,650.00	1,780.00	1,895.00	1,930.00	1,850.00
Volume of Mold (cc)	889.00	889.00	889.00	889.00	889.00	889.00
Wet Density (g/cc)	**1.70**	**1.86**	**2.00**	**2.13**	**2.17**	**2.08**
Dry Density (g/cc)	**1.66**	**1.77**	**1.88**	**1.96**	**1.97**	**1.85**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.97**
Opt. Moisture Content (%):	**9.60**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-5_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-5
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-0.90
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90321 N ; 118.82568 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**BV43**	**CX21**	**SD54**	**AW76**	**FO-354**	**FO-528**
Wet Soil + Can (g)	166.77	180.20	155.63	169.52	158.77	173.16
Dry Soil + Can (g)	153.80	166.42	143.55	156.82	146.48	160.02
Mass of Can (g)	21.44	18.92	19.85	21.31	19.85	19.92
Moisture Loss (g)	12.97	13.78	12.08	12.70	12.29	13.14
Mass of Dry Soil (g)	132.37	147.50	123.70	135.51	126.63	140.10
Moisture Content (%)	9.80	9.34	9.77	9.37	9.71	9.38
Average Moisture (%)	**9.57**		**9.57**		**9.54**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-10**	**CBR-11**	**CBR-12**
Wet Soil + Mold (g)	10780.00	11150.00	11370.00
Mass of Mold (g)	6390.00	6510.00	6385.00
Mass of Wet Soil (g)	4390.00	4640.00	4985.00
Volume of Mold (cc)	2161.00	2190.00	2260.63
Wet Density (g/cc)	**2.03**	**2.12**	**2.21**
Dry Density (g/cc)	**1.85**	**1.93**	**2.01**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	1.96	1.67	1.45
Reading After Soaking ($x10^{-1}$ mm)	3.97	3.38	2.94
Swell (%)	**1.73**	**1.47**	**1.28**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	13.95	17.44	21.80	0.72	0.90	1.12			
1.27	25.11	31.39	39.24	1.29	1.62	2.02			
1.91	33.48	41.86	52.32	1.73	2.16	2.70			
2.54	40.04	50.05	62.57	2.06	2.58	3.23	**2.93**	**3.67**	**4.59**
3.81	47.44	59.30	74.12	2.45	3.06	3.82			
5.08	51.62	64.53	80.66	2.66	3.33	4.16	**2.53**	**3.17**	**3.96**
7.62	57.20	71.50	89.38	2.95	3.69	4.61			
10.16	61.39	76.74	95.92	3.16	3.96	4.94			
12.70	65.57	81.97	102.46	3.38	4.23	5.28			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

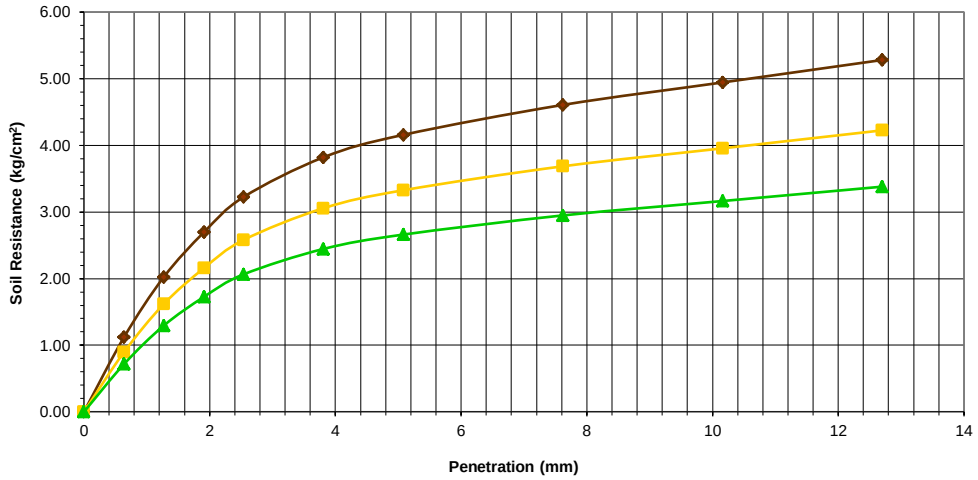
1911PENRO1_RCBRT_TP-5_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

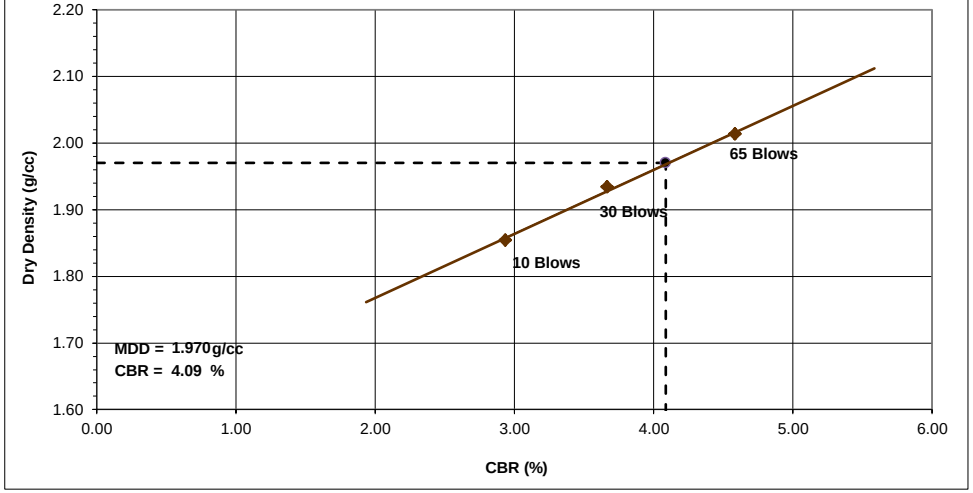
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-5
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-0.90
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90321 N ; 118.82568 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 1ST LOCATION			**Date of Sampling:**	07/02/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	2.031	2.53
30	2.119	3.17
65	2.205	3.96

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.970	4.09
95	1.872	3.10

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

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APPENDIX D: PHOTOGRAPHS

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA, PALAWAN		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES C	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

TEST PIT 1
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/2/20
STATION: -
COORDINATES: 9.90318 N ; 118.82516 E
SITE TOPOGRAPHY: FLAT

Figure 1.1 Panoramic View

Figure 1.2 Test Pit 1

TEST PIT 2
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/2/20
STATION: -
COORDINATES: 9.90325 N ; 118.82536 E
SITE TOPOGRAPHY: FLAT

Figure 2.1 Panoramic View

Figure 2.2 Test Pit 2

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA, PALAWAN		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES C	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

TEST PIT 3
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/2/20
STATION: -
COORDINATES: 9.90319 N ; 118.82545 E
SITE TOPOGRAPHY: FLAT

Figure 3.1 Panoramic View

Figure 3.2 Test Pit 3

TEST PIT 4
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/2/20
STATION: -
COORDINATES: 9.90327 N ; 118.82558 E
SITE TOPOGRAPHY: FLAT

Figure 4.1 Panoramic View

Figure 4.2 Test Pit 4

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED
TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA, PALAWAN		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES C	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

TEST PIT 5
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/2/20
STATION: -
COORDINATES: 9.90321 N ; 118.82568 E
SITE TOPOGRAPHY: FLAT

Figure 5.1 Panoramic View

Figure 5.2 Test Pit 5

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED
TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

LOCATION 2

APPENDIX A: SOIL PROFILE

TP NO.	TP – 1	TP – 2	TP – 3	TP – 4	TP – 5
SITE TOPOGRAPHY	FLAT	FLAT	FLAT	FLAT	FLAT
COORDINATES N	9.901693	9.90154	9.90153	9.90150	9.90131
COORDINATES E	118.823893	118.82377	118.82391	118.82418	118.82405
STATION	SNAKE ISLAND – 2ND LOCATION	SNAKE ISLAND – 2ND LOCATION	SNAKE ISLAND – 2ND LOCATION	SNAKE ISLAND – 2ND LOCATION	SNAKE ISLAND – 2ND LOCATION
WEATHER CONDITION	SUNNY	SUNNY	SUNNY	SUNNY	SUNNY
DEPTH (m.)	Light Brown, SAND with Shells A-1-b(0) 1.00	Light Brown, SAND with Shells A-1-b(0) 1.00	Light Brown, SAND with Shells A-1-b(0) 1.00	Light Brown, SAND with Shells A-1-b(0) 1.00	Light Brown, SAND with Shells A-1-b(0) 1.00
	CBR @ 95% =5.89 CBR @ 100% =7.79	CBR @ 95% =2.64 CBR @ 100% =3.48	CBR @ 95% =2.36 CBR @ 100% =3.71	CBR @ 95% =2.64 CBR @ 100% =3.48	CBR @ 95% =2.30 CBR @ 100% =3.04

0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50

TEST PIT SOIL PROFILE
NOT TO SCALE

LEGEND

- INFERRED WATER LEVEL
- SPT – N VALUE > 50
- PEAT
- CLAY
- SILT
- SAND
- GRAVEL
- ROCK/HARD STRATA

PREPARED BY:

VICTOR S. ADRIANO
CIVIL ENGINEERING
CONSULTANCY SERVICES

#20-B Karilagan St. Dona Damiana Village, Rosario, Pasig City

CLIENT / CONSULTANT:

PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICE
BRGY. STA. MONICA, PUERTO PRINCESA, PALAWAN

PROJECT TITLE:

GEOTECHNICAL INVESTIGATION WORKS FOR SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH
PUERTO PRINCESA, PALAWAN

SHEET TITLE:

SOIL PROFILE

SKETCHED BY:

RODELITO PODADOR
Field Supervisor

CHECKED BY:

ELLAINE RAMIREZ
Office Engineer

APPROVED BY:

REMEDIOS SOLDAO
Head of Engineering Department

DRAWING NO:

SP-01
SP-01

REFERENCE NO.:

1911PENR01_RSPBH_TP1-5_0

APPENDIX B: SUMMARY OF TEST RESULTS AND PARTICLE SIZE ANALYSIS & ATTERBERG LIMITS TEST REPORTS

SUMMARY OF TEST PIT TEST RESULTS

Project Name: GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH
Project Location: PUERTO PRINCESA
Client's Address: BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN

Project Reference #: 1911PENRO1
Client: PROV'L ENVIRONMENT AND NATURAL RESOURCES OFFICE
Consultant: -
Contact Number: -

STATION	TP NO.	SAMPLE ID	SAMPLE DEPTH (m)	AASHTO CLASS	ATTERBERG LIMITS		MOISTURE CONTENT (%)	PARTICLE SIZE GRADING (CUMULATIVE % PASSING)										HYDROMETER PERFORMED?	G_s	*MDR		*CBR	
					LL (%)	PI (%)		2 1/2" (50.00 mm)	1 1/2" (37.50 mm)	1" (25.00 mm)	3/4" (19.00 mm)	3/8" (9.50 mm)	#4 (4.75 mm)	#10 (2.00 mm)	#40 (0.425 mm)	#100 (0.150 mm)	#200 (0.075 mm)			MDD (g/cc)	OMC (%)	95% MDD	100% MDD
Sampling Procedure: *AASHTO R13-03 (2007),* ***Sampling Location:*** *SNAKE ISLAND - 2ND LOCATION* ***Date of Sampling:*** *7/3/20*																							
	TP-1	SS1	0.00-1.00	A-1-b(0)	NL	NP	13.0					100	96	82	21	3	2	NO	-	1.89	9.70	5.89	7.79
		NOTE: HIGH TIDE WATER UP TO 0.65m																					
	TP-2	SS1	0.00-1.00	A-1-b(0)	NL	NP	13.4					100	85	62	18	4	2	NO	-	1.97	9.80	2.64	3.48
		NOTE: HIGH TIDE WATER UP TO 0.65m																					
	TP-3	SS1	0.00-1.00	A-1-b(0)	NL	NP	11.0					100	90	69	20	5	2	NO	-	1.98	10.00	2.36	3.71
		NOTE: HIGH TIDE WATER UP TO 0.65m																					
	TP-4	SS1	0.00-1.00	A-1-b(0)	NL	NP	13.0					100	94	81	15	3	2	NO	-	1.93	10.00	2.64	3.48
		NOTE: HIGH TIDE WATER UP TO 0.65m																					
	TP-5	SS1	0.00-1.00	A-1-b(0)	NL	NP	11.5					100	88	63	19	4	3	NO	-	1.88	8.50	2.30	3.04
		NOTE: HIGH TIDE WATER UP TO 0.65m																					

*Test/s are not ISO/IEC 17025:2008 Accredited

Encoded by: ELLAINE RAMIREZ
Office Engineer

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

1911PENRO1_RSTPT_TP_0

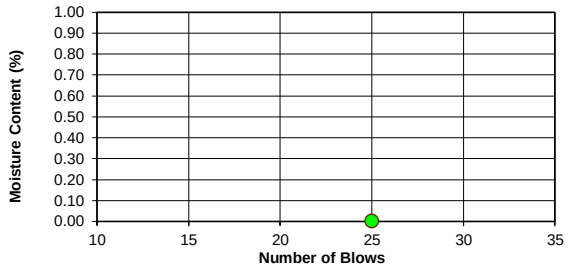
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/3/20	**TP/AH/BS Number:**	TP-1
Coordinates:	9.901693 N ; 118.823893 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.00
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

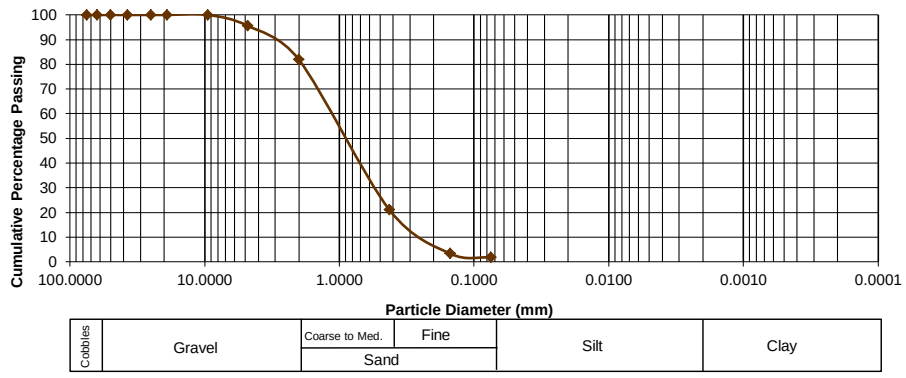


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	6.62	4.40	95.60	±0.08	1.96		
#10	2.000	27.25	18.12	81.88	±0.11	1.96		
#40	0.425	118.76	78.99	21.01	±0.76	1.96		
#100	0.150	145.40	96.71	3.29	±1.07	1.96		
#200	0.075	147.77	98.28	1.72	±1.31	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	189.67
Dry Soil + Can (g):	170.15
Mass of Can (g):	19.80
Moisture Loss (g):	19.52
Original Dry Mass (g):	150.35
Moisture Content (%):	**13.0**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**13.0**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-1_0

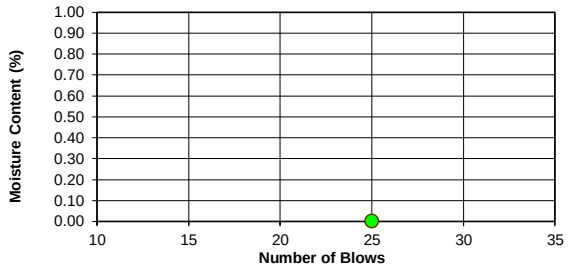
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/3/20	**TP/AH/BS Number:**	TP-2
Coordinates:	9.90154 N ; 118.82377 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.00
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

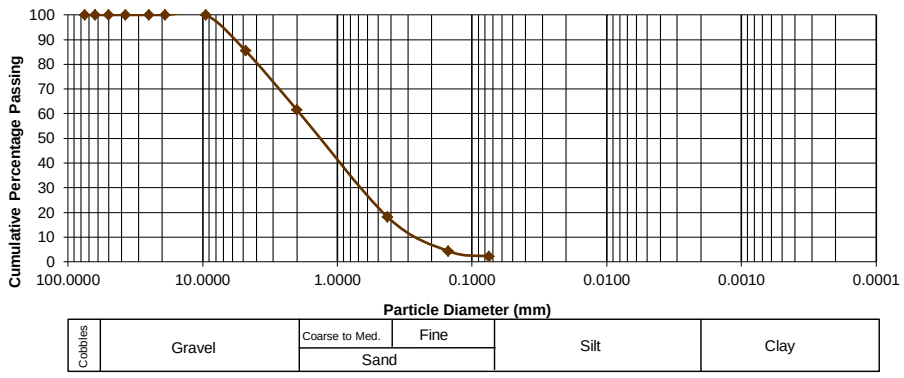


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	25.86	14.58	85.42	±0.06	1.96		
#10	2.000	68.17	38.43	61.57	±0.09	1.96		
#40	0.425	145.17	81.83	18.17	±0.64	1.96		
#100	0.150	169.72	95.67	4.33	±0.91	1.96		
#200	0.075	173.62	97.86	2.14	±1.11	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	221.20
Dry Soil + Can (g):	197.39
Mass of Can (g):	19.98
Moisture Loss (g):	23.81
Original Dry Mass (g):	177.41
Moisture Content (%):	**13.4**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**13.4**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-2_0

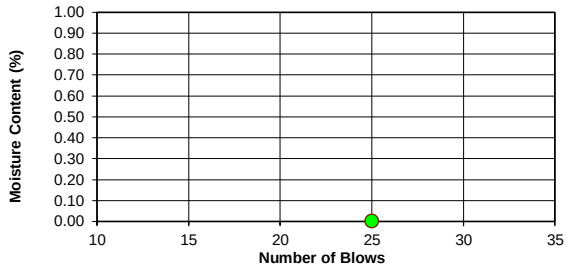
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/3/20	**TP/AH/BS Number:**	TP-3
Coordinates:	9.90153 N ; 118.82391 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.00
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

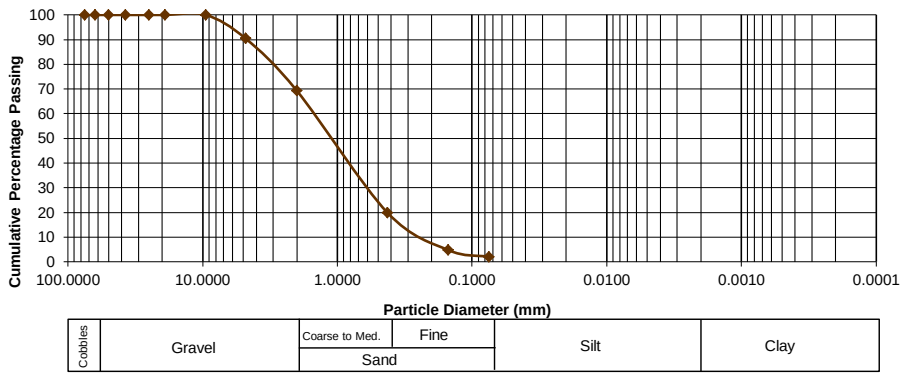


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	14.88	9.59	90.41	±0.07	1.96		
#10	2.000	47.66	30.72	69.28	±0.1	1.96		
#40	0.425	124.31	80.12	19.88	±0.73	1.96		
#100	0.150	147.82	95.27	4.73	±1.04	1.96		
#200	0.075	152.08	98.01	1.99	±1.27	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	192.10
Dry Soil + Can (g):	175.05
Mass of Can (g):	19.89
Moisture Loss (g):	17.05
Original Dry Mass (g):	155.16
Moisture Content (%):	**11.0**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**11.0**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-3_0

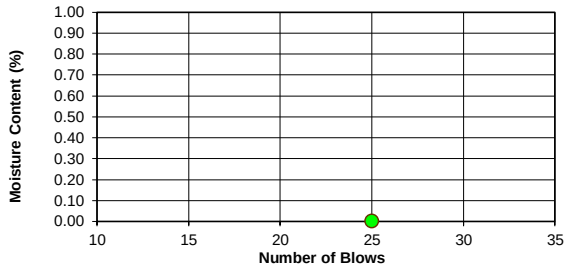
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/3/20	**TP/AH/BS Number:**	TP-4
Coordinates:	9.90150 N ; 118.82418 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.00
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

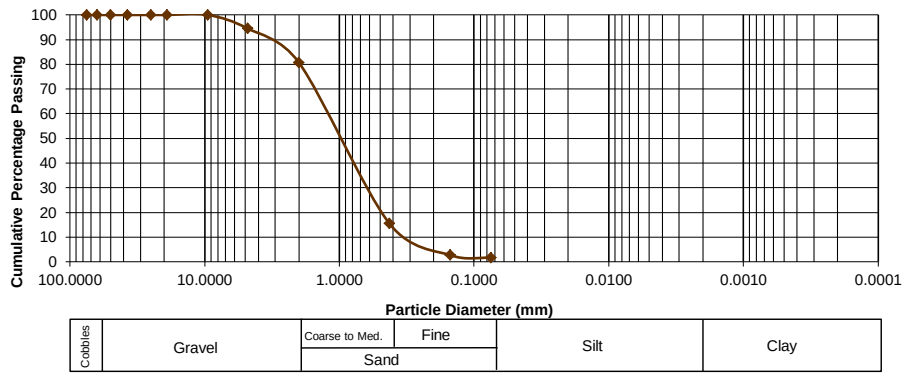


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	9.15	5.51	94.49	±0.07	1.96		
#10	2.000	32.06	19.29	80.71	±0.1	1.96		
#40	0.425	140.51	84.54	15.46	±0.68	1.96		
#100	0.150	161.77	97.33	2.67	±0.97	1.96		
#200	0.075	163.58	98.42	1.58	±1.18	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	210.01
Dry Soil + Can (g):	188.45
Mass of Can (g):	22.24
Moisture Loss (g):	21.56
Original Dry Mass (g):	166.21
Moisture Content (%):	**13.0**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**13.0**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-4_0

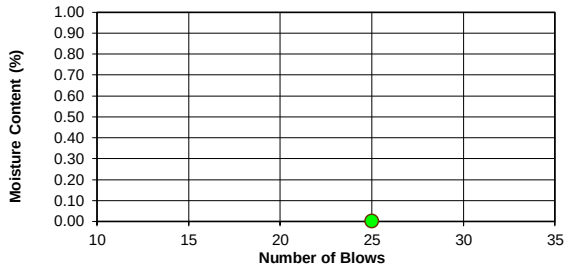
PARTICLE SIZE ANALYSIS AND ATTERBERG LIMITS (AASHTO) TEST REPORT

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Sampling Procedure/Date:	AASHTO R13-03 (2007), 7/3/20	**TP/AH/BS Number:**	TP-5
Coordinates:	9.90131 N ; 118.82405 E	**Sample ID:**	SS1
Station:	-	**Sample Depth (m):**	0.00-1.00
Date of Testing:	07/14/20		

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS - AASHTO T89-02 (2006), AASHTO T90-00 (2008)

	Multipoint Liquid Limit			Plastic Limit	
Trial Number	**1**	**2**	**3**	**1**	
Can Number	**0**	**0**	**0**	**0**	
Wet Soil + Can (g)	0.00	0.00	0.00	0.00	
Dry Soil + Can (g)	0.00	0.00	0.00	0.00	
Mass of Can (g)	0.00	0.00	0.00	0.00	
Moisture Loss (g)	0.00	0.00	0.00	0.00	
Mass of Dry Soil (g)	0.00	0.00	0.00	0.00	
Moisture Content (%)	0.00	0.00	0.00	0.00	
Number of Blows	0	0	0	**PL (%):**	**NP**
Liquid Limit (%)	**NL**				
Plasticity Index (%)	**NP**				

Figure 1. Flow Curve

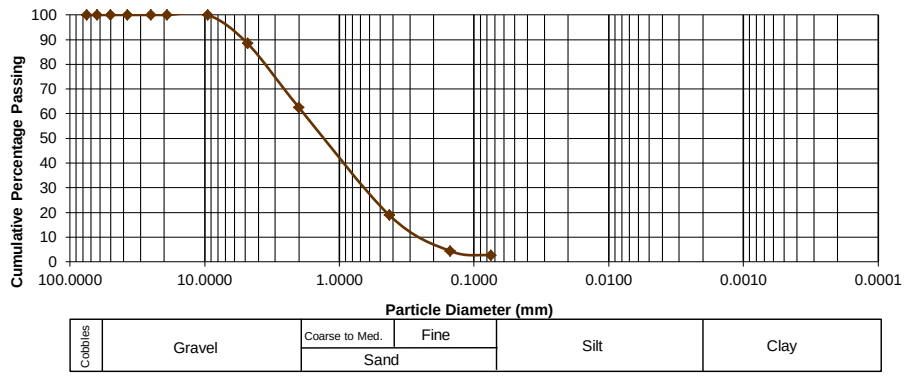


PARTICLE SIZE ANALYSIS OF SOILS - AASHTO T88-00 (2008)

Mechanical Method							Hydrometer Method	
Sieve #	**Particle Diam. (mm)**	**Cum. Mass Ret. (g)**	**Cum. % Retained**	**Cum. % Passing**	**U95**	**Coverage Factor (k)**	**Particle Diam. (mm)**	**Percent Finer (%)**
3"	75.000	0.00	0.00	100.00	-	-	-	-
2 1/2"	63.000	0.00	0.00	100.00	-	-	-	-
2"	50.000	0.00	0.00	100.00	-	-	-	-
1 1/2"	37.500	0.00	0.00	100.00	-	-	-	-
1"	25.000	0.00	0.00	100.00	-	-	-	-
3/4"	19.000	0.00	0.00	100.00	-	-	-	-
3/8"	9.500	0.00	0.00	100.00	-	-	-	-
#4	4.750	19.32	11.62	88.38	±0.07	1.96		
#10	2.000	62.33	37.48	62.52	±0.1	1.96		
#40	0.425	134.98	81.18	18.82	±0.68	1.96		
#100	0.150	159.07	95.66	4.34	±0.97	1.96		
#200	0.075	161.99	97.42	2.58	±1.18	1.96		

*for uncertainty values, refer to attached Hydrometer Test Report

Figure 2. Particle Size Distribution Curve



MOISTURE CONTENT OF SOILS - AASHTO T265-93 (2004)

Wet Soil + Can (g):	205.07
Dry Soil + Can (g):	185.87
Mass of Can (g):	19.59
Moisture Loss (g):	19.20
Original Dry Mass (g):	166.28
Moisture Content (%):	**11.5**

SUMMARY OF TEST RESULTS

Moisture Content (%):	**11.5**
U_{95}	±0.01
k	1.96
Liquid Limit (%):	**NL**
U_{95}	-
k	-
Plastic Limit (%):	**NP**
U_{95}	-
k	-
Plasticity Index (%):	**NP**
Specific Gravity: * for uncertainty value, refer to attached Specific Gravity of Soils Test Report	-
AASHTO Symbol:	**A-1-b(0)**

Soil Description:

Light Brown, SAND with Shells

Peformed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED TESTING LABORATORY

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

1911PENRO1_RPATA_TP-5_0

APPENDIX C: MOISTURE DENSITY RELATION & CALIFORNIA BEARING RATIO TEST REPORTS

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Sampling:	07/03/20	**TP/BS Number:**	TP-1
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.901693 N ; 118.823893 E	**Layer Depth (m):**	0.00-1.00
Station:	-	**Date of Testing:**	07/17/20

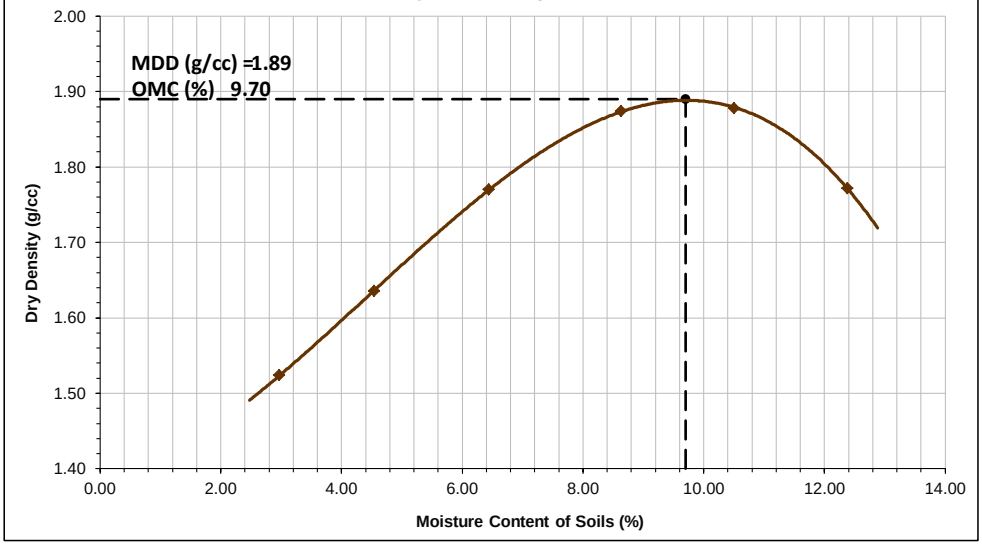
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO32**	**FO412**	**T3N**	**UGP**	**FO546**	**FO315**	**FO466**	**FO550**	**FAX32**	**FO358**	**FO405**	**FO403**
Wet Soil + Can (g)	163.03	167.35	174.55	157.60	154.44	151.79	167.82	154.15	160.10	159.26	168.70	172.90
Dry Soil + Can (g)	158.88	163.10	168.05	151.63	146.48	143.63	156.19	143.37	146.69	146.01	152.39	155.91
Mass of Can (g)	19.56	19.75	22.11	22.57	20.04	19.83	19.90	19.91	18.99	19.90	19.67	19.71
Moisture Loss (g)	4.15	4.25	6.50	5.97	7.96	8.16	11.63	10.78	13.41	13.25	16.31	16.99
Mass of Dry Soil (g)	139.32	143.35	145.94	129.06	126.44	123.80	136.29	123.46	127.70	126.11	132.72	136.20
Moisture Content (%)	2.98	2.96	4.45	4.63	6.30	6.59	8.53	8.73	10.50	10.51	12.29	12.47
Average Moisture (%)	**2.97**		**4.54**		**6.44**		**8.63**		**10.50**		**12.38**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**
Wet Soil + Mold (g)	4,500.00	4,625.00	4,780.00	4,915.00	4,950.00	4,875.00
Mass of Mold (g)	3,105.00	3,105.00	3,105.00	3,105.00	3,105.00	3,105.00
Mass of Wet Soil (g)	1,395.00	1,520.00	1,675.00	1,810.00	1,845.00	1,770.00
Volume of Mold (cc)	889.00	889.00	889.00	889.00	889.00	889.00
Wet Density (g/cc)	**1.57**	**1.71**	**1.88**	**2.04**	**2.08**	**1.99**
Dry Density (g/cc)	**1.52**	**1.64**	**1.77**	**1.87**	**1.88**	**1.77**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.89**
Opt. Moisture Content (%):	**9.70**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-1_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-1
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.00
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.901693 N ; 118.823893 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**DF5**	**DSW**	**AQW**	**DC**	**F3G**	**E7G**
Wet Soil + Can (g)	174.59	154.89	173.20	155.08	167.98	150.45
Dry Soil + Can (g)	161.09	143.49	159.54	143.49	154.89	139.31
Mass of Can (g)	24.57	23.58	21.45	22.01	22.34	22.46
Moisture Loss (g)	13.50	11.40	13.66	11.59	13.09	11.14
Mass of Dry Soil (g)	136.51	119.91	138.09	121.48	132.55	116.85
Moisture Content (%)	9.89	9.51	9.89	9.54	9.88	9.53
Average Moisture (%)	**9.70**		**9.72**		**9.70**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-42**	**CBR-45**	**CBR-47**
Wet Soil + Mold (g)	10630.00	10700.00	11090.00
Mass of Mold (g)	6300.00	6170.00	6300.00
Mass of Wet Soil (g)	4330.00	4530.00	4790.00
Volume of Mold (cc)	2215.00	2228.00	2252.62
Wet Density (g/cc)	**1.95**	**2.03**	**2.13**
Dry Density (g/cc)	**1.78**	**1.85**	**1.94**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	2.39	2.04	1.77
Reading After Soaking ($x10^{-1}$ mm)	3.92	3.33	2.9
Swell (%)	**1.31**	**1.11**	**0.97**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	27.90	34.88	43.60	1.44	1.80	2.25			
1.27	48.83	61.04	76.30	2.52	3.15	3.93			
1.91	65.57	81.97	102.46	3.38	4.23	5.28			
2.54	76.74	95.92	119.90	3.96	4.94	6.18	**5.62**	**7.03**	**8.79**
3.81	92.08	115.10	143.88	4.75	5.93	7.42			
5.08	100.45	125.57	156.96	5.18	6.47	8.09	**4.93**	**6.16**	**7.71**
7.62	110.22	137.78	172.22	5.68	7.10	8.88			
10.16	115.80	144.75	180.94	5.97	7.46	9.33			
12.70	119.99	149.98	187.48	6.18	7.73	9.66			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

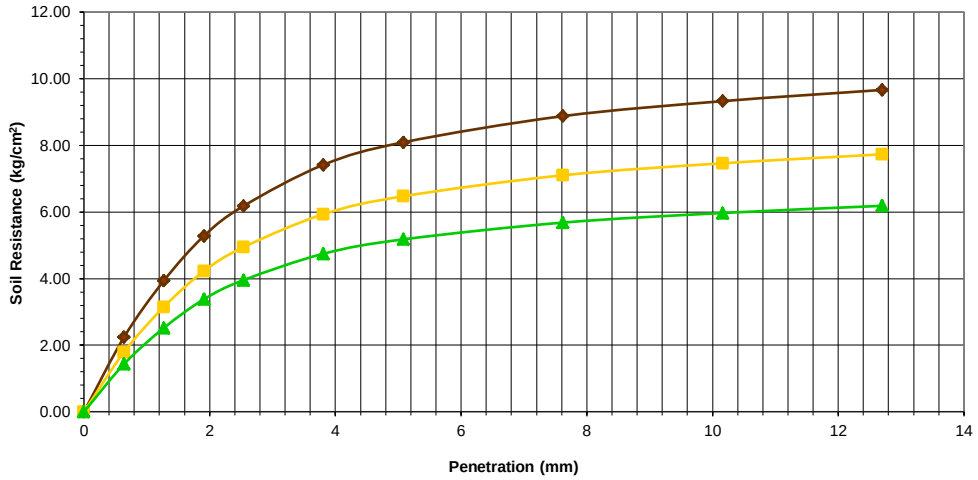
1911PENRO1_RCBRT_TP-1_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

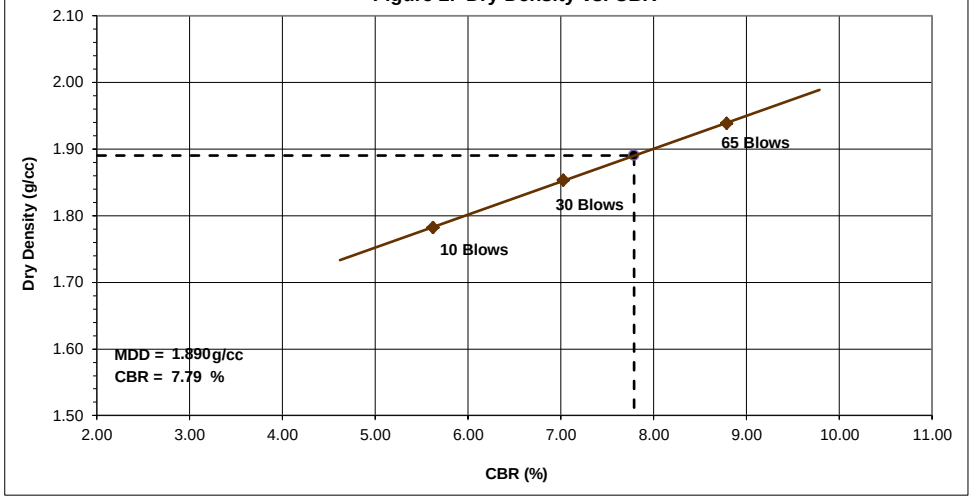
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-1
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.00
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.901693 N ; 118.823893 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	1.955	4.93
30	2.033	6.16
65	2.126	7.71

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.890	7.79
95	1.796	5.89

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

R-CBRT v.1 - *VS Adriano Civil Engineering Consultancy Services. #20-B Karilagan Street Dona Damiana Village, Rosario Pasig. +63(2) 655-80-69*

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Sampling:	07/03/20	**TP/BS Number:**	TP-2
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90154 N ; 118.82377 E	**Layer Depth (m):**	0.00-1.00
Station:	-	**Date of Testing:**	07/17/20

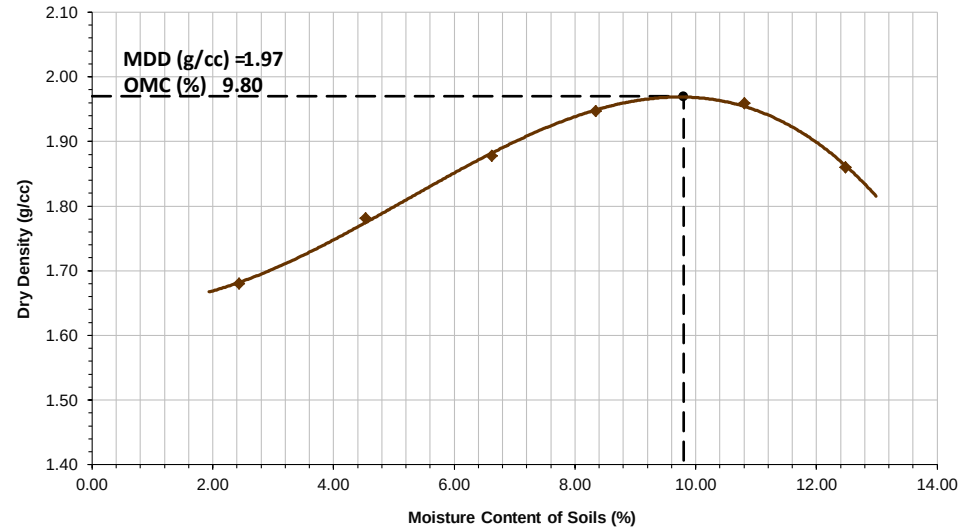
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO-311**	**FO-529**	**FO-504**	**FO-475**	**FO397**	**FO320**	**FO365**	**FO510**	**FO458**	**FO544**	**FO280**	**FO480**
Wet Soil + Can (g)	160.49	157.59	163.10	174.41	154.12	150.23	163.50	168.51	153.39	161.86	197.40	184.19
Dry Soil + Can (g)	157.27	154.20	156.93	167.63	145.77	142.12	152.55	156.94	140.22	147.96	177.58	165.98
Mass of Can (g)	20.00	20.10	19.76	19.56	19.92	19.68	19.84	19.98	17.88	20.01	19.11	19.92
Moisture Loss (g)	3.22	3.39	6.17	6.78	8.35	8.11	10.95	11.57	13.17	13.90	19.82	18.21
Mass of Dry Soil (g)	137.27	134.10	137.17	148.07	125.85	122.44	132.71	136.96	122.34	127.95	158.47	146.06
Moisture Content (%)	2.35	2.53	4.50	4.58	6.63	6.62	8.25	8.45	10.77	10.86	12.51	12.47
Average Moisture (%)	**2.44**		**4.54**		**6.63**		**8.35**		**10.81**		**12.49**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**	**NMDR-2**
Wet Soil + Mold (g)	4,680.00	4,805.00	4,930.00	5,025.00	5,080.00	5,010.00
Mass of Mold (g)	3,150.00	3,150.00	3,150.00	3,150.00	3,150.00	3,150.00
Mass of Wet Soil (g)	1,530.00	1,655.00	1,780.00	1,875.00	1,930.00	1,860.00
Volume of Mold (cc)	889.00	889.00	889.00	889.00	889.00	889.00
Wet Density (g/cc)	**1.72**	**1.86**	**2.00**	**2.11**	**2.17**	**2.09**
Dry Density (g/cc)	**1.68**	**1.78**	**1.88**	**1.95**	**1.96**	**1.86**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.97**
Opt. Moisture Content (%):	**9.80**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-2_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-2
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.00
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90154 N ; 118.82377 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**JUH**	**GFT**	**NBH**	**VF**	**PSA77**	**FO-424**
Wet Soil + Can (g)	151.37	181.02	151.49	186.95	154.55	181.22
Dry Soil + Can (g)	139.38	167.03	139.38	172.04	142.22	167.03
Mass of Can (g)	19.95	21.66	18.43	17.88	19.00	19.87
Moisture Loss (g)	11.99	13.99	12.11	14.91	12.33	14.19
Mass of Dry Soil (g)	119.43	145.37	120.95	154.16	123.22	147.16
Moisture Content (%)	10.04	9.62	10.02	9.67	10.01	9.64
Average Moisture (%)	**9.83**		**9.84**		**9.82**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-29**	**CBR-30**	**CBR-31**
Wet Soil + Mold (g)	11040.00	11690.00	11840.00
Mass of Mold (g)	6560.00	6970.00	6835.00
Mass of Wet Soil (g)	4480.00	4720.00	5005.00
Volume of Mold (cc)	2192.00	2214.00	2254.06
Wet Density (g/cc)	**2.04**	**2.13**	**2.22**
Dry Density (g/cc)	**1.86**	**1.94**	**2.02**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	1.74	1.48	1.29
Reading After Soaking ($x10^{-1}$ mm)	3.23	2.75	2.39
Swell (%)	**1.28**	**1.09**	**0.94**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	12.56	15.70	19.62	0.65	0.81	1.01			
1.27	22.32	27.90	34.88	1.15	1.44	1.80			
1.91	29.30	36.62	45.78	1.51	1.89	2.36			
2.54	34.88	43.60	54.50	1.80	2.25	2.81	**2.56**	**3.20**	**3.99**
3.81	40.46	50.58	63.22	2.09	2.61	3.26			
5.08	43.95	54.94	68.67	2.27	2.83	3.54	**2.16**	**2.70**	**3.37**
7.62	48.13	60.17	75.21	2.48	3.10	3.88			
10.16	51.62	64.53	80.66	2.66	3.33	4.16			
12.70	54.41	68.02	85.02	2.80	3.51	4.38			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

1911PENRO1_RCBRT_TP-2_0

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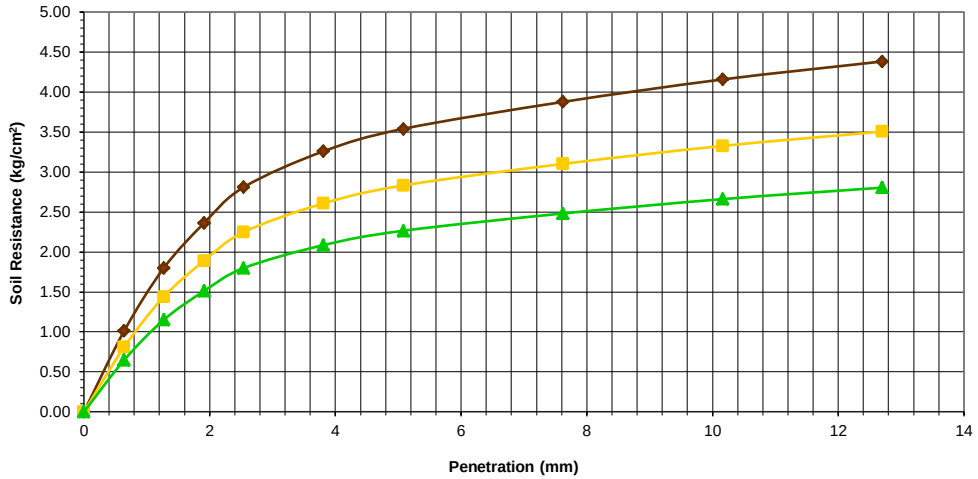
CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

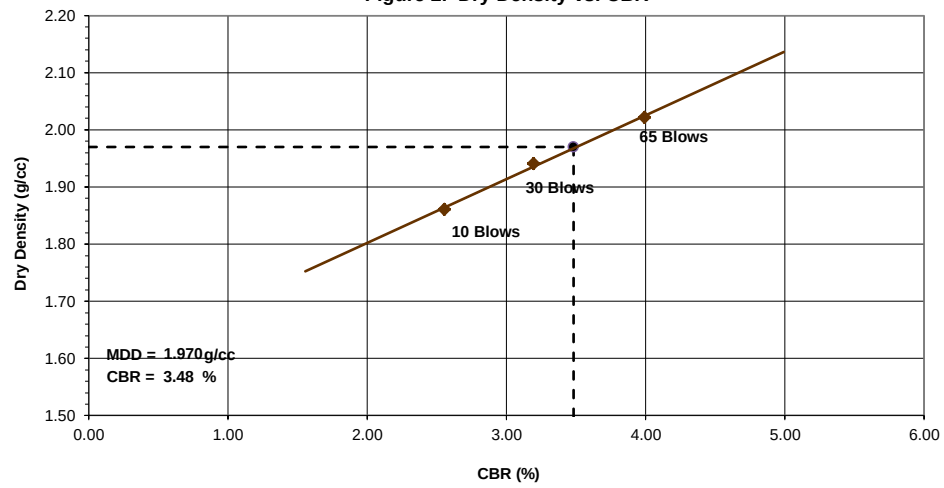
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-2
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.00
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90154 N ; 118.82377 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	2.044	2.16
30	2.132	2.70
65	2.220	3.37

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.970	3.48
95	1.872	2.64

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

R-CBRT v.1 - *VS Adriano Civil Engineering Consultancy Services. #20-B Karilagan Street Dona Damiana Village, Rosario Pasig. +63(2) 655-80-69*

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Sampling:	07/03/20	**TP/BS Number:**	TP-3
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90153 N ; 118.82391 E	**Layer Depth (m):**	0.00-1.00
Station:	-	**Date of Testing:**	07/17/20

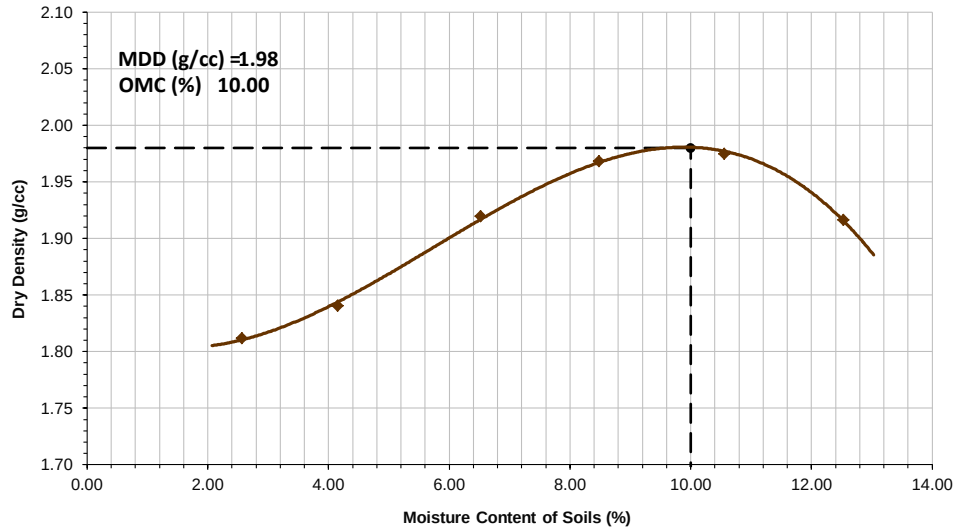
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**FO-151**	**FO-352**	**FO-237**	**FO-438**	**FO329**	**FO106**	**FO150**	**FO-102**	**FO-394**	**FO-205**	**FO-453**	**FO-427**
Wet Soil + Can (g)	171.64	164.37	161.60	178.96	185.56	163.72	176.64	187.02	176.69	161.69	163.31	187.21
Dry Soil + Can (g)	168.21	160.40	155.97	172.56	176.05	154.34	164.21	174.12	161.93	147.97	147.72	168.08
Mass of Can (g)	20.13	19.58	19.46	19.70	19.99	19.41	19.78	19.93	19.69	20.30	19.61	19.73
Moisture Loss (g)	3.43	3.97	5.63	6.40	9.51	9.38	12.43	12.90	14.76	13.72	15.59	19.13
Mass of Dry Soil (g)	148.08	140.82	136.51	152.86	156.06	134.93	144.43	154.19	142.24	127.67	128.11	148.35
Moisture Content (%)	2.32	2.82	4.12	4.19	6.09	6.95	8.61	8.37	10.38	10.75	12.17	12.90
Average Moisture (%)	**2.57**		**4.16**		**6.52**		**8.49**		**10.56**		**12.53**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**
Wet Soil + Mold (g)	5,195.00	5,250.00	5,370.00	5,455.00	5,500.00	5,475.00
Mass of Mold (g)	3,450.00	3,450.00	3,450.00	3,450.00	3,450.00	3,450.00
Mass of Wet Soil (g)	1,745.00	1,800.00	1,920.00	2,005.00	2,050.00	2,025.00
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	939.00
Wet Density (g/cc)	**1.86**	**1.92**	**2.04**	**2.14**	**2.18**	**2.16**
Dry Density (g/cc)	**1.81**	**1.84**	**1.92**	**1.97**	**1.97**	**1.92**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.98**
Opt. Moisture Content (%):	**10.00**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-3_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-3
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.00
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90153 N ; 118.82391 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**MK**	**NB**	**HG**	**UY**	**FO212**	**FO177**
Wet Soil + Can (g)	165.85	174.59	162.42	178.16	167.41	180.03
Dry Soil + Can (g)	152.29	160.65	149.22	163.96	153.83	165.62
Mass of Can (g)	19.38	19.87	19.38	19.29	19.78	19.29
Moisture Loss (g)	13.56	13.94	13.20	14.20	13.58	14.41
Mass of Dry Soil (g)	132.91	140.78	129.83	144.67	134.05	146.33
Moisture Content (%)	10.20	9.90	10.17	9.81	10.13	9.85
Average Moisture (%)	**10.05**		**9.99**		**9.99**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-48**	**CBR-50**	**CBR-51**
Wet Soil + Mold (g)	11210.00	11090.00	11320.00
Mass of Mold (g)	6660.00	6400.00	6340.00
Mass of Wet Soil (g)	4550.00	4690.00	4980.00
Volume of Mold (cc)	2217.00	2200.00	2236.38
Wet Density (g/cc)	**2.05**	**2.13**	**2.23**
Dry Density (g/cc)	**1.86**	**1.94**	**2.02**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	2.01	1.71	1.49
Reading After Soaking ($x10^{-1}$ mm)	2.84	2.42	2.1
Swell (%)	**0.71**	**0.61**	**0.52**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	11.75	16.79	23.98	0.61	0.87	1.24			
1.27	20.30	28.99	41.42	1.05	1.49	2.14			
1.91	25.64	36.62	52.32	1.32	1.89	2.70			
2.54	29.38	41.97	59.95	1.51	2.16	3.09	**2.15**	**3.08**	**4.39**
3.81	34.18	48.83	69.76	1.76	2.52	3.60			
5.08	37.39	53.41	76.30	1.93	2.75	3.93	**1.84**	**2.62**	**3.75**
7.62	40.59	57.99	82.84	2.09	2.99	4.27			
10.16	42.73	61.04	87.20	2.20	3.15	4.49			
12.70	44.86	64.09	91.56	2.31	3.30	4.72			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

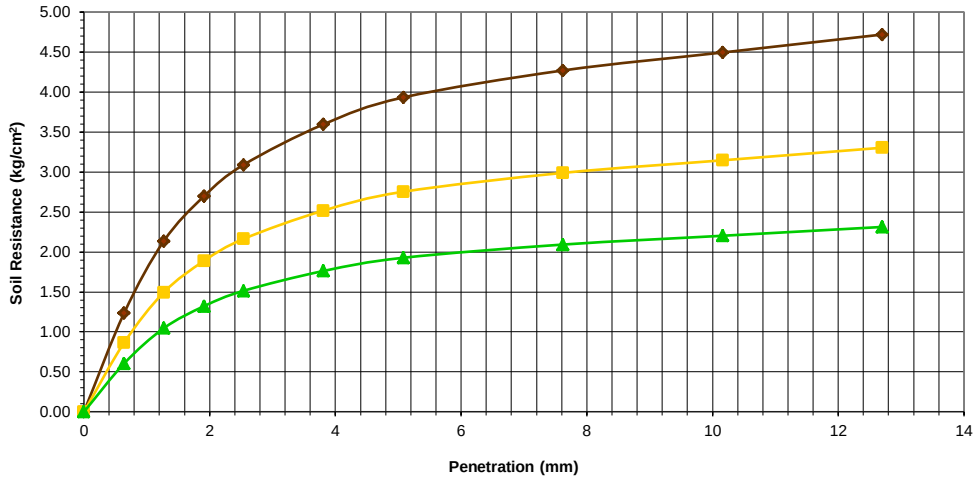
1911PENRO1_RCBRT_TP-3_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

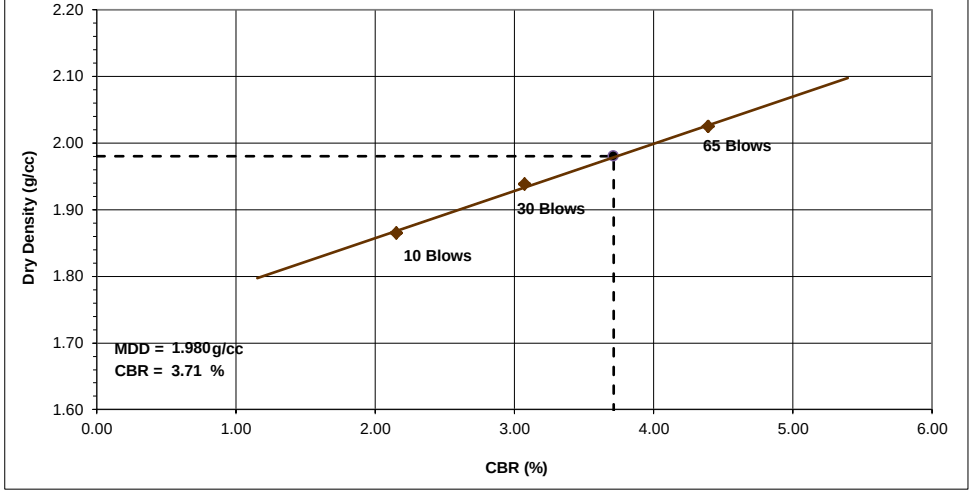
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-3
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.00
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90153 N ; 118.82391 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	2.052	1.84
30	2.132	2.62
65	2.227	3.75

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.980	3.71
95	1.881	2.36

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

R-CBRT v.1 - *VS Adriano Civil Engineering Consultancy Services. #20-B Karilagan Street Dona Damiana Village, Rosario Pasig. +63(2) 655-80-69*

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Sampling:	07/03/20	**TP/BS Number:**	TP-4
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90150 N ; 118.82418 E	**Layer Depth (m):**	0.00-1.00
Station:	-	**Date of Testing:**	07/17/20

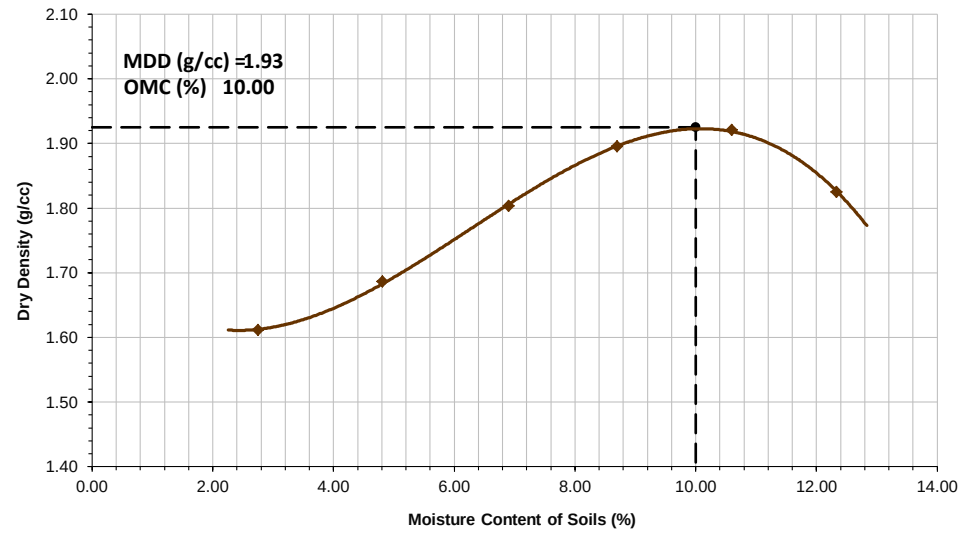
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**O4P**	**H2T**	**FO-81**	**FO-77**	**FO-263**	**FO-04**	**FO-128**	**AG-44**	**ROS-60**	**FO-134**	**FO-30**	**FO-187**
Wet Soil + Can (g)	160.53	171.82	162.64	179.35	172.42	162.62	163.32	174.80	175.11	190.91	182.36	188.71
Dry Soil + Can (g)	156.93	167.70	156.23	171.82	162.45	153.45	151.75	162.44	160.06	174.54	164.54	170.05
Mass of Can (g)	22.10	22.58	19.48	19.64	19.43	19.39	19.52	19.70	18.75	19.44	19.36	19.49
Moisture Loss (g)	3.60	4.12	6.41	7.53	9.97	9.17	11.57	12.36	15.05	16.37	17.82	18.66
Mass of Dry Soil (g)	134.83	145.12	136.75	152.18	143.02	134.06	132.23	142.74	141.31	155.10	145.18	150.56
Moisture Content (%)	2.67	2.84	4.69	4.95	6.97	6.84	8.75	8.66	10.65	10.55	12.27	12.39
Average Moisture (%)	**2.75**		**4.82**		**6.91**		**8.70**		**10.60**		**12.33**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**
Wet Soil + Mold (g)	5,000.00	5,105.00	5,255.00	5,380.00	5,440.00	5,370.00
Mass of Mold (g)	3,445.00	3,445.00	3,445.00	3,445.00	3,445.00	3,445.00
Mass of Wet Soil (g)	1,555.00	1,660.00	1,810.00	1,935.00	1,995.00	1,925.00
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	939.00
Wet Density (g/cc)	**1.66**	**1.77**	**1.93**	**2.06**	**2.12**	**2.05**
Dry Density (g/cc)	**1.61**	**1.69**	**1.80**	**1.90**	**1.92**	**1.82**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.93**
Opt. Moisture Content (%):	**10.00**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-4_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-4
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.00
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90150 N ; 118.82418 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**JY**	**HG**	**TR**	**VC**	**FO-451**	**FO-503**
Wet Soil + Can (g)	150.56	164.34	166.91	167.69	160.33	164.37
Dry Soil + Can (g)	138.45	151.45	153.18	154.48	147.29	151.45
Mass of Can (g)	19.03	19.78	17.66	20.38	19.62	20.18
Moisture Loss (g)	12.11	12.89	13.73	13.21	13.04	12.92
Mass of Dry Soil (g)	119.42	131.67	135.52	134.10	127.67	131.27
Moisture Content (%)	10.14	9.79	10.13	9.85	10.21	9.84
Average Moisture (%)	**9.96**		**9.99**		**10.03**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-47**	**CBR-48**	**CBR-50**
Wet Soil + Mold (g)	10670.00	11070.00	11180.00
Mass of Mold (g)	6380.00	6570.00	6315.00
Mass of Wet Soil (g)	4290.00	4500.00	4865.00
Volume of Mold (cc)	2154.00	2169.00	2248.16
Wet Density (g/cc)	**1.99**	**2.07**	**2.16**
Dry Density (g/cc)	**1.81**	**1.89**	**1.97**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	1.88	1.6	1.39
Reading After Soaking ($x10^{-1}$ mm)	3.71	3.16	2.75
Swell (%)	**1.57**	**1.34**	**1.17**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	12.56	15.70	19.62	0.65	0.81	1.01			
1.27	21.63	27.03	33.79	1.11	1.39	1.74			
1.91	28.60	35.75	44.69	1.47	1.84	2.30			
2.54	33.48	41.86	52.32	1.73	2.16	2.70	**2.45**	**3.07**	**3.83**
3.81	39.07	48.83	61.04	2.01	2.52	3.15			
5.08	41.86	52.32	65.40	2.16	2.70	3.37	**2.05**	**2.57**	**3.21**
7.62	46.04	57.55	71.94	2.37	2.97	3.71			
10.16	48.83	61.04	76.30	2.52	3.15	3.93			
12.70	51.62	64.53	80.66	2.66	3.33	4.16			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

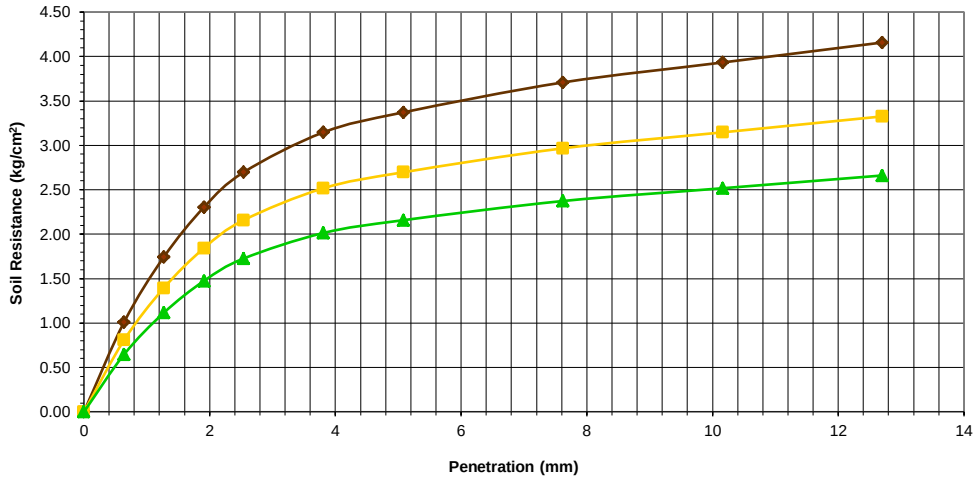
1911PENRO1_RCBRT_TP-4_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

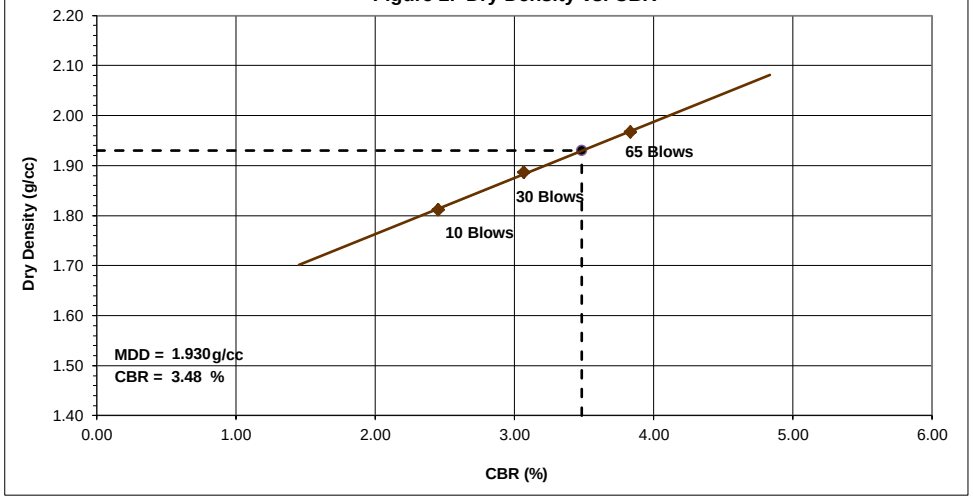
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-4
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.00
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90150 N ; 118.82418 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	1.992	2.05
30	2.075	2.57
65	2.164	3.21

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.930	3.48
95	1.834	2.64

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

1911PENRO1_RCBRT_TP-4_0

MOISTURE DENSITY RELATION TEST REPORT

AASHTO T99-10/AASHTO T180-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFI	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION		
Date of Sampling:	07/03/20	**TP/BS Number:**	TP-5
Sampling Procedure:	AASHTO R13-03 (2007)	**Sample ID:**	SS1
Coordinates:	9.90131 N ; 118.82405 E	**Layer Depth (m):**	0.00-1.00
Station:	-	**Date of Testing:**	07/17/20

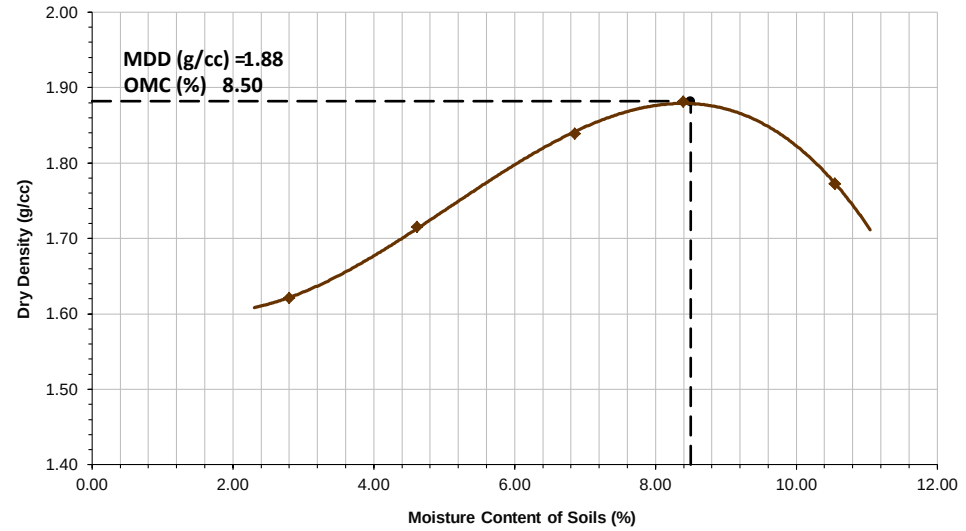
MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

Trial Number	**1**		**2**		**3**		**4**		**5**		**6**	
Can Number	**TEL-96**	**FO-556**	**FO-389**	**FO-16**	**TW-48**	**FO-69**	**FO-509**	**AG-20**	**FO-169**	**FO-462**	**-**	**-**
Wet Soil + Can (g)	170.99	155.68	183.00	168.42	155.64	168.29	191.61	169.91	187.01	177.62	-	-
Dry Soil + Can (g)	166.61	152.19	175.43	162.18	146.92	158.73	178.31	158.17	171.18	162.42	-	-
Mass of Can (g)	19.11	19.56	19.77	19.60	19.75	19.46	19.80	18.49	19.47	19.95	-	-
Moisture Loss (g)	4.38	3.49	7.57	6.24	8.72	9.56	13.30	11.74	15.83	15.20	-	-
Mass of Dry Soil (g)	147.50	132.63	155.66	142.58	127.17	139.27	158.51	139.68	151.71	142.47	-	-
Moisture Content (%)	2.97	2.63	4.86	4.38	6.86	6.86	8.39	8.40	10.43	10.67	-	-
Average Moisture (%)	**2.80**		**4.62**		**6.86**		**8.40**		**10.55**		**-**	

DENSITY DETERMINATION

Trial Number	**1**	**2**	**3**	**4**	**5**	**6**
Mold Number	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**NMDR-1**	**-**
Wet Soil + Mold (g)	5,010.00	5,130.00	5,290.00	5,360.00	5,285.00	-
Mass of Mold (g)	3,445.00	3,445.00	3,445.00	3,445.00	3,445.00	-
Mass of Wet Soil (g)	1,565.00	1,685.00	1,845.00	1,915.00	1,840.00	-
Volume of Mold (cc)	939.00	939.00	939.00	939.00	939.00	-
Wet Density (g/cc)	**1.67**	**1.79**	**1.96**	**2.04**	**1.96**	**-**
Dry Density (g/cc)	**1.62**	**1.72**	**1.84**	**1.88**	**1.77**	**-**

Figure 1. Compaction Curve



Test Method:

METHOD C

Mass of Hammer:

4.52 KG

Maximum Dry Density (g/cc)	**1.88**
Opt. Moisture Content (%):	**8.50**

Performed by: DANILO DELAN
Senior Laboratory Technician

DPWH-BRS ACCREDITED

Approved by: REMEDIOS O. SOLDAO
Head of Engineering Department

1911PENRO1_RMDRT_TP-5_0

CALIFORNIA BEARING RATIO TEST REPORT

AASHTO T193-10

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**TP/BS Number:**	TP-5
Project Location:	PUERTO PRINCESA			**Sample ID:**	SS1
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Layer Depth (m):**	0.00-1.00
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Coordinates:**	9.90131 N ; 118.82405 E
Consultant:	-	**Contact Number:**	-	**Station:**	-
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

MOISTURE CONTENT OF SOILS DETERMINATION - AASHTO T265-93 (2008)

	10 Blows		30 Blows		65 Blows	
	Before Compaction	After Compaction	Before Compaction	After Compaction	Before Compaction	After Compaction
Can Number	**NHB**	**MHN**	**MJK**	**VCF**	**AG-45**	**AG-97**
Wet Soil + Can (g)	127.32	150.35	134.33	151.74	140.05	151.86
Dry Soil + Can (g)	118.68	140.25	125.20	141.67	130.42	141.67
Mass of Can (g)	18.27	18.96	19.79	20.53	19.03	19.55
Moisture Loss (g)	8.63	10.10	9.13	10.07	9.63	10.19
Mass of Dry Soil (g)	100.41	121.29	105.41	121.14	111.39	122.12
Moisture Content (%)	8.60	8.32	8.66	8.31	8.65	8.34
Average Moisture (%)	**8.46**		**8.49**		**8.49**	

DENSITY DETERMINATION

	10 Blows	30 Blows	65 Blows
Mold Number	**CBR-2**	**CBR-3**	**CBR-4**
Wet Soil + Mold (g)	10800.00	10590.00	10930.00
Mass of Mold (g)	6610.00	6230.00	6295.00
Mass of Wet Soil (g)	4190.00	4360.00	4635.00
Volume of Mold (cc)	2187.00	2188.00	2227.44
Wet Density (g/cc)	**1.92**	**1.99**	**2.08**
Dry Density (g/cc)	**1.77**	**1.84**	**1.92**

SWELL DETERMINATION

	10 Blows	30 Blows	65 Blows
Reading Before Soaking ($x10^{-1}$ mm)	3	2.55	2.22
Reading After Soaking ($x10^{-1}$ mm)	4.06	3.46	3.01
Swell (%)	**0.91**	**0.78**	**0.68**

LOAD-PENETRATION DETERMINATION

Penetration (mm)	Load Reading (kgs.) Blows			Soil Resistance (kg/cm^2) Blows			CBR (%) Blows		
	10	30	65	10	30	65	10	30	65
0.64	11.16	13.95	17.44	0.58	0.72	0.90			
1.27	19.53	24.42	30.52	1.01	1.26	1.57			
1.91	25.11	31.39	39.24	1.29	1.62	2.02			
2.54	29.30	36.62	45.78	1.51	1.89	2.36	**2.15**	**2.68**	**3.36**
3.81	34.88	43.60	54.50	1.80	2.25	2.81			
5.08	37.67	47.09	58.86	1.94	2.43	3.03	**1.85**	**2.31**	**2.89**
7.62	41.16	51.45	64.31	2.12	2.65	3.31			
10.16	43.25	54.06	67.58	2.23	2.79	3.48			
12.70	44.65	55.81	69.76	2.30	2.88	3.60			

LRC (Kg/div):	2.18
Area of Piston (cm^2):	19.40

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

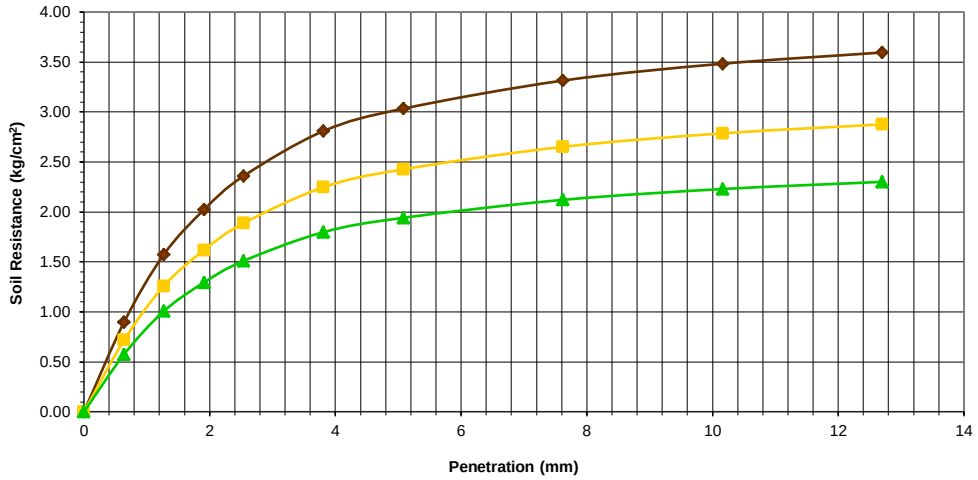
1911PENRO1_RCBRT_TP-5_0

CALIFORNIA BEARING RATIO TEST REPORT (CONTINUATION)

AASHTO T193-10

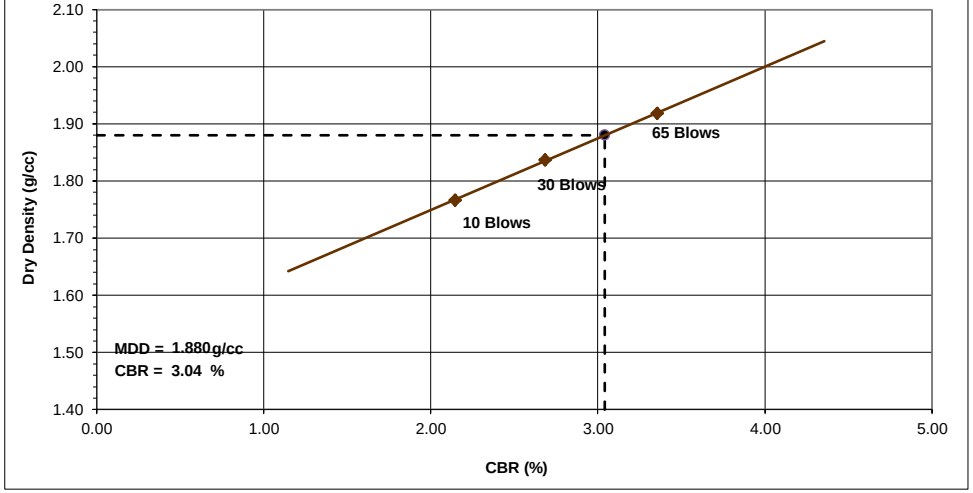
Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH			**Test Pit Number:**	TP-5
Project Location:	PUERTO PRINCESA			**Layer Depth (m) :**	0.00-1.00
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCE	**Project Reference #:**	1911PENRO1	**Coordinates:**	9.90131 N ; 118.82405 E
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN			**Station:**	-
Consultant:	-	**Contact Number:**	-		
Sampling Location:	SNAKE ISLAND - 2ND LOCATION			**Date of Sampling:**	07/03/20
Sampling Procedure:	AASHTO R13-03 (2007)			**Date of Testing:**	07/20/20

Figure 1. Soil Resistance vs. Penetration



BLOWS	WET DENSITY (g/cc)	CBR (%)
10	1.916	1.85
30	1.993	2.31
65	2.081	2.89

Figure 2. Dry Density vs. CBR



% MDD	DRY DENSITY (g/cc)	CBR (%)
100	1.880	3.04
95	1.786	2.30

Performed by: DANILO DELAN
Senior Laboratory Technician

Approved by: REMEDIOS SOLDAO
Head of Engineering Department

DPWH-BRS ACCREDITED TESTING LABORATORY

R-CBRT v.1 - *VS Adriano Civil Engineering Consultancy Services. #20-B Karilagan Street Dona Damiana Village, Rosario Pasig. +63(2) 655-80-69*

APPENDIX D: PHOTOGRAPHS

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA, PALAWAN		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES C	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

TEST PIT 1
SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/20
STATION: -
COORDINATES: 9.901693 N ; 118.823893 E
SITE TOPOGRAPHY: FLAT

Figure 1.1 Panoramic View

Figure 1.2 Test Pit 1

TEST PIT 2
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/20
STATION: -
COORDINATES: 9.90154 N ; 118.82377 E
SITE TOPOGRAPHY: FLAT

Figure 2.1 Panoramic View

Figure 2.2 Test Pit 2

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED
TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA, PALAWAN		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES C	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

TEST PIT 3
SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/20
STATION: -
COORDINATES: 9.90154 N ; 118.823910 E
SITE TOPOGRAPHY: FLAT

Figure 3.1 Panoramic View

Figure 3.2 Test Pit 3

TEST PIT 4
SAMPLING LOCATION: SNAKE ISLAND - 1ST LOCATION
DATE OF SAMPLING: 7/3/20
STATION: -
COORDINATES: 9.90150 N ; 119.82418 E
SITE TOPOGRAPHY: FLAT

Figure 4.1 Panoramic View

Figure 4.2 Test Pit 4

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED
TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

PHOTOGRAPHS

Project Name:	GEOTECHNICAL INVESTIGATION OF SNAKE ISLAND AS THE NATIONAL COASTAL AND MARINE CENTER FOR RESEARCH		
Project Location:	PUERTO PRINCESA, PALAWAN		
Client:	PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES C	**Project Reference #:**	1911PENRO1
Client's Address:	BRGY. STA. MONICA, PUERTO PRINCESA CITY, PALAWAN		
Consultant:	-	**Contact Number:**	-

TEST PIT 5
SAMPLING LOCATION: SNAKE ISLAND - 2ND LOCATION
DATE OF SAMPLING: 7/3/20
STATION: -
COORDINATES: 9.90131 N ; 118.82405 E
SITE TOPOGRAPHY: FLAT

Figure 5.1 Panoramic View

Figure 5.2 Test Pit 5

Photographed by: RODELITO PODADOR
Field Supervisor

DPWH-BRS ACCREDITED
TESTING LABORATORY

Approved by: REMEDIOS O SOLDAO
Head of Engineering Department

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