UNIVERSITY OF GUAM
UNIBETSEDÅT GUÅHAN

ADMINISTRATION & FINANCE
Consolidated Procurement Office

AMENDMENT 2

REQUEST FOR PROPOSALS
UOG RFP No. P22-02

Date Issued: March 17, 2022

"DESIGN BUILD CONSTRUCTION SERVICES FOR A NEW SCHOOL OF ENGINEERING"

This is to notify all prospective offerors of the following amendment set forth below:

1.1 **ADD** ATTACHMENT 2-1 SITE DEVELOPMENT PLAN for the new SENG Site (near the future site of the new WERI facility being designed by RIM Architects) as EXHIBIT A set forth in the attached.
1.2 **ADD** ATTACHMENT 2-2 SURVEY TOPO provided by SSFM International as EXHIBIT B set forth in the attached.
1.3 **ADD** ATTACHMENT 2-3 EASEMENT OUTLINE on Survey Topo map provided by SSFM as EXHIBIT C set forth in the attached.
1.4 **ADD** ATTACHMENT 2-4 SOIL REPORT (March 9, 2022) provided by SSFM International as EXHIBIT D set forth in the attached.
1.5 Pre-Proposal Conference Minutes for reference as set forth in the attached.

Type text

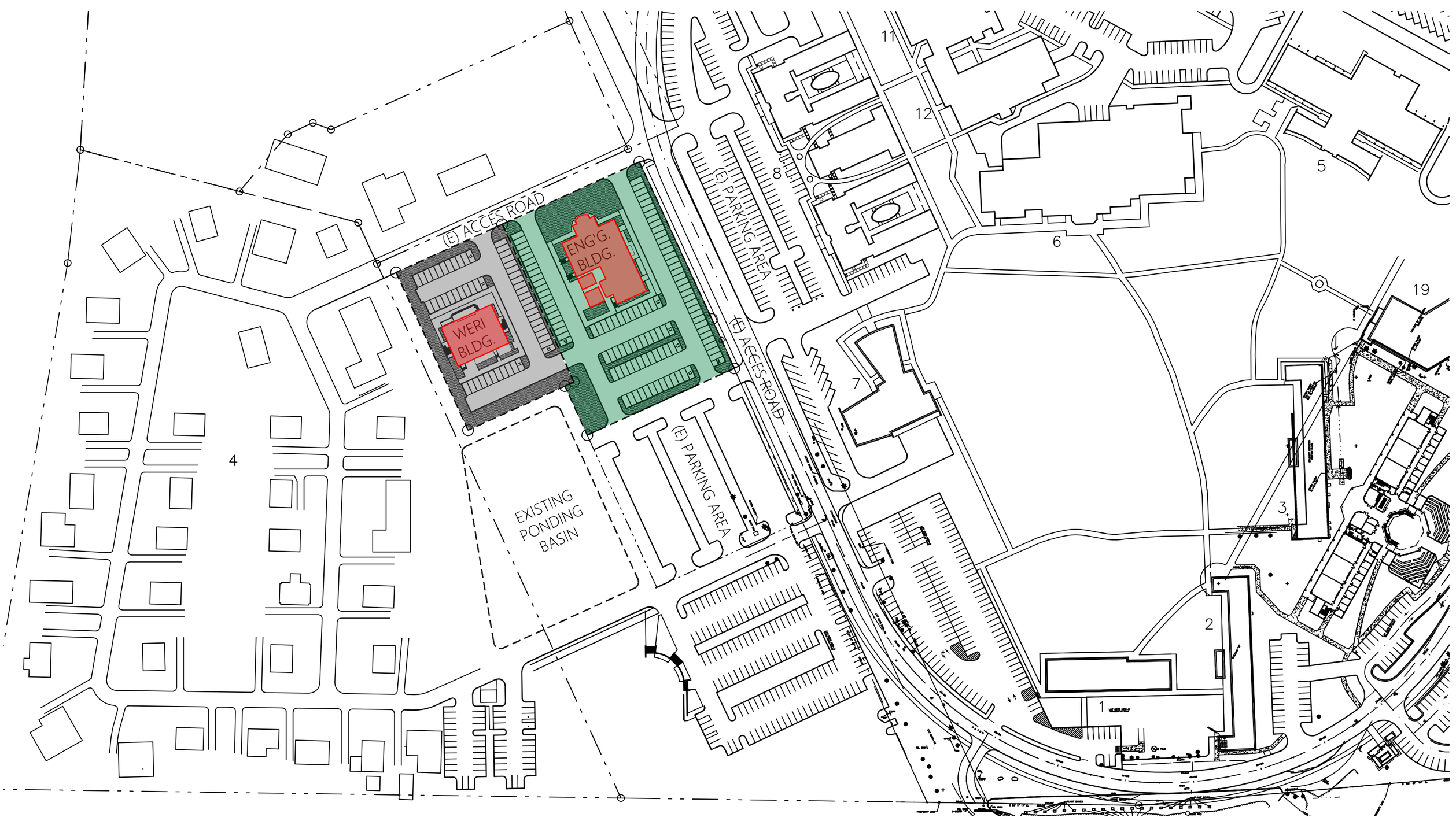
All other terms and conditions remain the same.

Emily G. Gumataotao
Supply Management Administrator

Please acknowledge receipt and return by email to uog.bids@triton.uog.edu:

Name of company: _____

_____
Print Name/Signature/date



SITE DEVELOPMENT PLAN_SCHEME 02

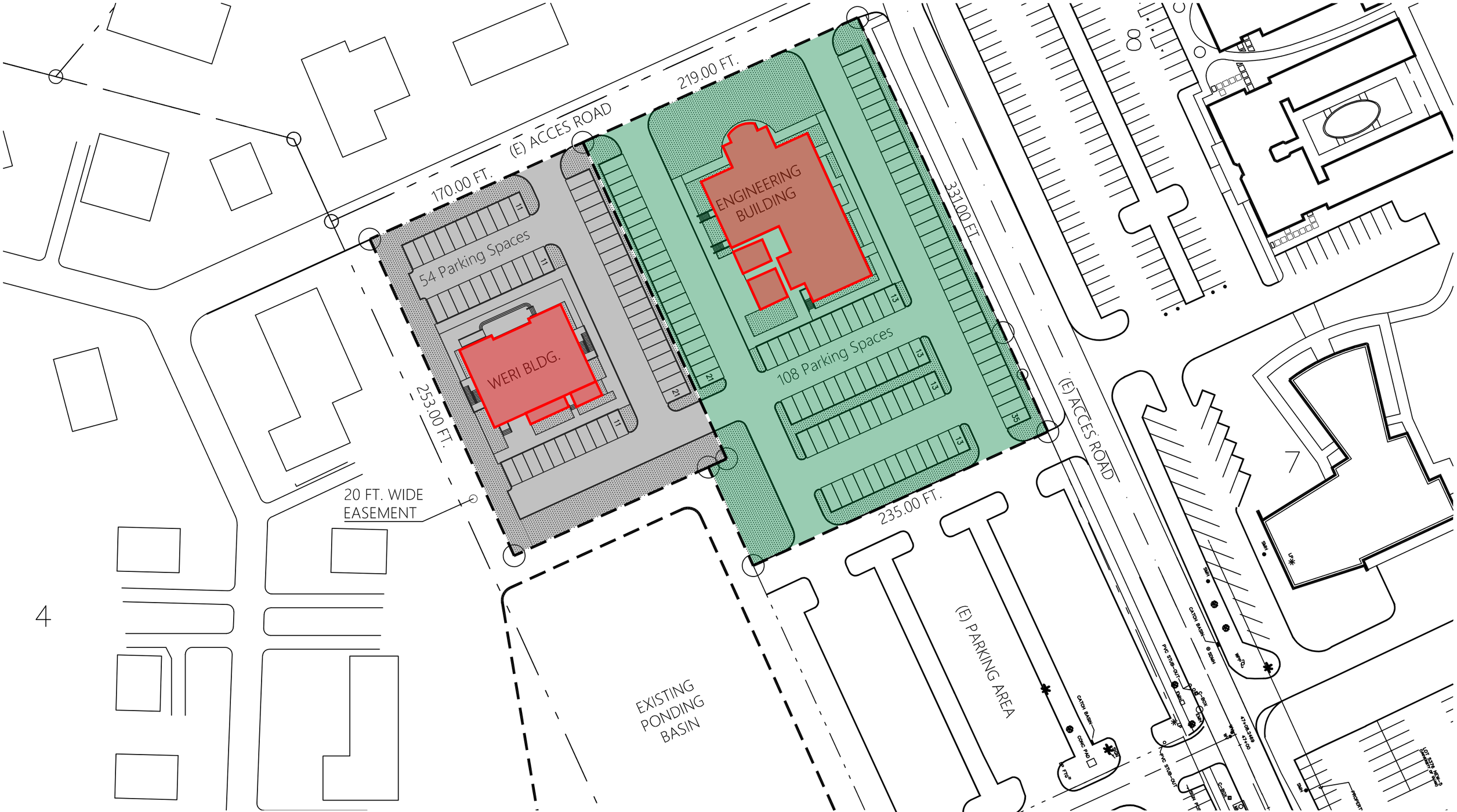
UOG ENGINEERING SCHOOL & WERI BUILDINGS | 17 NOVEMBER 2021

LOT AREA COMPUTATION:

ENG'G. BLDG. : 74,371 SF.
WERI BLDG. : 43,082 SF.

Scale: 1/128" = 1'-0"

DESIGN PARTNERS INCORPORATED



4

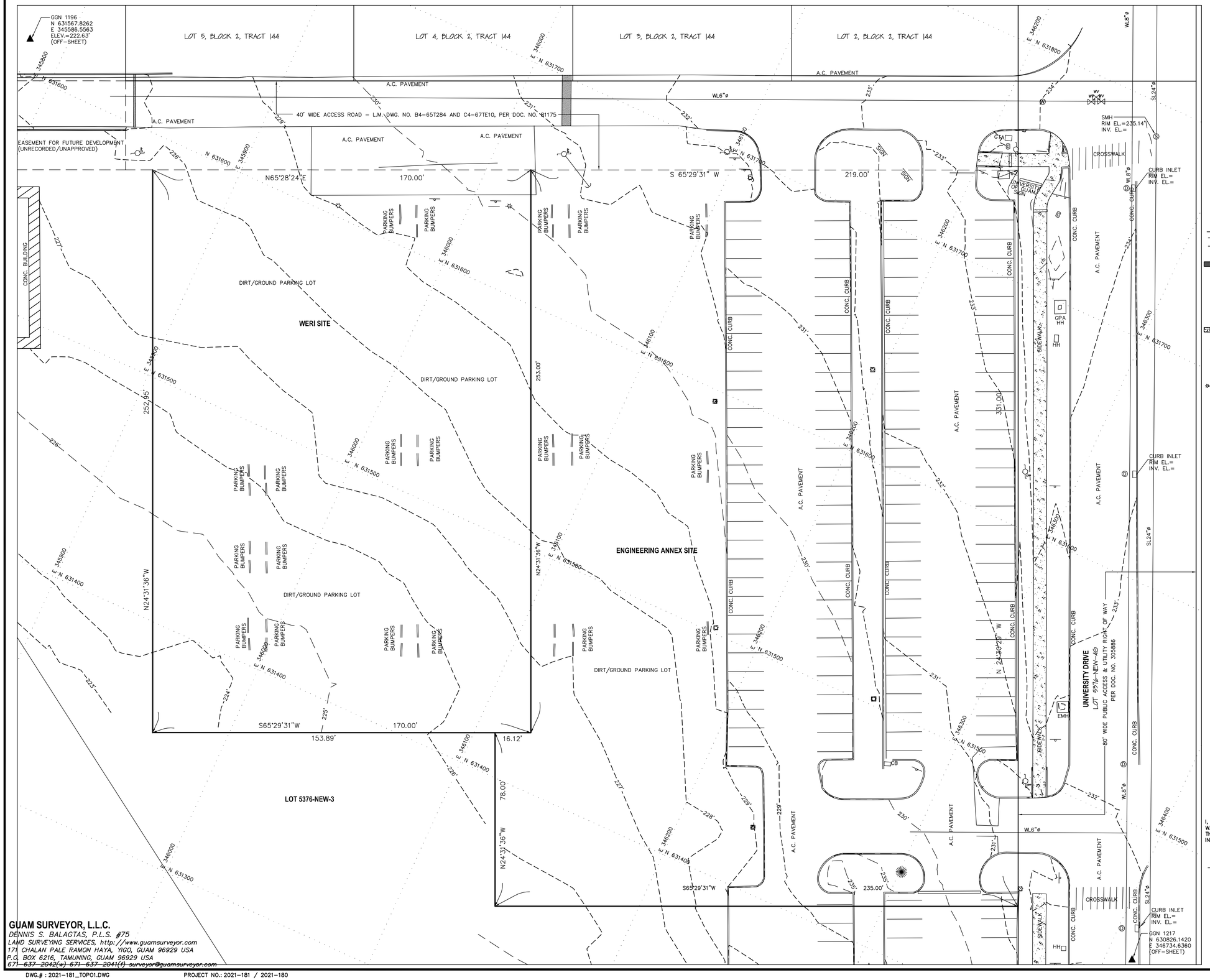
ENLARGED SITE DEVELOPMENT PLAN_SCHEME 02

UOG ENGINEERING SCHOOL & WERI BUILDINGS | 17 NOVEMBER 2021

Scale: 1/64" = 1'-0"

DESIGN PARTNERS INCORPORATED

EXHIBIT B



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

- PROPERTY LINE
- RIGHT OF WAY
- A.C. ASPHALT CONCRETE
- A.C. PATCH
- ANODE
- CB CATCH BASIN
- CHAIN LINK FENCE
- COCONUT TREE
- COMMUNICATION MANHOLE
- CONCRETE POWER POLE
- CONCRETE SLAB/PAD
- ELECTRICAL MANHOLE
- FIRE HYDRANT
- GATE POST
- GP GUARD POST
- GUY WIRE
- LIGHT POST
- 1993 GGN CONTROL MONUMENT
- OE OVERHEAD POWER LINE
- PALM TREE
- PLANTS
- SEWER CLEAN OUT
- S24"ø SEWER LINE WITH SIZE IN INCHES
- SEWER MANHOLE
- SIGN POST
- D12"ø STORM DRAINAGE LINE WITH SIZE IN INCHES
- STORM DRAIN MANHOLE
- TELEPHONE BOX
- TELEPHONE MANHOLE
- W8"ø WATER LINE, WITH SIZE IN INCHES
- WATER MANHOLE
- WM WATER METER
- WV WATER VALVE
- WOODEN POWER POLE
- CABLE BOX

REFERENCES

1. DOC. NO. 305926, L.M. NO. 423-FY79, RETRACEMENT, AS-BUILT AND PARCELLING SURVEY OF BASIC LOT 5376-NEW-R2 INTO LOTS 5376-NEW-3 AND LOT 5376-NEW-5, BY R.L.S. NO. 37.

NOTES

1. HORIZONTAL CONTROL WAS BASED ON 1993 GUAM GEODETIC NETWORK COORDINATES AND MONUMENTS. COORDINATES SHOWN ARE IN U.S. SURVEY FEET.
2. VERTICAL CONTROL WAS BASED ON MEAN SEA LEVEL DATUM.
   BENCHMARK: GGN 1196, ELEV. = 222.63'.
3. ALL DISTANCES AND ELEVATIONS SHOWN ARE IN U.S. SURVEY FEET & DECIMALS THEREOF.
4. FIELD WORK WAS PERFORMED IN DECEMBER, 2021.
5. LOCATIONS OF COVERED SLABS, A.C. PAVEMENTS, PIPES, AND OTHER UNDERGROUND STRUCTURES ARE DRAWN BASED ON VISIBLE FIXTURES ON THE GROUND AND/OR AVAILABLE DRAWINGS. ACTUAL LOCATIONS MAY DIFFER.

LOT 5376-NEW-3 CONTROL DATA

STA	BS	HI	FS	EL	REM
GGN 1196	9.69	232.32		222.63	MSL
UOG-1			4.55	227.77	
UOG-2			8.45	223.87	
UOG-3	8.24	239.28	1.28	231.04	
UOG-4	1.39	234.37	6.3	232.98	
TP-1	2.43	224.75	12.05	222.32	
GGN 1217	8.01	224.87	7.89	216.86	GUVD
TP-1	12	234.33	2.54	222.33	
UOG-4	5.99	238.98	1.34	232.99	
UOG-3	1.44	232.5	7.92	231.06	
UOG-2			8.62	223.88	
UOG-1			4.71	227.79	
GGN 1196			9.83	222.67	-0.04

CERTIFICATE OF SURVEYOR

I, DENNIS S. BALAGTAS, HEREBY CERTIFY THAT THIS MAP WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT IT IS BASED ON A FIELD SURVEY MADE IN DECEMBER, 2021, IN CONFORMANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

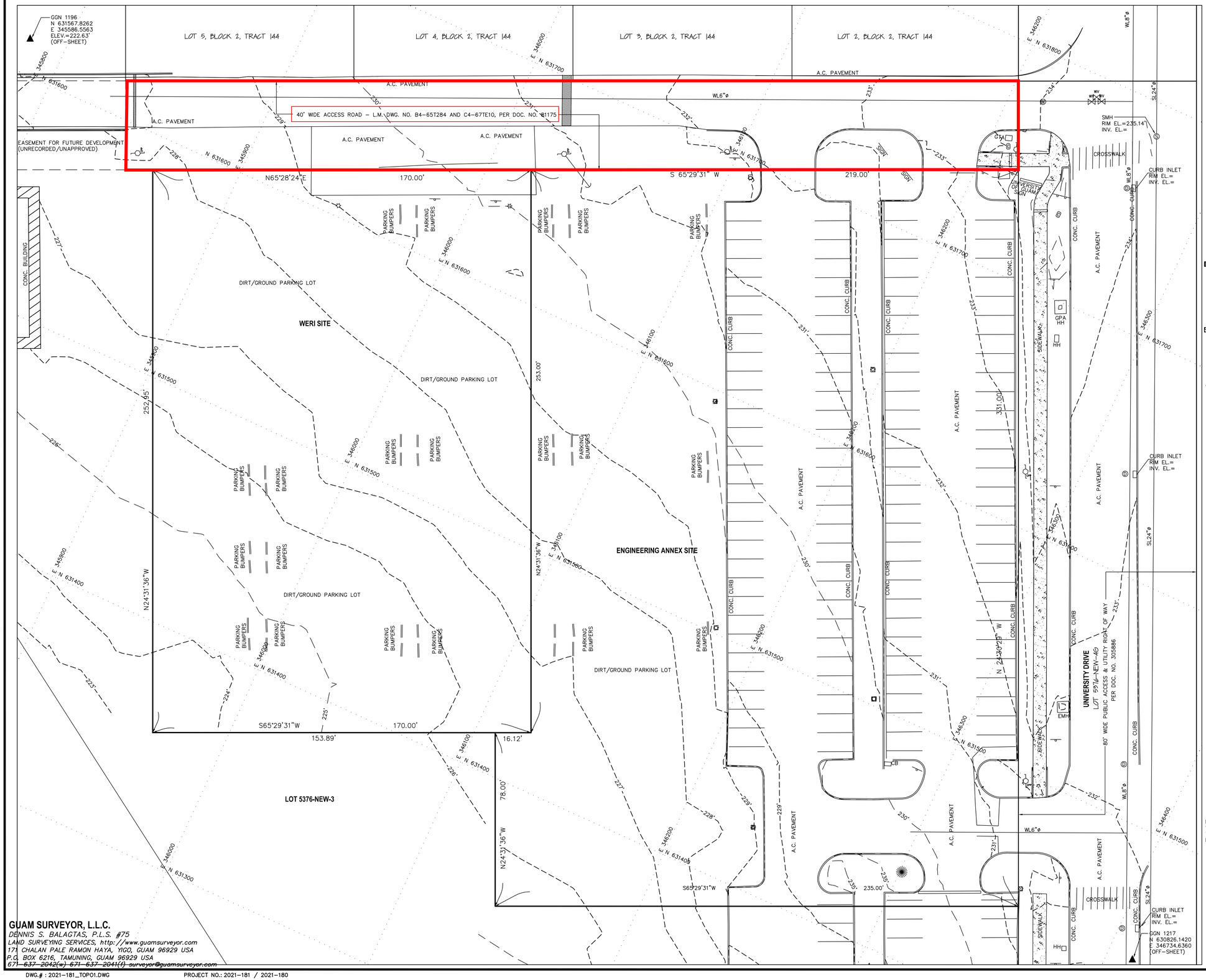
DENNIS S. BALAGTAS DATE
PROFESSIONAL LAND SURVEYOR # 75

DENNIS S. BALAGTAS CERTIFICATE NO. 75 EXP: 04/30/2022 GUAM PROFESSIONAL LAND SURVEYOR

GUAM SURVEYOR, L.L.C.
DENNIS S. BALAGTAS, P.L.S. #75
LAND SURVEYING SERVICES, http://www.guamsurveyor.com
171 CHALAN PALE RAMON HAYA, YIGO, GUAM 96929 USA
P.O. BOX 6216, TAMUNING, GUAM 96929 USA
671-637-2042(w) 671-637-2041(f) surveyor@guamsurveyor.com

TOPOGRAPHIC SURVEY OF ENGINEERING ANNEX, UNIVERSITY OF GUAM, LOT 5376-NEW-3, MUNICIPALITY OF MANGILAO, TERRITORY OF GUAM

EXHIBIT C



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UOG-3	8.24	239.28	1.28	231.04	
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DENNIS S. BALAGTAS DATE
PROFESSIONAL LAND SURVEYOR # 75

DENNIS S. BALAGTAS CERTIFICATE NO. 75 EXP: 04/30/2022 GUAM PROFESSIONAL LAND SURVEYOR

TOPOGRAPHIC SURVEY OF
ENGINEERING ANNEX, UNIVERSITY OF GUAM,
LOT 5376-NEW-3,
MUNICIPALITY OF MANGILAO, TERRITORY OF GUAM

GUAM SURVEYOR, L.L.C.
DENNIS S. BALAGTAS, P.L.S. #75
LAND SURVEYING SERVICES, http://www.guamsurveyor.com
171 CHALAN PALE RAMON HAYA, YIGO, GUAM 96929 USA
P.O. BOX 6216, TAMUNING, GUAM 96929 USA
671-637-2042(w) 671-637-2041(f) surveyor@guamsurveyor.com

DWG.# : 2021-181_TOPO1.DWG PROJECT NO.: 2021-181 / 2021-180 SURV: FB1125/PG12, GS, MSB

EXHIBIT D

FINAL REPORT

GEOTECHNICAL ENGINEERING ASSESSMENT

PROPOSED ENGINEERING BUILDING

UNIVERSITY OF GUAM
MANGILAO, GUAM

Prepared for:

SSFM INTERNATIONAL
215 ROJAS STREET, SUITE 213
HARMON, GUAM 96913

Prepared By:

OYO CORPORATION, PACIFIC
TUMON BAY BUSINESS CENTER, UNIT 103
919 PALE SAN VITORES ROAD
TUMON, GUAM 96913

OYO JOB NO. 210040
MARCH 9, 2022

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OYO Project No. 210040
March 9, 2022

SSFM International
215 Rojas Street, Suite 213
Harmon, Guam 96913

Attention: Mr. Ed Hipolito
Senior Project Manager

Re: Geotechnical Engineering Assessment
Proposed Engineering Building
University of Guam, Mangilao, Guam

Dear Mr. Hipolito:

Thank you for choosing OYO Corp., Pacific as your geotechnical consultant for the Proposed Engineering Building at University of Guam, Mangilao, Guam.

We have completed our Geotechnical Engineering Assessment for the subject project as requested. The findings of the subsurface investigation and our recommendations for the proposed development are presented in the accompanying report.

If you have any questions, please do not hesitate to contact our office. OYO would be pleased to continue providing geotechnical services throughout the implementation of the project, and we look forward to working with you and your organization on this and future projects.

Respectfully submitted,

OYO CORPORATION, PACIFIC

Thomas J. Krasovec, PE (Civil-2125)
Office Manager/ Executive Engineer

Kazuki Nakamura, PhD, PEjp
President

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

FINAL REPORT
LIMITED GEOTECHNICAL ENGINEERING ASSESSMENT
PROPOSED ENGINEERING BUILDING
UNIVERSITY OF GUAM, MANGILAO, GUAM

1 INTRODUCTION

This report presents OYO's findings and recommendations related to the geotechnical engineering assessment and subsurface investigation completed for the proposed engineering building at University of Guam, Mangilao, and Guam.

Project information was provided by SSFM International. We understand that the project involves the construction of a new five (5) story building with utilities and adjacent parking areas. During the preparation of this report, site and building layout was provided to OYO by SSFM. No details about the structural loads or footing locations were provided for the proposed engineering building. We have assumed that the building will be concrete construction with moderately loaded wall and column foundations.

2 SCOPE OF SERVICES

The scope of services for this study includes project site reconnaissance and the assessment of subsurface conditions thru field exploration and laboratory testing. The subsurface exploration was completed to provide discussions and recommendations concerning earthwork and foundation design and potential geotechnical related issues for the proposed project as follows:

- Geologic review of the project site;
- General subsurface conditions encountered including pertinent soil properties, groundwater levels if encountered and drainage;
- Soil data review and analysis as it relates to the proposed construction and development;
- Civil site recommendations for site preparation and grading including cut and fill, soil material requirements, placement and compaction procedure, and subgrade improvement as appropriate;
- Geotechnical related structural recommendations to support foundations, slab on grade design and construction for the proposed engineering building;
- Settlement estimates for the building foundations.
- Grading and subgrade preparation for the building foundation slabs on grade, utilities and pavements.

2.1 Geotechnical Exploration

OYO subcontracted APDI to provide the drilling services for the subsurface exploration program. A representative of OYO performed the geotechnical field logging, sampling and field assessments. The subsurface exploration consisted of six (6) soil borings. Five (5) soil borings, designated as B-01 to B-05, were drilled within the proposed engineering building site to depths of 60 feet, below the existing grade (BEG); and one (1) soil boring (B-06) was drilled near the existing stormwater retention basin to a depth of 15 feet BEG.

Drilling was completed using a Diedrich and a Mobile Drill P61 drill rig. Soil borings were advanced using a 3.25" hollow stem auger equipped with an automatic hammer. Standard Penetration Tests (SPT) were performed at selected depths within the borings in accordance with ASTM D1586. SPT blow counts were recorded and are summarized on the boring logs. The penetration resistance, in conjunction with soil classifications and laboratory testing were used to assess engineering characteristics of the soils or rock encountered.

Rapid permeability testing was performed in B-06 at depths of 4.5, 10.5 and 15 feet below existing grade. Auger casings were left in the borehole during the test. Water was introduced in the borehole; then, water level BEG was recorded every 5-minutes up to test duration of 30 minutes.

Soil samples recovered during the drilling operations were transported to OYO laboratory in Yigo, Guam for further evaluation/testing. Groundwater when encountered was noted on the boring logs. Descriptions of the soils encountered during our subsurface exploration are provided in the attached Boring Logs. Groundwater conditions, standard penetration resistances, and other pertinent information are also included in the Boring Logs in **Appendix B**. Boring locations were layed out based on information provided by SSFM and as measured from existing light or power poles and the results of utility locating using GPR methods.

The ground surface elevations and geographic coordinates at each boring location as shown below and on the individual boring logs were approximations from GoogleEarth. Investigation locations are summarized in **Table 1**.

TABLE 1: SUMMARY OF GEOTECHNICAL INVESTIGATION LOCATIONS

Borehole	Proposed Structure	Approximate Elevation (ft.)	Borehole Termination Depth (ft.)	Approximate Coordinates	
				Latitude	Longitude
B-01	Building	230	60	13.432411°	144.800927°
B-02	Building	229	60	13.432443°	144.800834°
B-03	Building	228	60	13.432264°	144.800792°

Borehole	Proposed Structure	Approximate Elevation (ft.)	Borehole Termination Depth (ft.)	Latitude	Longitude
B-04	Building	227	60	13.432118°	144.800839°
B-05	Building	229	60	13.432210°	144.801027°
B-06	Ponding Basin	226	15	13.431952°	144.800821°

Drilling and soil sampling were conducted in accordance with procedures generally recognized and accepted as standard methods of exploration of subsurface conditions related to earthwork and geotechnical engineering projects.

The approximate drilled depth and location of each boring is shown on the attached Boring Location Plan in **Appendix A**. The findings of the borings are presented on the Boring Logs shown in **Appendix B**.

2.2 Laboratory Testing

An OYO geotechnical engineer visually classified the soil samples obtained in the field for this geotechnical report in accordance with ASTM D2488. Select samples were tested for one or all of the following, native water content (ASTM D2216), Atterberg limits (ASTM D4318), grain size analyses (ASTM D6913). Unified Soil Classification System (USCS) of soil samples were determined as per USCS ASTM D2487. The results of laboratory tests and applicable USCS classification are presented in **Appendix C**.

3 SITE AND SUBSURFACE CONDITIONS

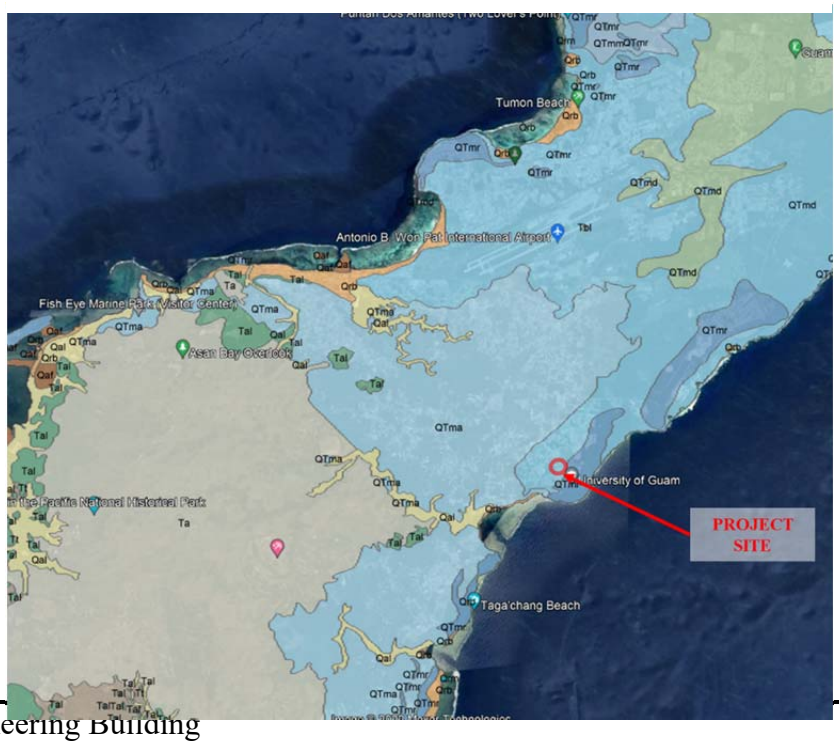
3.1 Site Location and Description

The project site is located within the campus of the University of Guam in Mangilao, Guam. The limit of the proposed development is mostly covered with vegetation such as grass, and limestone aggregates, with paved portions used as an existing parking lot. The existing paved parking lot area is adjacent to Route 32 west of Route 10. The site will consist of a five (5) story engineering building, associated utilities, parking areas, and a stormwater retention basin. The project site is bounded by Alstom Circle Road to the Northwest, a paved parking lot to the Southwest, ponding basin to the South, Route 32 on the Northeast and the proposed WERI building site to the Southwest. The existing grades within the area of proposed development vary from approximately EL. 225 to 231 feet above Mean Sea Leve (MSL).

3.2 Area Geology

Guam, the largest and southernmost island of the Marianas Islands is subdivided into two major geologic provinces: the northern limestone province and the southern volcanic province, and is separated by a major fault zone at the narrow waistline of the island between Adelup Point and Pago Bay. The northern half of the island is a broad limestone plateau that slopes from an altitude of more than 600 feet at the north end to less than 200 feet near the middle of the island. The southern half is a dissected volcanic upland fringed with limestone along the east coast. The southern volcanic province includes two distinct sub-provinces which are called the central Guam and the south Guam.

FIGURE 1: GENERAL SITE GEOLOGY



Based from the revised map entitled "Geologic Map and Section of Guam, Mariana Islands" by H. G. Siegrist, Jr. and Mark K. Reagan in 2008, the project site is located within the south east portion of central Guam and southern section of the northern limestone province which is generally underlain with a thin layer of overburden silty gravelly top soils overlying the detrital facies of Mariana limestone formation or Hagatna Argillaceous Member both of the Pliocene and Pleistocene epoch. The Mariana Limestone formation is described as white, dense, inequigranular, predominantly detrital facies, representing a variety of reef platform and off-reef environments. Coralgal framework, molluscan and Halimeda subfacies locally important. Completely recrystallized, and commonly displays vuggy to cavernous porosity. Dominant rock unit throughout much of northern Guam where it attains thicknesses estimated at between 550 and 600 ft. a major source of quarried aggregate and was identified at the site at approximately 3 to 5 feet below existing grade (BEG). The Hagatna Argillaceous Member is described as coarse to fine-grained pale yellow, tan, or brown fossiliferous detrital limestone containing 2 to 5 percent disseminated clay and as much as 20 percent clay in pockets and cavities; includes undifferentiated lenses of other Limestone facies. Formation typically unconformable upon underlying rocks. Maximum aggregate thickness of formation is as much as 500 feet in some cliffs and appears to be the upper 3 to 5 feet of soils at the site. The detrital limestone is generally friable to well cemented coarse to fine-grained generally porous and cavernous of lagoonal origin.

3.3 Seismicity

Based from the USGS Seismic Hazard Assessment for Guam and the Northern Marianas, the seismicity of the region is primarily controlled by the active northwestward subduction of the Pacific Plate beneath the Philippine Sea Plate at the Marianas Trench.

The island of Guam is formed by three major structural provinces consisting primarily of a) the limestone plateau of north Guam, b) the folded Eocene volcanic rocks of Central Guam, and c) the east dipping Miocene volcanic rocks of South Guam. These major structural provinces consisted of several blocks separated by fault zones.

However, of the seven (7) faults and fault zones identified in Guam, only two were identified as the principal faults and fault zones known to be active namely:

1. The *Adelup fault* extends across the narrow waist of the island and forms the structural boundary between the northern and southern parts of the island. The Adelup fault is likely characterized by low slip rates on the basis of the late Holocene bench that is offset several feet, and the amount of offset suggested by the topographic expression of the fault in the older limestone. Based from the evidence of the surface rupture, it was believed that it is capable of generating earthquakes of at least Mw 6.5. Geologic relations suggest that it is probably a high-angle normal fault dipping to the northeast.

2. The *Tamuning-Yigo fault* zone is characterized by a topographic scarp indicating Quaternary displacement is also considered as a potential source. The fault is at least 25 km long, although Tracey and others (1964) note that the northeastern is not well expressed. Based on the topographic and geologic evidence it was believed to be consistent with the maximum earthquake of at least Mw 6.5. Tracey and others (1964) believed that the Tamuning-Yigo fault zone is a high-angle, down -to-the northwest fault with maximum relief of about 60m. However, it was believed that the Tamuning-Yigo fault zone is less active than the Adelup fault.

FIGURE 2: SEISMIC FAULT ZONES OF GUAM

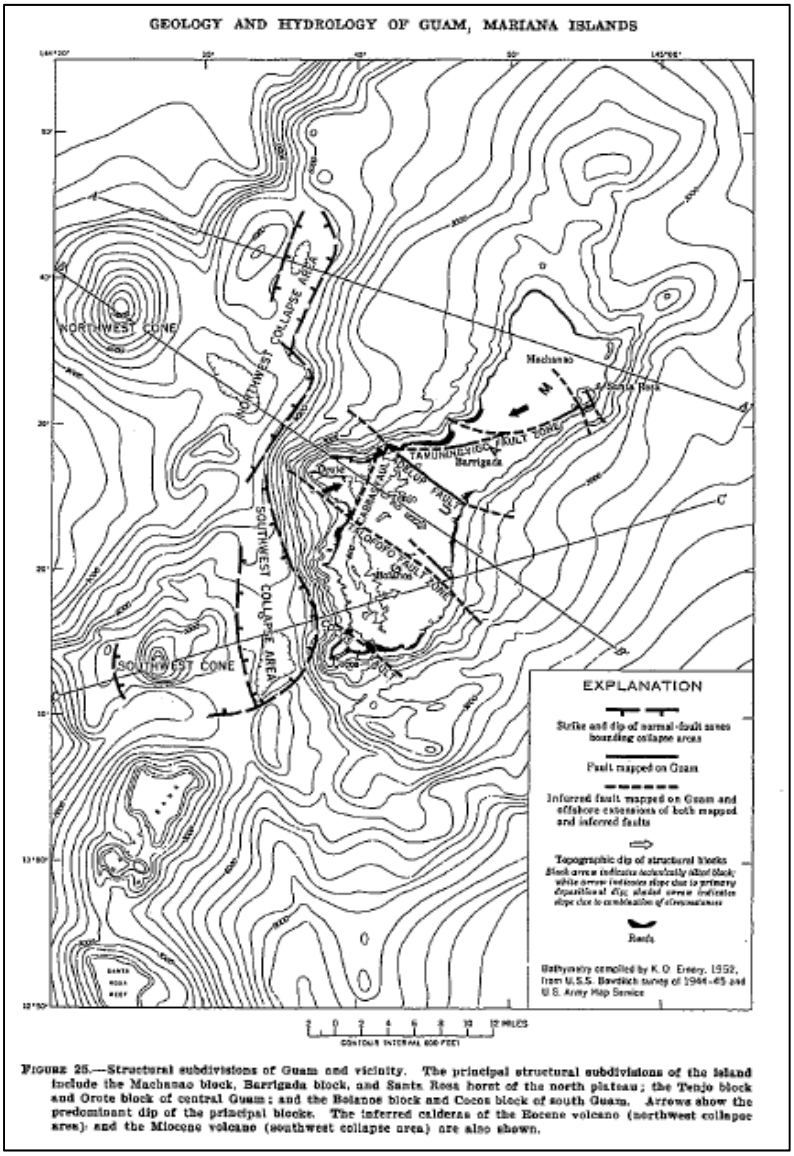


FIGURE 25.—Structural subdivisions of Guam and vicinity. The principal structural subdivisions of the island include the Machanao block, Barrigada block, and Santa Rosa horst of the north plateau; the Tenjo block and Orote block of central Guam; and the Bolanos block and Cocos block of south Guam. Arrows show the predominant dip of the principal blocks. The inferred calderas of the Eocene volcano (northwest collapse area) and the Miocene volcano (southwest collapse area) are also shown.

Reference: General Geology of Guam by Tracey and Others, 1964

Table 3 below shows the list of top 10 significant earthquakes with the highest magnitude within 100-km radius of the site dated from 1922 to present.

TABLE 2: LIST OF EARTHQUAKES IN GUAM

DATE	Reported Latitude	Reported Longitude	Depth	Magnitude	Magnitude Type
1993-08-08	12.982	144.801	59.3	7.8	Mw
2002-04-26	13.088	144.619	85.7	7.1	Mwc
2001-10-12	12.686	144.98	37	7	Mwc
2014-09-17	13.764	144.429	130	6.7	Mw
1997-04-23	13.986	144.901	100.8	6.5	Mwc
1936-10-29	13.794	145.301	75	6.5	Mw
2005-02-02	14.08	144.715	158.7	6.3	Mwc

Note: *Mw=moment W-phase; *Mwc=moment centroid; Earthquake data was obtained from USGS website;

Based on the above information, it appears that the island of Guam is categorized to be in the moderate to very high seismicity region. Using GoogleEarth, the project site is situated approximately 3.75 miles southeast of the Tamuning-Yigo fault and 1.60 miles northeast of Adelup Fault.

3.4 Subsurface Conditions

The stratification of the soil conditions at the actual soil test boring locations are described in this section. Boring logs showing the general stratigraphy are provided in **Appendix B**.

Surficial Cover: From the ground surface, boreholes B-03, 04 and 06 encountered approximately 3 to 5 inches of Topsoil. Approximately 3 inches of pavement was encountered at the surface of boreholes B-01, 02 and 05. Please note that the actual thickness and type of surficial material across the site may vary between boring locations.

FILL: The pavement was underlain by fill material classified as sandy silty GRAVEL (GM), was encountered up to a depth of 0.75 feet below NGL. The fill layer is the base or sub-base material for the pavement.

Limestone: Coralline limestone rock categorized as detrital facies of Mariana limestone formation was encountered below the top soil and fill material extending to the maximum depth explored of 60.00 feet. The limestone is moderate with very weak to weak zones at random depths as noted on the boring logs and likely extends to several hundred feet below mean sea level (MSL).

The above subsurface description is of a generalized nature provided to highlight the major soil strata encountered. The boring logs included in the appendices should be reviewed for specific information as to individual test boring locations. The stratification lines shown on the test boring logs represent the conditions only at the actual test boring locations, and represent the approximate boundaries between subsurface materials, the actual transition between subsurface materials may be more gradual.

3.5 Groundwater Conditions

Groundwater was not encountered in any of the test borings during drilling. The borings were backfilled upon completion for safety concerns; therefore, 24-hour water level readings were not recorded. Ground water at the site should be at approximately MSL which is well below the depth explored and should not affect the proposed development. Groundwater elevations can vary seasonally and perched groundwater may be encountered during rainy seasons. The attached boring logs and groundwater observations presented in this report reflect those observed at the time of our field activities. We anticipate that groundwater or perched groundwater as well as surface water can be removed with standard sump and pump systems.

3.6 Site Class and Other Seismic Coefficients

The site geology is generally approximately up to 0.75 feet of silty gravel fill or topsoil underlain by weak to very weak limestone rock which generally extends up to 600 feet below existing grade. Based on the subsurface conditions encountered, the project site may be classified as Class C in accordance with ASCE 7-10 site class definitions/criteria.

Per IBC 2018, the latest mapped MCE spectral response accelerations for the project site indicated the values of 0.2 second spectral response accelerations, Ss = 2.857g and the 1-second spectral response accelerations, S_1 = 0.718g were adopted for the building design. The maximum peak ground acceleration (PGA) is estimated at 0.927g. Based on site specific ground motion study conducted by URS Corporation dated April 1, 2016, and per ASCE 7-10 21.4, the acceleration values indicated for Guam may be reduced by 20%.

The associated IBC probabilistic ground motion values for latitude 13.432237 and longitude 144.800666 obtained from third-party graphical user interface seismic design maps as recommended in USGS (https:// hazards.atcouncil.org) are as follows:

TABLE 3: SEISMIC COEFFICIENTS AND OTHER PARAMETERS

Site Class	**C**	Table 20.3.1- ASCE 7-10
Risk Category	**III**	Table 1604.5 – IBC 2015
Site Coefficient, Fa	1.0	Table 1613.3.3(1) – IBC 2015

Ss	**2.857**	Value from GUIs
S_{MS} = FaSs	2.857	Equation 16-37 – IBC 2015
S_{DS} = 2/3 S_{MS}	1.905	Equation 16-39 – IBC 2015
Site Coefficient, Fv	1.3	Table 1613.3.3(2) – IBC 2015
S_1	**0.718**	Value from GUIs
S_{M1} = FvS_1	0.933	Equation 16-38 – IBC 2015
S_{D1} = 2/3 S_{M1}	0.622	Equation 16-40 – IBC 2015
PGA*	**0.927***	Table E-3 –UFC 3-301-01 Note b*
Site Coefficient, F_{PGA}	1.0	Table 11.8-1 – ASCE 7-10
PGA_M =F_{PGA}PGA	0.927	Equation 11.8-1 – ASCE 7-10

Note: Indicated values of S_s and S_1 may be reduced by 20% based on a site-specific ground motion study conducted by AECOM on April 1, 20216 and according to ASCE 7-16 Chapter 21.

3.7 Soil Liquefaction

Soil liquefaction is a phenomenon whereby saturated sandy soils lose it strength due to the increase in soil pore pressure during a seismic event. The most susceptible to liquefaction are saturated, loose, uniformly graded, and fine-grained silty sands or silts. The primary site characteristics to consider for liquefactions are: groundwater depth, soil type, relative density of soil, initial confining or overburden pressure, and intensity and duration of seismic event.

The project site is located on a high ground, with surface elevations ranging from 225 to 231 feet above mean seal level. Ground water level is approximately at the mean sea level. The identified silty gravel and the underlying permeable limestone formation are not considered as potential materials for liquefaction. As such, with the subsurface and groundwater conditions encountered, liquefaction of site soils is not likely to occur.

3.8 Seismic Induced Settlements

Relatively strong to violent ground shaking associated with seismic activity can cause settlement of both saturated and unsaturated sandy soils. The potential impact of seismic induced settlement is ground surface movement and movement of soils below floor slabs or shallow foundations. Strong seismic activities can cause densification of unsaturated sandy soils or loose fills causing settlement.

The site area is generally underlain by relatively shallow limestone rock overlain by dense sandy silty gravel soils. As such we anticipate that settlement related to seismic activity will be limited and not exceed anticipated settlements noted in the conclusions and recommendations section of this report.

3.9 Site Information Assessment

Based on the available client provided information, and results of our field investigations and

laboratory tests, the following are our observations and opinions:

- The building site is generally underlain with shallow weak limestone formation which is suitable to support the planned building on conventional shallow spread or continuous footings with moderate to high bearing capacities. Foundations should not bear on the very week limestone as identified in the approximately top 1 foot of limestone and at various depths BEG as noted in the attached boring logs

- Building footings should be founded on undisturbed weak white limestone as encountered at approximately 3 to 10 feet BEG in the boreholes. Footings bearing on the identified upper 0 to 3 feet of native soil, highly weathered limestone, and fill material will reduce the allowable soil bearing capacity and potentially increase the differential settlement.

- The underlying generally detrital limestone rock formation is generally weak to very weak which the very weak limestone is not be suitable as immediate foundation support for the planned buildings and tank structures. Therefore, if the foundation excavations expose significant weak zones, pockets of weathered limestone, large cracks or discontinuities, the excavation should be extended to reach a more uniform surface and with minimum final surface depressions that may promote surface flooding that will potentially cause future erosion.

Details of our recommendations are discussed in the following sections of this report.

4 GEOTECHNICAL ASSESSMENT AND RECOMMENDATIONS

The following recommendations are based on the information available on the proposed construction, the data obtained from the soil borings, laboratory testing, and our experience with soils and subsurface conditions similar to those encountered at this site. Because the borings represent a very small statistical sampling of the subsurface materials, conditions encountered during construction may be substantially different from those encountered in our borings. In these instances, adjustments to the design and construction may be necessary depending on the actual conditions encountered.

4.1 Foundation Discussion

Based on the information obtained, we recommend that the planned engineering building be supported on shallow foundations, such as spread footings, and/or continuous footings or a reinforced mat bearing directly on the native limestone formation or a layer of compacted engineered fill. The over-excavation should be extended at least 12 inches horizontally beyond all sides of the proposed footings. Prior to backfilling, the exposed surface of the excavation should be scarified to 6 inches BEG, moisture treated to near optimum and recompacted to a minimum of 95 percent of its maximum dry density based on ASTM Test Method D-1557.

As an alternative if higher loading is anticipated (such as columns) may be founded on drilled piers. Drilled piers should be founded in the zone at approximately 18 feet (6 meters) BEG and not bear on the periodic very week or weak zones of limestone. Foundations may then be designed using a combination of end bearing and skin friction along the drilled reinforced pier. Design criteria for drilled pier foundations can be provided upon request.

Our recommendations for subsurface preparation for foundation support are detailed in the following sections.

4.1.1 General Shallow Foundation Recommendations

The near surface fill and native topsoil and highly weathered limestone are not suitable for the support of the proposed structure. Footings for support of the engineering building structure should be placed on native competent limestone as generally encountered at 3 feet BEG or on engineered fill. The foundations areas maybe over-excavated to 3 feet BEG and then backfilled with compacted engineered fill. The building may be supported on compacted engineered fill; non-cohesive structural silty sandy limestone gravel compacted in 8-inch layers to a minimum of 95% of its maximum dry density per ASTM D1557. The over-excavation, backfilling and compaction should extend laterally from the footing edges at a 1H:1V slope. All topsoil, existing fill and very week limestone should be removed below footing areas to extend the footings to competent limestone or the over-excavations may be backfilled with engineered fill.

Based on our experience and existing information of the general area of the project limestone rock formation is characterized with isolated soft and cohesive soil pockets at random areas, which were generally weak zone pockets of the detrital limestone. If the soft soil pockets are identified at the footing bearing elevation, it is recommended to excavate/remove the soft soil pockets and apply 3-inch thick of lean-mix concrete prior to placement of structural backfill. The lean concrete will reduce water seepage that cause the migration of fine grain soils which can develop voids below foundations.

After the necessary preparations are completed the building structure can be supported on spread footings and/or continuous footings based on the following allowable bearing pressures:

TABLE 4: ALLOWABLE BEARING PRESSURES

Load	Allowable Bearing Capacity
Dead Loads + Live Loads (Engineered Fill)	3000 psf
Total Loads, including wind or seismic loads	4000 psf
Dead Loads + Live Loads (Competent Native Limestone)	4000 psf
Total Loads, including wind or seismic loads	5300 psf

Note: In accordance with 2018 IBC Section 1806.1, the presumptive values of vertical foundation pressure and lateral bearing pressure may be increased by 1/3 for seismic and wind loading conditions with the basic load combination as referenced in Section 1605.3.2 of the IBC. The use of higher values for wind and seismic loading may only be used when fully substantiated by the design engineer and approved by the building authority. Any additional loading would be the responsibility of the design engineer.

Footings should bear at a minimum of 3 feet BEG and have a minimum width of 2 feet. The footing foundations should be designed for a total settlement of 1.5 inches with differential settlement of approximately ½ of the total settlement measured across the width of the building. If anticipated settlements are greater than allowed, tie beams or wall footings can be used. Continuous footing should be reinforced top and bottom to span local anomalies by assuming an unsupported length of at least 10 feet.

Due to possible variations in subsurface conditions and related bearing capacity, all footing excavations and trenches should be observed and approved by the Geotechnical Engineer of Record or a qualified representative. Water and possibly some loose soil may collect in the footing excavations as a result of surface precipitation, soil excavations, and near ground surface seepage. Therefore:

- Water, loose soil, and soil softened by water should be removed from the bottom of the footing excavations before placing concrete.

- Footing excavations should not be left open for long periods. If the trenches are left open

to surface water and precipitation, all loose or soft soils must be removed and replaced with engineered fill or lean concrete. If the concrete cannot be placed due to inclement weather conditions or any other unforeseen circumstances, the bottom of the footing excavations and trenches should be protected by undercutting 3 inches and placing a 3-inch thick lean-mix concrete (2,000 psi) working mat immediately upon approval and before reinforcing steel is placed.

Where unsuitable bearing conditions are encountered as determined by a Geotechnical Engineer or designated representative, these soils should be undercut and replaced with controlled structural fill. If backfilled up to the design bearing elevation, the over-excavation should extend laterally from all foundation edges on a one-to-one slope to the base of the undercut. If the over-excavation is filled with concrete or flowable fill, the widening of the excavation is not required. Any site preparation and earthwork related to foundations should satisfy the requirements of Section 4.5 of this report.

4.1.2 Uplift and Shear Resistance of Shallow Foundations

Shallow foundations may be used to resist both uplift and lateral forces. For the case of uplift forces, the resistance should be calculated including the weight of the foundation and the weight of the overburden soil above the foundation. The overburden soil above the foundation must be well-compacted structural fill. We recommend using total unit weights of 120 and 150 pcf for the subgrade soils and concrete material, respectively. Any continuously applied dead load above the foundation should be calculated also for the case of the resistance to uplift forces.

For transient uplift loads, such as wind loads, the uplift resistance should be computed similarly to the case of the sustained loading, except that the prism of soil above the foundation used to compute the resistance is formed by the projection of lines from the top perimeter of the foundation upwards at an angle of 20 to 30 degrees from the vertical depending on the type of soil.

For soil backfill above the footing, the upward projection of the sides of the soil prism should be at a 30-degree angle, outward from the vertical. The safety factor for uplift resistance for the transient loading condition is the ratio of the sum of the foundation and overburden weights divided by the uplift force and should be at least 1.5.

Passive earth pressures of foundation materials adjacent to the footing, as well as soil friction along the footing base, may be used to resist sliding. The passive soil resistance can be calculated using an estimated equivalent fluid density of 400 pcf. OYO has assumed compacted structural fill as the foundation material to be used for computing passive earth pressures and soil friction. An allowable friction coefficient between the concrete footing and structural fill or native limestone soils can be assumed to be 0.45.

4.1.3 Concrete Slab-on-Grade

OYO understands that the floor slab with in the engineering building will consist of a concrete slab. The proposed floor slabs should be supported by at least 3 feet of newly placed non-expansive structural fill placed in maximum 8-inch layers and compacted to at least 95% of its maximum dry density per ASTM D1557. Moreover, we recommend a design modulus of subgrade reaction of 300 pounds per cubic inch (pci), based on 1ft x 1ft values, be used for slab-on-grade. This recommended value is based on the assumption that the site preparation recommendation in this report has been followed. The value should be adjusted for larger areas using the following expression of cohesive and non-cohesive soils.

$$k_s = \left(\frac{k}{B}\right) \text{ for cohesive soil and}$$

$$k_s = k\left(\frac{B+1}{2B}\right)^2 \text{ for non-cohesive soil}$$

where:

k_s = coefficient of vertical subgrade reaction for loaded area,
k = coefficient of vertical subgrade reaction for 1x1 square foot area, and
B = width of area loaded, in feet

To provide uniform support beneath the proposed slab-on-grade, we recommend that the floor slabs be underlain by a minimum of 6-inch of free draining (a maximum particle size of ¾ inch with less than 5 percent material passing no.200 sieve) well-graded or crushed aggregates which should be covered with a durable plastic membrane or a vapor barrier/retarders (e.g. visqueen). If vapor retarders are utilized, the contractor must follow appropriate slab finishing and curing methods to reduce the risk of slab curling.

If the concrete slab will be subjected to vehicular loads and moisture transmission is not a concern, the concrete slab should be underlain with at least 6 inches of aggregate base course compacted to a minimum of 95 % of its maximum dry density based on ASTM Test method D1557.

4.2 Lateral Earth Pressures and Retaining Walls

Unsupported walls retaining horizontal backfill maybe designed using an active equivalent fluid density of 40 psf/ft. of depth. Fully constrained walls may be designed for an at-rest equivalent fluid density of 60 psf/ft. of depth. Wall design should include any excess loads from sloping backfill or surcharge loads. Expansive soils should not be utilized for backfill against the walls. We recommend that at least 12 inches of the backfill against the wall should consist of permeable fill, such as 3/4-inch crushed aggregates, extending from the bottom to about 12 inches below top the of wall. The upper12 inches of backfill should consist of native fine-grained soils, concrete, asphalt pavement, or other suitable backfill to minimize surface drainage into the wall drain system.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free draining gravel, or a prefabricated drainage system. Perforated or slotted drainage pipes should be at least 3 inches in diameter should be placed with perforations/slots facing down and should discharge away from foundations and other structures. The pipes should be placed no higher than 6 inches above the heel of the wall in the middle of a drainage blanket and drained to appropriate discharge area.

The recommended lateral earth pressures above do not include the effects of the hydrostatic water pressures that may be generated by surface water that may be accumulated behind the retaining walls; or loads imposed by construction equipment, foundations, or roadway traffic. The above earth pressures are unfactored. So, a safety factor of at least 1.50 should be considered in the design.

4.3 Pavement

Concrete or asphalt pavements should match any adjoining pavements. Concrete pavements shall be reinforced in accordance with design engineers' recommendations. In addition, all pavements should be placed over a minimum of 6 inches of road base compacted to a minimum of 95% of the soil maximum dry density in accordance with ASTM – D1557. Pavement thicknesses shall be per the project design drawings. All paved areas should be proof rolled with a heavily loaded truck or steel drum roller to assess for soft soils and deflecting areas. All soft or deflection areas should be removed and replaced with compacted road base.

4.4 Infiltration Testing

Infiltration tests were performed in boring B-06 at depths of 4.5, 10.5, and 15.0 feet BEG. Drilling augers were advanced to target depths prior to infiltration testing. Immediately after reaching the target depth, the borehole was pre-soaked with water for 15-mins. Infiltration test were performed for 30-mins; wherein, water drawdown was recorded every 5-mins. Upon completion of infiltration test at target depths of 4.5 and 10.5 feet BEG, the casings were advance to the next soil sampling depths and infiltration test levels. At completion of infiltration test at 15-feet BEG, the casings were removed and the boring was backfilled using the drilling spoils and leveled with surrounding grades.

The measured infiltration rates are shown in the Table below.

TABLE 5: INFILTRATION TEST RESULTS

Hole No.	Depth (feet)	Soil Description	Infiltration Rate (inch/min)	
			Average	Last Rate
B-06	4.50	Limestone	0.564	0.408
B-06	10.50	Limestone	0.412	0.32
B-06	15.00	Limestone	1.452	1.224

Based on the above infiltration test results, OYO recommend using the average infiltration rates and applying a factor of safety of 2.00. It appears that the underlying limestone is generally permeable and weak, which may have contained some voids or cavities that may propagate into bigger holes overtime such as sink holes, and basically may affect the building foundations. The proposed ponding basin extension must comply with the Guam EPA regulations, to include the restrictions associated with preventing mosquito breeding and development of large size cavities or sink holes over time.

Our experience indicates that there is a relatively high incidence of failure of infiltration facilities to achieve the designed infiltration rate. There are several reasons for this, but they can typically be grouped into two primary categories those related to the in-situ soil conditions and those related to construction practices.

One soil condition of importance is the basic soil classification, often expressed by grain size, or textural analysis as well as plasticity testing. Slight changes in the gradation of soil can result in notable changes in infiltration rate. Permeability which is very similar to infiltration rate varies by over five orders of magnitude from sands to clays. Infiltration rates that are typically considered suitable for infiltration practices vary by just over one order of magnitude, making suitable soils a small subset of all soils. Additionally, the undisturbed soil has a structure or fabric that includes pores and features that are the result of natural processes. This soil fabric develops over time and is influenced by plant growth and other biological processes and this fabric often governs the infiltration rate. Both the soil classification and the fabric can change rapidly with elevation/depth in the soil profile. Hence results of testing that is performed at any elevation other than the invert elevation of the facility can be misleading, even when different by only a few inches.

The effective infiltration rate of a facility is also very sensitive to construction practices. The general principal is that soils which become disturbed do not typically infiltrate as well as

undisturbed soils. Since testing is performed on undisturbed soils, this creates a potential for unexpectedly low field infiltration rates in completed facilities. This makes grading of infiltration basins a challenge. Trafficking of earth moving equipment used to excavate basins can disturb the native soil at the base of the facility. This will cause the fabric described above to be destroyed, resulting in lower permeability. Where fill materials are placed in a basin, or where construction traffic compacts native soils, excess compaction will reduce permeability. Since contractors are typically encouraged to achieve high levels of compaction, this creates the potential for problems. Using the term broadly, this "disturbance" can also include sedimentation that occurs during construction. If at any stage during construction the basin receives runoff that carries sediment, it can clog pores in the native soils rendering them less permeable.

Beyond the disturbance of the native soils and compaction of soils placed in basin bottoms, the composition of any soils placed in basin bottoms is very important. The "engineered" soils placed in the bottom of some facilities consist of a combination of sand, organic matter, and site soils. Getting the proportions of these materials right so that they have the desired infiltration capacity as well as the ability to support plant life and meet any other design requirements can be a challenge. In particular, site soils that are included can be quite variable in composition, and the blending of the soils on site can result in uneven mixing, even when done conscientiously.

Consequently, verification testing of infiltration rates should be required at the time of construction to confirm the design assumptions. This testing should include the native subgrade as well as engineered/amended soils, if present. Otherwise, the system may fail to meet the design intent.

4.5 Site Preparation and Earthwork

In general, all areas of the proposed development should be cleared of all vegetation, trees and roots, rubble, rubbish, and loose or soft soils. Any loose soils and buried structures, such as utility lines, should be properly removed and the resulting excavations backfilled. After demolition activities, it is recommended that the disturbed soils be removed and/or recompacted. Any other buried structures should be removed in accordance with the recommendations of the geotechnical engineer.

In order to provide a uniform support to the planned footings, it is recommended that following stripping, fill removal, and/or demolition activities, at least the upper 12 inches of the disturbed surfaces should be scarified for re-compaction and/or backfilling. The limits of the over-excavation/re-compaction should extend at least 12 and 36 inches horizontally beyond the building and foundation areas.

Prior to backfilling, the exposed subgrade should be proof-rolled to verify the stability. Any soft

or deflecting soils should be re-excavated and replaced with dryer soils and recompacted to the required density.

Utility trench backfill placed in areas adjacent to buildings and exterior slabs, or in pavement areas should be compacted to at least 95 percent of its maximum dry density based on ASTM Test Method D1557. Pipe bedding should be in accordance with the pipe manufacturer's recommendations.

OYO recommends that all earthwork activities and foundation preparation be documented by a qualified engineering technician or engineer under the supervision of a licensed engineer. The documentation should include the assessment of subgrades, foundation bearing soils and testing of compacted fill/backfill materials to verify the work is completed in accordance with the above recommendations.

4.5.1 Engineered Fill Material

Excluding the topsoil, the upper on-site soils, the fill materials generally consist of sandy silty limestone gravelly soils, and the limestone layer can be used as non-expansive Engineered Fill or Structural Fill as long as it satisfies the engineering fill parameters shown in **Table 6**.

Imported soils for use as non-expansive engineered fill or select structural fill should consist generally of soils meeting the following characteristics:

TABLE 6: ENGINEERED FILL PARAMETERS

Liquid Limit	25 maximum
Plasticity Index	6 maximum
Percent passing No. 200 sieve	15 maximum
Max. Size of Aggregate	1.5 inches

Approved fill materials should be placed in loose lifts not more than 8 inches thick, moisture conditioned as necessary, and compacted to achieve at least 95 percent of its maximum dry density based on ASTM Test Method D1557, with a dense and unyielding surface. Any yielding soils should be excavated, air-dried to near optimum moisture, and recompacted to be dense and unyielding. However, this method may not be feasible if construction occurs during wet seasonal conditions. Very moist to wet soils will deflect 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 (possibly in combination with a geotextile 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.

4.5.2 Temporary Cut and Fill Slope Reconstruction

It is recommended that the limestone rock can be cut almost vertical similar to several existing hillside slopes in the vicinity of Barrigada, Mangilao, Tamuning, and Tumon, which exposed the same type of limestone formations, and have no incident of any slope failure or instability observed. However, the stability of a slope is affected by some external factors such as rainfall intensity, surcharge loadings, earthquakes, and change in engineering and lithologic properties of the limestone rock, which may need to be addressed and properly mitigated. Based on the above, we recommend that the temporary cut slope be performed in increments, such that the initial cut slope should be cut a maximum of 1H:5V (horizontal to vertical) slope ratio. This will allow some time for the exposed cut to be evaluated by a Geotechnical Engineer first if the exposed limestone is generally massive and hard, and well cemented enough to be excavated to a steeper cut. If it is confirmed that the limestone is stable, steeper cuts may be allowed to near vertical as required. The excavation should be performed in a neat manner as much as possible. Any boulders/cobbles that may be exposed should be cut neatly, such that the cut slope should not have any concaving areas that will promote surface erosion of the cut slope. All excavations should be in accordance with OSHA regulations.

It is also recommended that the cut slope should be observed right after any heavy rain or typhoon or earthquake to check for any sign of erosion, seepage, cracks that may have been developed.

4.5.3 Erosion Control and Construction Dewatering

Soil erosion can occur on even the gentlest slopes when the project site is cleared and graded, resulting to the removal of the existing vegetation and the disturbed upper soils were carried down by the run-off water during rainfall or storm event. In addition, concentrated water run-off could be more erosive and will result to gullying, especially along the steeper slopes. Therefore, proper erosion and sediment control measures will have to installed at the site.

At the time of the investigation, no groundwater was encountered in our test borings. As such, groundwater will likely not be of a concern. Water may be an issue if water is introduced into excavations due to surface runoff and local precipitation during construction. Our experience indicates that the foundation and subgrade bearing soils encountered on-site will soften considerably when exposed to free water. Also, water that reacts with decaying vegetations creates a slightly acidic water that moves thru spaces and cracks underground slowly dissolving limestones and creating networks of voids and cavities. In order to avoid such instances, the contractor should divert the water out of the excavations and keep it dry. Methods such as sloping, ditching, and berming should be used to control surface water at the site.

Water should not be allowed to collect in the foundation excavation, or on prepared subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped to a sump in one corner to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site surface drainage should be provided to reduce infiltration of surface water around the perimeter of the construction. The grades should be sloped away from the structure and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill areas.

For the purposes of managing water that may enter an excavation, we recommend that collection pits with pumps be used to remove the water from the excavation. The sump pits should be backfilled with open graded stone (AASHTO #57 recommended) and should be surrounded by a properly graded filter medium. The purpose of the filter medium is to prevent clogging of the drainage system by the infiltration of fine-grained soils. Pumping from the sump pits should be done with care to prevent the loss of soil fines, development of soil boils, or instability of slopes. We must emphasize that dewatering requirements will be dictated by groundwater conditions at the time of construction and may require more aggressive techniques than pumping from a sump pit. The contractor should use a technique or combination of techniques which achieve the desired results under actual field conditions.

If applicable, the contractor may provide swales along the upstream areas of the slopes leading to the ponding basins and depression areas should be constructed immediately, so that these can prevent the direct flow of water run-off toward the ponding/sediment basins during heavy rains. The swales should be designed such that water flow is reduced and/or controlled before entering into the ponding basins.

5 TESTING AND INSPECTION

It is recommended that the earthwork activities and foundation preparations should be performed under our field monitoring and inspection program to confirm that the actual subsurface conditions are consistent with the exploratory fieldwork, and also to verify that the intent of our recommendations is incorporated into the project design and construction. Further investigation is suggested using Ground Penetrating Radar (GPR) in order to identify the presence of any silt pockets or sinkholes up to a depth of 50 feet below the proposed building foundation elevation. If unsuitable pockets or sinkholes are identified, probing and grouting ground improvement technique is advised.

5.1 Probe Drilling and Grouting – Building Foundations

Although voids or cavities were not encountered in any of the test borings, there were several sink holes or natural depressions which were identified in other areas within the general vicinity. As such, it is recommended that probing and grouting be performed for the building foundations to detect if any significant cavities might be present below the foundation foot prints. One probe hole must be provided for each 48.5 square foot of footing area, and one probe hole for each smaller footing. Probe hole depth should be at least 10 feet deep below bottom of the isolated spread footings and 10 ft center to center along the centreline of the continuous footings to a depth of 10 feet below bottom of the continuous footing.

Probe drilling records, such as drill rates in minutes/seconds per foot, drilling behaviour, and observation of the cuttings shall be recorded and evaluated by the geotechnical engineer. All probe holes shall be backfilled with a high slump sand-cement mixture or a low strength concrete thoroughly rodded for complete backfilling of the holes. The sand-cement grout shall have a minimum 28-day compressive strength of at least 1450 psi.

Where it is judged that significant voids or weak pockets are encountered in the probe holes, it is recommended that further evaluation must be performed to determine if additional probe holes is required to strengthen the underlying weak subsoil/rock and minimize the settlement of the building foundations.

5.2 Ground Penetrating Radar (GPR) Survey

As an alternative for Probing and Grouting, we recommend performing a ground penetrating radar (GPR) survey. Ground Penetrating Radar (GPR) survey method is a technique that uses high-frequency electromagnetic (EM) waves to acquire subsurface information. GPR detects changes in EM properties (dielectric permittivity, conductivity, and magnetic permeability) that in a geologic setting, are a function of soil and rock material, water content, and bulk density.

Radar is sensitive to changes in material composition, and detecting changes requires movement,

so that looking through stationary items using GPR, the equipment is moved in order for the radar to examine the specific area by looking for the differences in material composition.

The GPR measurements are used in geologic, engineering, hydrologic, and environmental applications. The GPR method is used to map geologic conditions that include depth of bedrock, depth to the water table, depth and thickness of soil strata on land and under fresh water, and the location of subsurface cavities and fractures in bedrock. Other applications include the location of objects such as pipes, drums, tanks, cables and boulders, mapping landfills, and trench boundaries. Although previously, GPR is ineffective for locating plastic conduits or concrete storm and sanitary sewers, the new GPR can ultimately able to determine these non-metallic objects, and the data images can be presented in either 2D or 3D presentations down to as deep as 35 feet.

Where it is judged that significant voids or weak pockets or anomalies are encountered, it is recommended that additional probe holes be drilled for further evaluation and/or to strengthen the underlying weak subsoil/rock and minimize the settlement of the building foundations.

6 REPORT LIMITATIONS

Our findings, observations, opinions, and recommendations presented in this report are based upon the information obtained by OYO Corp., Pacific from the limited soil investigation and measurements, visual observations, and field and laboratory tests performed at the proposed development site, with the assumption that the observed conditions do not vary significantly from those that were encountered in our field investigation. If any variations or undesirable conditions are encountered during construction, we should be notified immediately so that supplemental recommendations may be made. Other variations and conditions may exist which cannot fully be disclosed in this limited investigation. Therefore, the Owner should be aware that there is a practical limit to the usefulness of this report. If 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.

OYO warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area at the date of this report. No other warranties are implied or expressed.

The conclusions of this report are based on the information provided regarding the proposed developments of the site. If the proposed construction is relocated or redesigned, the conclusions in this report may not be appropriate. Therefore, OYO should be informed of any changes so that the recommendations maybe reviewed and re-evaluated. This report has been prepared for the exclusive use of **SSFM International** and its clients for the specific application of constructing the proposed **Engineering Building** located at University of Guam, Mangilao, Guam.

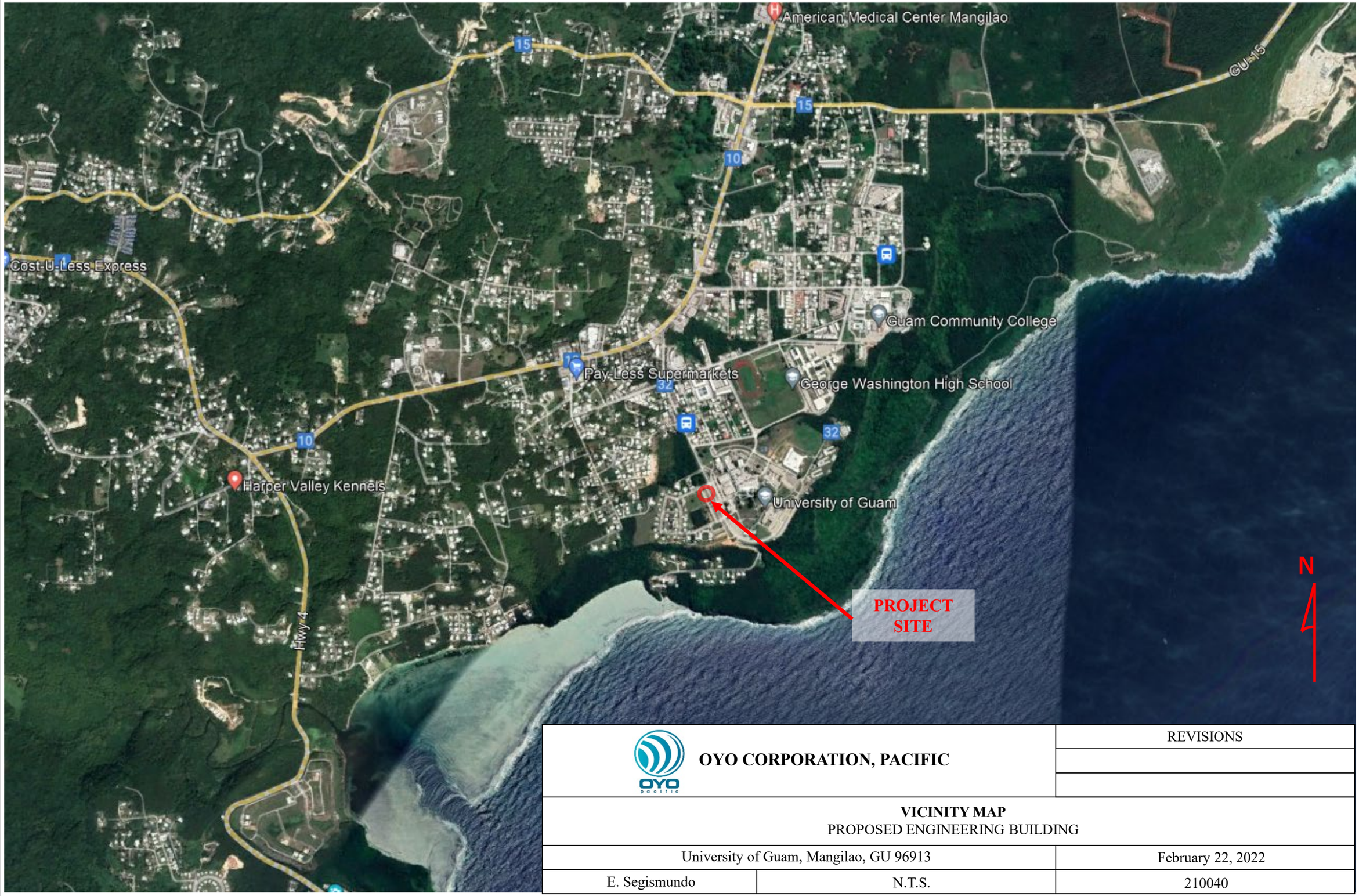
If you have any questions regarding this report or if we can be of further assistance, please do not hesitate to contact us.

Respectfully,

Thomas J. Krasovec, PE (Civil-2125)
Office Manager/ Executive Engineer

APPENDIX A

BORING LOCATION PLAN



OYO CORPORATION, PACIFIC		REVISIONS
VICINITY MAP PROPOSED ENGINEERING BUILDING		
University of Guam, Mangilao, GU 96913		February 22, 2022
E. Segismundo	N.T.S.	210040

LEGEND:

B-01 (60 FT) - DRILLED BOREHOLE

B-01 (60 FT) - BORING DEPTH

NOTES:
1. ALL BORINGS WEREADVANCED WITH HOLLOW-STEM AUGERS.
2. SPT SAMPLING WERE PERFORMED IN ALL BORINGS.
3. BORING DEPTHS ARE AS SHOWN IN THE FIGURE.
4. BORING SPOILS WERE USED TO BACKFILL THE BORE HOLES.
5. RAPID PERMEABILITY TEST WERE PERFORMED AT B-06 AT DEPTHS OF 4.5, 9.0 ANND 15.0 FEET BGL.

OYO CORPORATION, PACIFIC		REVISIONS
BORING LOCATION PLAN PROPOSED ENGINEERING BUILDINGS		
University of Guam, Mangilao, GU 96913		February 22, 2022
E. Segismundo	N.T.S.	210040

APPENDIX B

BOREHOLE LOGS

SOIL DESCRIPTION

Coordinates : 13.432411, 144.800927

Surface Elevation: 230 ft from Google Earth

Depth, M.	Depth, Ft.	Symbol	USCS	Samples	Blow / Ft.	Lab Test: N	Lab Test: MC	Lab Test: Other	Ground Water	Depth, Ft.
	0				58	50/6"	9.54	5.83	SA	GWT not encountered	0
1			LS		82	50/4"	11.16		SA		
					50/5"				AL		
2					50/4"		6.25		SA		
	10				50/5"						10
3					41		6.34				
4					50/5"				AL		
5											
6	20				50/2"		5.83		SA		20
7											
8					50/6"		3.82				
9											
10					50/6"		4.12				
11	30										30
12					72				AL		
13											
14	40				71		5.65		SA		40
15											
16					72		5.10				
17	50										50
18					36				AL		
19					44		7.90		SA		
20	60		END								60
	70										70

Asphalt (approximately 3")

SANDY SILTY GRAVEL (GM) - white brown with red, medium dense, moist, fine to coarse grained, with limestone gravel fragments (POSSIBLE FILL)

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

weak zone at approximately 4.75 to 10.75 feet BEG

very weak zone at approximately 10.75 to 13.25 feet BEG

weak zone at approximately 16.00 to 32.50 feet BEG

very weak zone at approximately 35.00 to 60.00 feet BEG

End of boring at 60.00 feet

Groundwater was not encountered

Cave-in depth at 51.50 feet

Standard Penetration Resistance

■ Blows per Ft.

○ % Water Cont.

0 10 20 30 40 50 60

Date: 3/9/2022

File: C:\Super\log\OYO Corporation, Pacific\210040 - UOG Engineering & WERI Bldg, Mangilao, GU\B01.Logs_B1.B1 EN.GIS (02-14-22).log

SuperLog Graphics Software, USA www.civiltech.com

Date Completed: 01 February 2022

Driller: APDI - George Omgebei

Equipment: Diedrich

Drilling Method: Hollow Stem Auger (HSA)

Logged by: E.Segismundo/ A.Arpilleda

Proposed Engineering Building
University of Guam
Mangilao, Guam

OYO CORPORATION,PACIFIC

Tumon Guam

Borehole No. B-01

Project No. 210040 **PLATE No. :**

SOIL DESCRIPTION

Coordinates : 13.432443, 144.800834

Surface Elevation: 229 ft from Google Earth

Depth, M.	Depth, Ft.	Symbol	USCS	Samples	Blow / Ft.	Lab Test: N	Lab Test: MC	Lab Test: Other	Ground Water	Depth, Ft.
	0				50/5"			AL		0
			LS		50/5"	4.12				
1					50/5"			AL		10
					50/5"	6.87		SA		
2					50/2"					
					53	8.82		SA		
3	10				50/3"			AL		
					50/3"					
4										
					50/5"					
5										
6	20									20
7										
8					50/2"			AL		
9										
10										
11					64	4.57		SA		
12	40									40
13										
14					50/5"	5.24				
15										
16	50									50
17					44	6.66		SA		
18										
	60		END							60
19										
20										
	70									70

Asphalt (approximately 3")

SANDY SILTY GRAVEL (GM) - white brown with red, medium dense, moist, fine to coarse grained, with limestone gravel fragments (POSSIBLE FILL)

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, moist

very weak zone at approximately 7.75 to 9.75 feet BEG

weak zone at approximately 9.75 to 30.00 feet BEG

very weak zone at approximately 35.00 to 40.00 feet BEG

weak zone at approximately 46.00 to 50.00 feet BEG

very weak zone at approximately 55.00 to 60.00 feet BEG

End of boring at 60.00 feet

Groundwater was not encountered

Cave-in depth at 41.50 feet

GWT not encountered

Standard Penetration Resistance

■ Blows per Ft.

○ % Water Cont.

0 10 20 30 40 50 60

Date: 3/9/2022

File: C:\Super\log\OYO Corporation, Pacific\210040 - UOG Engineering & WERI Bldg, Mangilao, GU\BH Logs_B1-B9 EN.GIS (02-16-22).log

Date Completed: 01 February 2022

Driller: APDI - George Omgebei

Equipment: Diedrich

Drilling Method: Hollow Stem Auger (HSA)

Logged by: A.Arpilleda

SuperLog©Wilfech Software, USA www.oyotech.com

Proposed Engineering Building
University of Guam
Mangilao, Guam

OYO CORPORATION,PACIFIC

Tumon Guam

Borehole No. B-02

Project No. 210040 **PLATE No. :**

SOIL DESCRIPTION

Coordinates : 13.432264, 144.800792

Surface Elevation: 228 ft from Google Earth

Depth, M.	Depth, Ft.	Symbol	USCS	Samples	Blow / Ft. N	Lab Test MC	Lab Test Other	Ground Water	Depth, Ft.
	0				55	30.27	SA		0
			LS		54	5.46	SA		
	1				50/3"		AL		
					50/3"	6.56			
	2				50/6"	4.93			
					81		AL		
	3				50/4"	9.91	SA		10
	10				68	8.57			
	4								
	5				78		AL		
	6								20
	7								
	8				64	11.49	SA		
	9								
	10								
	11				50/5"	7.51			
	12								40
	40								
	13								
	14				53		AL		
	15								
	16								50
	50								
	17				20	14.08	SA		
	18								
	60		END						60
	19								
	20								
	70								70

ELASTIC SILT (MH) - red brown, medium stiff, moist, fine grained, with sand and limestone gravel fragments, with roots (TOPSOIL - approximately 5")

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

weak zone at approximately 3.50 to 7.50 feet BEG

very weak zone at approximately 7.50 to 30.00 feet BEG

weak zone at approximately 36.00 to 40.00 feet BEG

very weak zone at approximately 45.00 to 60.00 feet BEG

End of boring at 60.00 feet

Groundwater was not encountered

Cave-in depth at 46.00 feet

GWT not encountered

Standard Penetration Resistance

■ Blows per Ft.
○ % Water Cont.

0 10 20 30 40 50 60

Date: 3/9/2022

File: C:\SuperLog\OYO Corporation, Pacific\210040 - UOG Engineering & WERI Bldg, Mangilao, GU\B H Logs_B1-B9 EN GS (02-16-22).log

SuperLog Graphic Software, USA www.civiltech.com

Date Completed: 03 February 2022
Driller: APDI - George Omgebei
Equipment: Diedrich
Drilling Method: Hollow Stem Auger (HSA)
Logged by: E.Segismundo

Proposed Engineering Building
University of Guam
Mangilao, Guam

OYO CORPORATION,PACIFIC

Tumon Guam

Borehole No. B-03

Project No. 210040 PLATE No. :

SOIL DESCRIPTION

Coordinates : 13.432118, 144.800839

Surface Elevation: 227 ft from Google Earth

ELASTIC SILT (MH) - red brown, stiff, moist, fine grained with sand and limestone gravel fragments, with roots (TOPSOIL - approximately 3")

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

weak zone at approximately 2.00 to 10.50 feet BEG

very weak zone at approximately 10.50 to 20.00 feet BEG

weak zone at approximately 25.00 to 40.00 feet BEG

very weak zone at approximately 45.00 to 60.00 feet BEG

End of boring at 60.00 feet

Groundwater was not encountered

Cave-in depth at 41.25 feet

Depth, M.	Depth, Ft.	Symbol	USCS	Samples	Blow / Ft.	Lab Test: MC	Lab Test: Other	Ground Water	Depth, Ft.
	0				N				0
1			MH		20		AL		
			LS		50/3"				
					50/6"				
					50/4"	5.22	SA		
2					50/4"		AL		
					50/5"	4.42			
3	10				50/6"	5.16		GWT not encountered	10
					57		AL		
4									
					74	10.15	SA		
5									
6	20								20
7									
8					50/4"	2.97			
9									
10									
11					50/6"	4.50			
12	40								40
13									
14					66		AL		
15									
16									
17	50				52	9.74	SA		50
18									
	60		END						60
19									
20									
	70								70

Standard Penetration Resistance

■ Blows per Ft.

○ % Water Cont.

0 10 20 30 40 50 60

Date Completed: 03 February 2022

Driller: APDI - George Omgebei

Equipment: Diedrich

Drilling Method: Hollow Stem Auger (HSA)

Logged by: E.Segismundo

Proposed Engineering Building
University of Guam
Mangilao, Guam

OYO CORPORATION,PACIFIC

Tumon Guam

Borehole No. B-04

Project No. 210040 **PLATE No. :**

SOIL DESCRIPTION

Coordinates : 13.432210, 144.801027

Surface Elevation: 229 ft from Google Earth

Depth, M.	Depth, Ft.	Symbol	USCS	Samples	Blow / Ft.	Lab Test: N	Lab Test: MC	Lab Test: Other	Ground Water	Depth, Ft.
	0									0
			SM		50/5"		9.29	SA		
			LS		48		12.15			
1					72		6.14			
					37			AL		
2					45		8.71	SA		
					77		9.40			
					59			AL		
3	10				73		7.61	SA		10
4										
5					50/6"		6.20			
6	20									20
7										
8					50/3"		5.35			
9										
10										
11	30				67			AL		30
12										
13										
14					50/3"		5.53	SA		
15										
16	50									50
17					59		8.06			
18										
	60		END							60
19										
20										
	70									70

Asphalt (approximately 3")

SILTY SAND (SM) - white brown with red, dense to very dense, moist, fine to coarse grained, with limestone gravel fragments (POSSIBLE FILL)

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

weak zone at approximately 15.50 to 30.00 feet BEG

very weak zone at approximately 35.00 to 40.00 feet BEG

weak zone at approximately 46.00 to 50.00 feet BEG

very weak zone at approximately 55.00 to 60.00 feet BEG

End of boring at 60.00 feet

Groundwater was not encountered

Cave-in depth at 47.00 feet

GWT not encountered

Standard Penetration Resistance

■ Blows per Ft.

○ % Water Cont.

0 10 20 30 40 50 60

Date Completed: 02 February 2022

Driller: APDI - George Omgebei

Equipment: Diedrich

Drilling Method: Hollow Stem Auger (HSA)

Logged by: E.Segismundo

Proposed Engineering Building
University of Guam
Mangilao, Guam

OYO CORPORATION,PACIFIC

Tumon Guam

Borehole No. B-05

Project No. 210040 **PLATE No. :**

SOIL DESCRIPTION

Coordinates : 13.431952, 144.800821

Surface Elevation: 226 ft from Google Earth

Depth, M.	Depth, Ft.	Symbol	USCS	Samples	Blow / Ft.	Lab Test		Ground Water	Depth, Ft.
					N	MC	Other		
	0		CM		50/6"	14.35	SA		0
			LS		50/5"	5.42			
	1				50/5"				
	5				50/5"		AL		5
	2				50/5"	13.03	SA		
					50/4"	13.10			
	3				50/5"		AL		10
	10								
	4				50/5"	12.61	SA		
	15		END						15
	5								
	6								20
	20								
	7								
	25								25
	8								
	9								30
	30								
	10								
	35								35

SANDY SILTY GRAVEL (GM) - red brown, very dense, moist, fine to coarse grained, with limestone gravel fragments, with roots (TOPSOIL - approximately 5")

LIMESTONE - white brown, weak highly to moderately weathered, fine to coarse grained, moist

Performed infiltration test at 4.50 feet

Performed infiltration test at 9.00 feet

End of boring at 15.00 feet

Groundwater was not encountered

Performed infiltration test at 15.00 feet

Cave-in depth at 10.00 feet

GWT not encountered

Standard Penetration Resistance

■ Blows per Ft.

○ % Water Cont.

0 10 20 30 40 50 60

Date Completed: 07 February 2022

Driller: APDI - Roman Mikel

Equipment: Mobil Drill B61

Drilling Method: Hollow Stem Auger (HSA)

Logged by: E.Segismundo

Proposed Engineering Building
University of Guam
Mangilao, Guam

OYO CORPORATION,PACIFIC

Tumon Guam

Borehole No. B-06

Project No. 210040 **PLATE No. :**

APPENDIX C

LABORATORY TEST RESULTS

SUMMARY OF LABORATORY TEST RESULTS

Location/ Sample No.	Sample Depth (ft)		Native Moisture Content	Gravel Content	Sand Content	Clay & Silt Content	Liquid Limit	Plastic Limit	Plastic Index
	From	To	(%)	(%)	(%)	(%)	(%)	(%)	(%)
B-01/S-1	0.25	1.75	9.54	40.9	36.3	22.8	-	-	-
B-01/S-2	1.75	2.25	5.83	-	-	-	-	-	-
B-01/S-3	3.25	4.75	11.16	23.6	50.2	26.2	-	-	-
B-01/S-4*	4.75	5.08	-	-	-	-	-	-	-
B-01/S-5	6.25	6.67	-	-	-	-	NP	NP	NP
B-01/S-6	7.75	8.58	6.25	38.2	42.6	19.2	-	-	-
B-01/S-7*	9.25	9.67	-	-	-	-	-	-	-
B-01/S-8	10.75	12.00	6.34	-	-	-	-	-	-
B-01/S-9	15.00	16.42	-	-	-	-	NP	NP	NP
B-01/S-10	20.00	20.67	5.83	43.0	40.3	16.7	-	-	-
B-01/S-11	25.00	25.50	3.82	-	-	-	-	-	-
B-01/S-12	30.00	30.50	4.12	-	-	-	-	-	-
B-01/S-13	35.00	36.50	-	-	-	-	NP	NP	NP
B-01/S-14	40.00	41.50	5.65	34.0	49.7	16.3	-	-	-
B-01/S-15	45.00	46.50	5.10	-	-	-	-	-	-
B-01/S-16	50.00	51.50	-	-	-	-	NP	NP	NP
B-01/S-17	55.00	56.50	7.90	39.5	40.2	20.3	-	-	-
B-02/S-1	0.25	1.67	-	-	-	-	NP	NP	NP
B-02/S-2	1.75	2.00	4.12	-	-	-	-	-	-
B-02/S-3	3.25	4.50	-	-	-	-	NP	NP	NP
B-02/S-4	4.75	5.67	6.87	29.0	51.0	19.9	-	-	-
B-02/S-5*	6.25	6.42	-	-	-	-	-	-	-
B-02/S-6	7.75	9.25	8.82	32.5	45.8	21.7	-	-	-
B-02/S-7	9.25	10.00	-	-	-	-	NP	NP	NP
B-02/S-8*	10.75	11.00	-	-	-	-	-	-	-
B-02/S-9*	15.00	15.25	-	-	-	-	-	-	-
B-02/S-10	25.00	25.13	-	-	-	-	NP	NP	NP
B-02/S-11	35.00	36.50	4.57	37.6	47.8	14.6	-	-	-
B-02/S-12	45.00	46.42	5.24	-	-	-	-	-	-
B-02/S-13	55.00	56.50	6.66	35.2	46.6	18.2	-	-	-

*Note: "NP" denotes as "Non-Plasitc" soils; *Sample was not subjected to any laboratory test;*

OYO CORPORATION, PACIFIC

Project:	**Proposed UOG Engineering Building**		
Location:	Mangilao, Guam		
Client:	SSFM International	Boreholes:	B-01 to B-02
Proj. No.:	210040	Plate No.	1 of 3

SUMMARY OF LABORATORY TEST RESULTS

Location/ Sample No.	Sample Depth (ft)		Native Moisture Content	Gravel Content	Sand Content	Clay & Silt Content	Liquid Limit	Plastic Limit	Plastic Index
	From	To	(%)	(%)	(%)	(%)	(%)	(%)	(%)
B-03/S-1	0.00	1.50	30.27	18.5	19.9	61.6	-	-	-
B-03/S-2	1.50	3.00	5.46	53.4	32.3	14.4	-	-	-
B-03/S-3	3.00	4.25	-	-	-	-	NP	NP	NP
B-03/S-4	4.50	5.75	6.56	-	-	-	-	-	-
B-03/S-5	6.00	7.00	4.93	-	-	-	-	-	-
B-03/S-6	7.50	9.00	-	-	-	-	NP	NP	NP
B-03/S-7	9.00	10.33	9.91	29.8	48.6	21.6	-	-	-
B-03/S-8	10.50	12.00	8.57	-	-	-	-	-	-
B-03/S-9	15.00	16.50	-	-	-	-	NP	NP	NP
B-03/S-10	25.00	26.50	11.49	30.0	42.3	27.7	-	-	-
B-03/S-11	35.00	36.42	7.51	-	-	-	-	-	-
B-03/S-12	45.00	46.50	-	-	-	-	NP	NP	NP
B-03/S-13	55.00	56.50	14.08	34.1	45.8	20.1	-	-	-
B-04/S-1	0.00	1.50	-	-	-	-	77	59	18
B-04/S-2*	1.50	2.25	-	-	-	-	-	-	-
B-04/S-3*	3.00	3.50	-	-	-	-	-	-	-
B-04/S-4	4.50	5.33	5.22	36.7	47.0	16.3	-	-	-
B-04/S-5	6.00	6.33	-	-	-	-	NP	NP	NP
B-04/S-6	7.50	7.92	4.42	-	-	-	-	-	-
B-04/S-7	9.00	9.50	5.16	-	-	-	-	-	-
B-04/S-8	10.50	12.00	-	-	-	-	NP	NP	NP
B-04/S-9	15.00	16.50	10.15	28.3	50.3	21.4	-	-	-
B-04/S-10	25.00	25.33	2.97	-	-	-	-	-	-
B-04/S-11	35.00	36.00	4.50	-	-	-	-	-	-
B-04/S-12	45.00	46.50	-	-	-	-	NP	NP	NP
B-04/S-13	55.00	56.50	9.74	28.8	47.2	24.0	-	-	-

*Note: "NP" denotes as "Non-Plasitc" soils; *Sample was not subjected to any laboratory test;*

SUMMARY OF LABORATORY TEST RESULTS

Location/ Sample No.	Sample Depth (ft)		Native Moisture Content	Gravel Content	Sand Content	Clay & Silt Content	Liquid Limit	Plastic Limit	Plastic Index
	From	To	(%)	(%)	(%)	(%)	(%)	(%)	(%)
B-05/S-1	0.25	1.67	9.29	31.0	47.1	21.8	-	-	-
B-05/S-2	1.75	3.25	12.15	-	-	-	-	-	-
B-05/S-3	3.25	4.75	6.14	-	-	-	-	-	-
B-05/S-4	4.75	6.25	-	-	-	-	NP	NP	NP
B-05/S-5	6.25	7.75	8.71	35.5	44.9	19.5	-	-	-
B-05/S-6	7.75	9.25	9.40	-	-	-	-	-	-
B-05/S-7	9.25	10.75	-	-	-	-	NP	NP	NP
B-05/S-8	10.75	12.25	7.61	41.0	40.7	18.3	-	-	-
B-05/S-9	15.00	16.00	6.20	-	-	-	-	-	-
B-05/S-10	25.00	25.25	5.35	-	-	-	-	-	-
B-05/S-11	35.00	36.50	-	-	-	-	NP	NP	NP
B-05/S-12	45.00	46.25	5.53	35.2	46.9	17.9	-	-	-
B-05/S-13	55.00	56.50	8.06	-	-	-	-	-	-
B-06/S-1	0.00	1.00	14.35	38.7	33.2	28.2	-	-	-
B-06/S-2	1.50	2.42	5.42	-	-	-	-	-	-
B-06/S-3*	3.00	3.42	-	-	-	-	-	-	-
B-06/S-4	4.50	4.92	-	-	-	-	NP	NP	NP
B-06/S-5	6.00	6.92	13.03	29.3	49.5	21.2	-	-	-
B-06/S-6	7.50	7.83	13.10	-	-	-	-	-	-
B-06/S-7	9.00	9.42	-	-	-	-	NP	NP	NP
B-06/S-8	13.50	14.42	12.61	33.8	44.3	21.9	-	-	-

*Note: "NP" denotes as "Non-Plasitc" soils; *Sample was not subjected to any laboratory test;*

Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

(ASTM D 2216 - 19)

Client	**SSFM International**	Project No.:	210040
Attention:		Date:	8-Feb-22
Project Name	**Proposed UOG Engineering Building**	Date Recvd.:	2-Feb-22
Location	Mangilao, Guam		

Boring/Test Pit No.	-	**B-01/S-1**	**B-01/S-2**	**B-01/S-3**	**B-01/S-6**	**B-01/S-8**	**B-01/S-10**	**B-01/S-11**
Sample Depth	ft	0.25 - 1.75	1.75 - 2.25	3.25 - 4.75	7.75 - 8.58	10.75 - 12.00	20.00 - 20.67	25.00 - 25.50
Soil Type								
Tare No.	-	-	-	-	-	-	-	-
Tare Weight	g	186.7	187.2	187.2	187.9	192.9	188.9	186.6
Tare + Wet Soil	g	782.8	399.7	762.9	635.1	726.3	446.8	496.3
Tare + Dry Soil	g	730.9	388	705.1	608.8	694.5	432.6	484.9
Wt. of Wet Soil	g	596.1	212.5	575.7	447.2	533.4	257.9	309.7
Wt. of Dry Soil	g	544.2	200.8	517.9	420.9	501.6	243.7	298.3
Moisture Lost	g	51.9	11.7	57.8	26.3	31.8	14.2	11.4
Moisture Content	%	9.54	5.83	11.16	6.25	6.34	5.83	3.82

Boring/Test Pit No.	-	**B-01/S-12**	**B-01/S-14**	**B-01/S-15**	**B-01/S-17**			
Sample Depth	ft	30.00 - 30.50	40.00 - 41.50	45.00 - 46.50	55.00 - 56.50			
Soil Type								
Tare No.	-	-	-	-	-			
Tare Weight	g	188	189.3	187.1	190			
Tare + Wet Soil	g	458.7	1013.3	1071.8	989.1			
Tare + Dry Soil	g	448	969.2	1028.9	930.6			
Wt. of Wet Soil	g	270.7	824	884.7	799.1			
Wt. of Dry Soil	g	260	779.9	841.8	740.6			
Moisture Lost	g	10.7	44.1	42.9	58.5			
Moisture Content	%	4.12	5.65	5.10	7.90			

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo

Approved by: T. Krasovec

Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

(ASTM D 2216 - 19)

Client	**SSFM International**	Project No.:	210040
Attention:		Date:	8-Feb-22
Project Name	**Proposed UOG Engineering Building**	Date Recvd.:	2-Feb-22
Location	Mangilao, Guam		

Boring/Test Pit No.	-	**B-02/S-2**	**B-02/S-4**	**B-02/S-6**	**B-02/S-11**	**B-02/S-12**	**B-02/S-13**	
Sample Depth	ft	1.75 - 2.00	4.75 - 5.67	7.75 - 9.25	35.00 - 36.50	45.00 - 46.42	55.00 - 56.50	
Soil Type								
Tare No.	-	-	-	-	-	-	-	
Tare Weight	g	550.5	554.9	557.4	555.2	560.2	561.9	
Tare + Wet Soil	g	666.8	1130.3	1297.3	1299.4	1118.6	1363	
Tare + Dry Soil	g	662.2	1093.3	1237.3	1266.9	1090.8	1313	
Wt. of Wet Soil	g	116.3	575.4	739.9	744.2	558.4	801.1	
Wt. of Dry Soil	g	111.7	538.4	679.9	711.7	530.6	751.1	
Moisture Lost	g	4.6	37	60	32.5	27.8	50	
Moisture Content	%	4.12	6.87	8.82	4.57	5.24	6.66	

Boring/Test Pit No.	-							
Sample Depth	ft							
Soil Type								
Tare No.	-							
Tare Weight	g							
Tare + Wet Soil	g							
Tare + Dry Soil	g							
Wt. of Wet Soil	g							
Wt. of Dry Soil	g							
Moisture Lost	g							
Moisture Content	%							

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo

Approved by: T. Krasovec

Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

(ASTM D 2216 - 19)

Client	**SSFM International**	Project No.:	210040
Attention:		Date:	8-Feb-22
Project Name	**Proposed UOG Engineering Building**	Date Recvd.:	2-Feb-22
Location	Mangilao, Guam		

Boring/Test Pit No.	-	**B-03/S-1**	**B-03/S-2**	**B-03/S-4**	**B-03/S-5**	**B-03/S-7**	**B-03/S-8**	**B-03/S-10**
Sample Depth	ft	0.00 - 1.50	1.50 - 3.00	4.50 - 5.75	6.00 - 7.00	9.00 - 10.33	10.50 - 12.00	25.00 - 26.50
Soil Type								
Tare No.	-	-	-	-	-	-	-	-
Tare Weight	g	564.6	555	564	560.4	561.2	559.1	550
Tare + Wet Soil	g	743.2	1159.1	1163.4	934.7	1195.4	1136.6	1255.3
Tare + Dry Soil	g	701.7	1127.8	1126.5	917.1	1138.2	1091	1182.6
Wt. of Wet Soil	g	178.6	604.1	599.4	374.3	634.2	577.5	705.3
Wt. of Dry Soil	g	137.1	572.8	562.5	356.7	577	531.9	632.6
Moisture Lost	g	41.5	31.3	36.9	17.6	57.2	45.6	72.7
Moisture Content	%	30.27	5.46	6.56	4.93	9.91	8.57	11.49

Boring/Test Pit No.	-	**B-03/S-11**	**B-03/S-13**					
Sample Depth	ft	35.00 - 36.42	55.00 - 56.50					
Soil Type								
Tare No.	-	-	-					
Tare Weight	g	557.5	558.4					
Tare + Wet Soil	g	1223.3	1144.3					
Tare + Dry Soil	g	1176.8	1072					
Wt. of Wet Soil	g	665.8	585.9					
Wt. of Dry Soil	g	619.3	513.6					
Moisture Lost	g	46.5	72.3					
Moisture Content	%	7.51	14.08					

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo

Approved by: T. Krasovec

Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

(ASTM D 2216 - 19)

Client	**SSFM International**	Project No.:	210040
Attention:		Date:	9-Feb-22
Project Name	**Proposed UOG Engineering Building**	Date Recvd.:	2-Feb-22
Location	Mangilao, Guam		

Boring/Test Pit No.	-	**B-04/S-4**	**B-04/S-6**	**B-04/S-7**	**B-04/S-9**	**B-04/S-10**	**B-04/S-11**	**B-04/S-13**
Sample Depth	ft	4.50 - 5.33	7.50 - 7.92	9.00 - 9.50	15.00 - 16.50	25.00 - 25.3	35.00 - 36.00	55.00 -56.50
Soil Type								
Tare No.	-	-	-	-	-	-	-	-
Tare Weight	g	550.2	564.5	558.3	562.1	555.7	552.1	555
Tare + Wet Soil	g	943.2	805.3	804.7	1287.9	694.2	1095.3	1305.6
Tare + Dry Soil	g	923.7	795.1	792.6	1221	690.2	1071.9	1239
Wt. of Wet Soil	g	393	240.8	246.4	725.8	138.5	543.2	750.6
Wt. of Dry Soil	g	373.5	230.6	234.3	658.9	134.5	519.8	684
Moisture Lost	g	19.5	10.2	12.1	66.9	4	23.4	66.6
Moisture Content	%	5.22	4.42	5.16	10.15	2.97	4.50	9.74

Boring/Test Pit No.	-							
Sample Depth	ft							
Soil Type								
Tare No.	-							
Tare Weight	g							
Tare + Wet Soil	g							
Tare + Dry Soil	g							
Wt. of Wet Soil	g							
Wt. of Dry Soil	g							
Moisture Lost	g							
Moisture Content	%							

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo

Approved by: T. Krasovec

Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

(ASTM D 2216 - 19)

Client	**SSFM International**	Project No.:	210040
Attention:		Date:	9-Feb-22
Project Name	**Proposed UOG Engineering Building**	Date Recvd.:	2-Feb-22
Location	Mangilao, Guam		

Boring/Test Pit No.	-	**B-05/S-1**	**B-05/S-2**	**B-05/S-3**	**B-05/S-5**	**B-05/S-6**	**B-05/S-8**	**B-05/S-9**
Sample Depth	ft	0.25 - 1.67	1.75 - 3.25	3.25 - 4.75	6.25 - 7.75	7.75 - 9.25	10.75 - 12.25	15.00 - 16.00
Soil Type								
Tare No.	-	-	-	-	-	-	-	-
Tare Weight	g	561.8	561.9	191	554.9	188.6	557.5	186.8
Tare + Wet Soil	g	1153.3	1180.5	812	1208	835.8	1232.2	702.2
Tare + Dry Soil	g	1103	1113.5	776.1	1155.7	780.2	1184.5	672.1
Wt. of Wet Soil	g	591.5	618.6	621	653.1	647.2	674.7	515.4
Wt. of Dry Soil	g	541.2	551.6	585.1	600.8	591.6	627	485.3
Moisture Lost	g	50.3	67	35.9	52.3	55.6	47.7	30.1
Moisture Content	%	9.29	12.15	6.14	8.71	9.40	7.61	6.20

Boring/Test Pit No.	-	**B-05/S-10**	**B-05/S-12**	**B-05/S-13**				
Sample Depth	ft	25.00 - 25.25	45.00 - 46.25	55.00 - 56.50				
Soil Type								
Tare No.	-	-	-	-				
Tare Weight	g	188	561.2	187.2				
Tare + Wet Soil	g	288.5	1176.2	837.4				
Tare + Dry Soil	g	283.4	1144	788.9				
Wt. of Wet Soil	g	100.5	615	650.2				
Wt. of Dry Soil	g	95.4	582.8	601.7				
Moisture Lost	g	5.1	32.2	48.5				
Moisture Content	%	5.35	5.53	8.06				

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo

Approved by: T. Krasovec

Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

(ASTM D 2216 - 19)

Client	**SSFM International**	Project No.:	210040
Attention:		Date:	9-Feb-22
Project Name	**Proposed UOG Engineering Building**	Date Recvd.:	8-Feb-22
Location	Mangilao, Guam - Near Stormwater Pond		

Boring/Test Pit No.	-	**B-06/S-1**	**B-06/S-2**	**B-06/S-5**	**B-06/S-6**	**B-06/S-8**		
Sample Depth	ft	0.00 - 1.00	1.50 - 2.42	6.00 - 6.92	7.50 - 7.83	13.50 - 14.42		
Soil Type								
Tare No.	-	-	-	-	-	-		
Tare Weight	g	563.9	192.7	555.2	188.9	550.6		
Tare + Wet Soil	g	784.6	494.2	1174.4	370.2	1066		
Tare + Dry Soil	g	756.9	478.7	1103	349.2	1008.3		
Wt. of Wet Soil	g	220.7	301.5	619.2	181.3	515.4		
Wt. of Dry Soil	g	193	286	547.8	160.3	457.7		
Moisture Lost	g	27.7	15.5	71.4	21	57.7		
Moisture Content	%	14.35	5.42	13.03	13.10	12.61		

Boring/Test Pit No.	-							
Sample Depth	ft							
Soil Type								
Tare No.	-							
Tare Weight	g							
Tare + Wet Soil	g							
Tare + Dry Soil	g							
Wt. of Wet Soil	g							
Wt. of Dry Soil	g							
Moisture Lost	g							
Moisture Content	%							

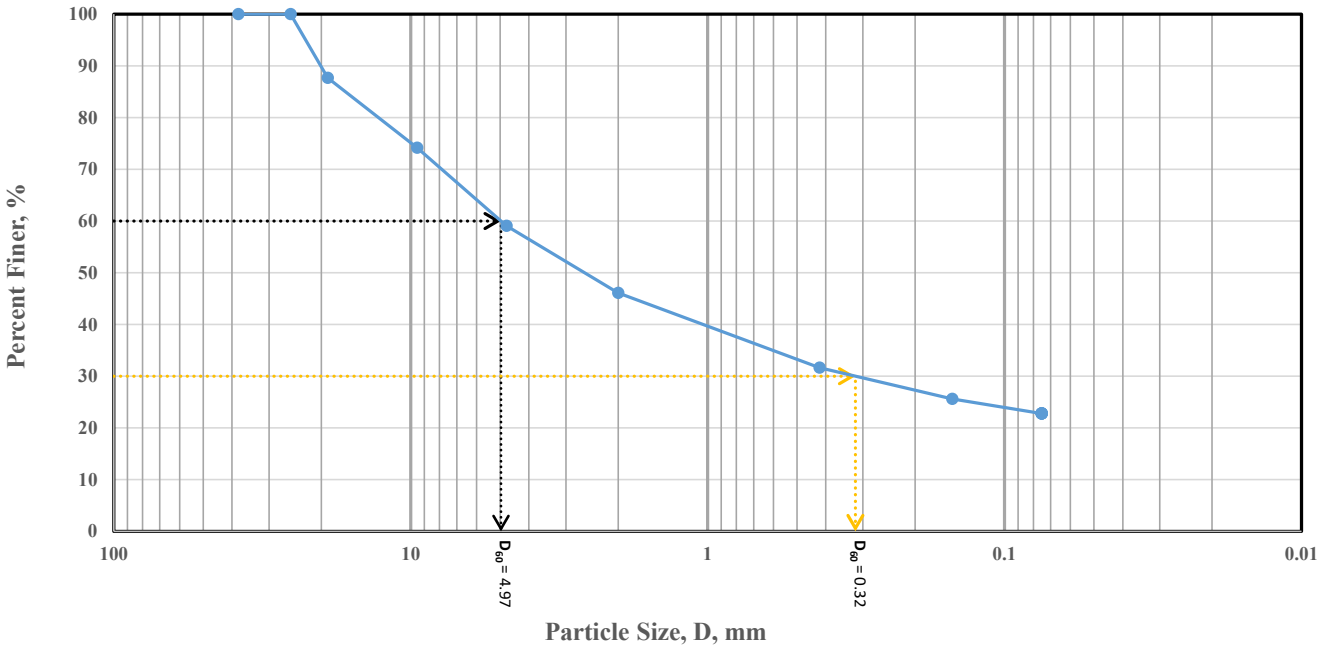
Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo

Approved by: T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.35	28.57	12.97	14.48	8.84	22.79	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	87.65
9.52	3/8	74.15
4.76	No. 4	59.08
2.00	No. 10	46.10
0.42	No. 40	31.62
0.150	No. 100	25.62
0.075	No. 200	22.79

MATERIAL DESCRIPTION

Sandy Silty Gravel (GM) - white brown, very dense, moist, fine to coarse grained, with limestone gravel fragments (FILL)

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	20.12	D_{85} =	16.62	D_{60} =	4.97
D_{50} =	2.59	D_{30} =	0.32	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

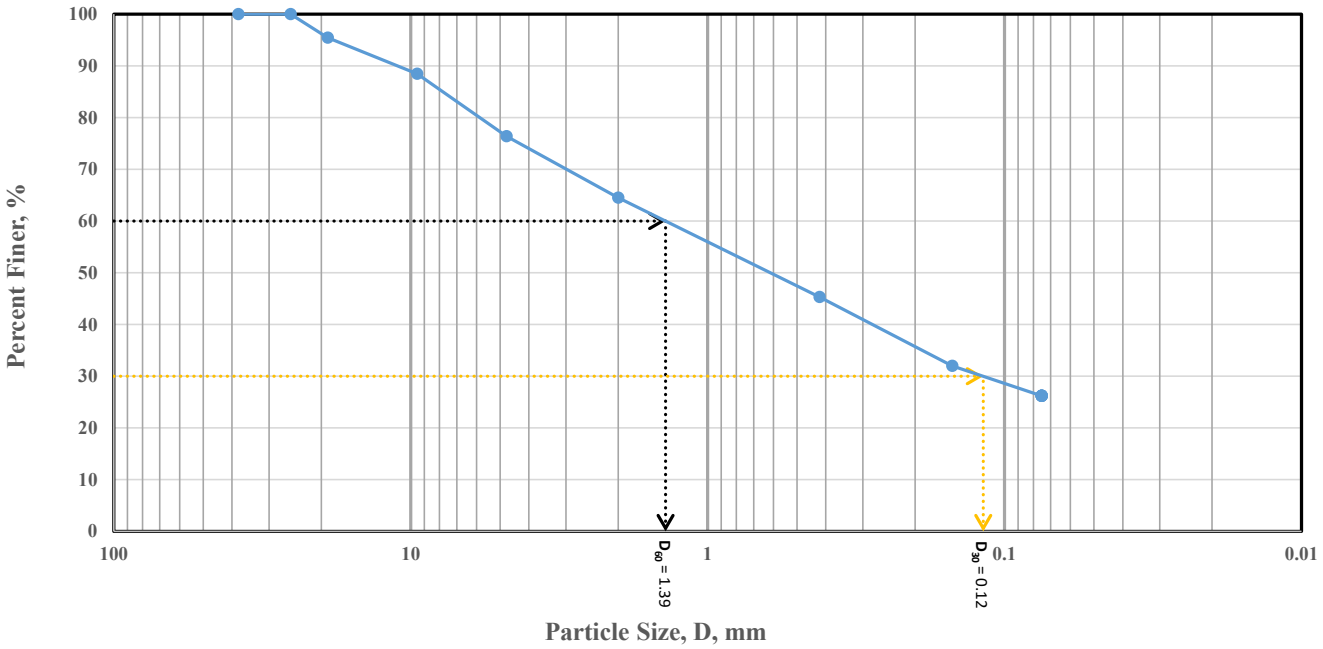
Sampling Location: Mangilao, Guam **Sample Number :** B-01/S-1 **Sample Depth:** 0.25 - 1.75 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	9-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.58	19.02	11.89	19.19	19.12	26.20	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	95.42
9.52	3/8	88.45
4.76	No. 4	76.40
2.00	No. 10	64.51
0.42	No. 40	45.32
0.150	No. 100	32.01
0.075	No. 200	26.20

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	11.10	D_{85} =	7.80	D_{60} =	1.39
D_{50} =	0.61	D_{30} =	0.12	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

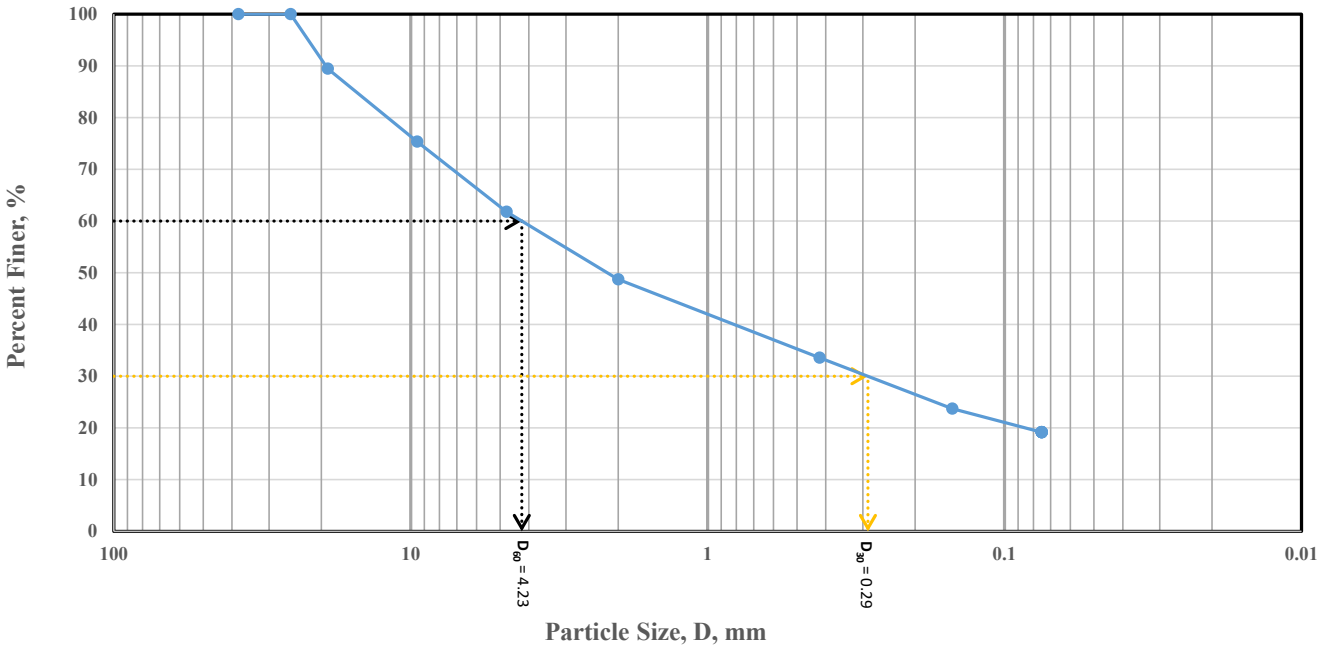
Sampling Location: Mangilao, Guam **Sample Number :** B-01/S-3 **Sample Depth:** 3.25 - 4.75 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	9-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.53	27.68	13.09	15.11	14.42	19.17	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	89.47
9.52	3/8	75.34
4.76	No. 4	61.80
2.00	No. 10	48.71
0.42	No. 40	33.59
0.150	No. 100	23.73
0.075	No. 200	19.17

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	19.33	D_{85} =	15.29	D_{60} =	4.23
D_{50} =	2.18	D_{30} =	0.29	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

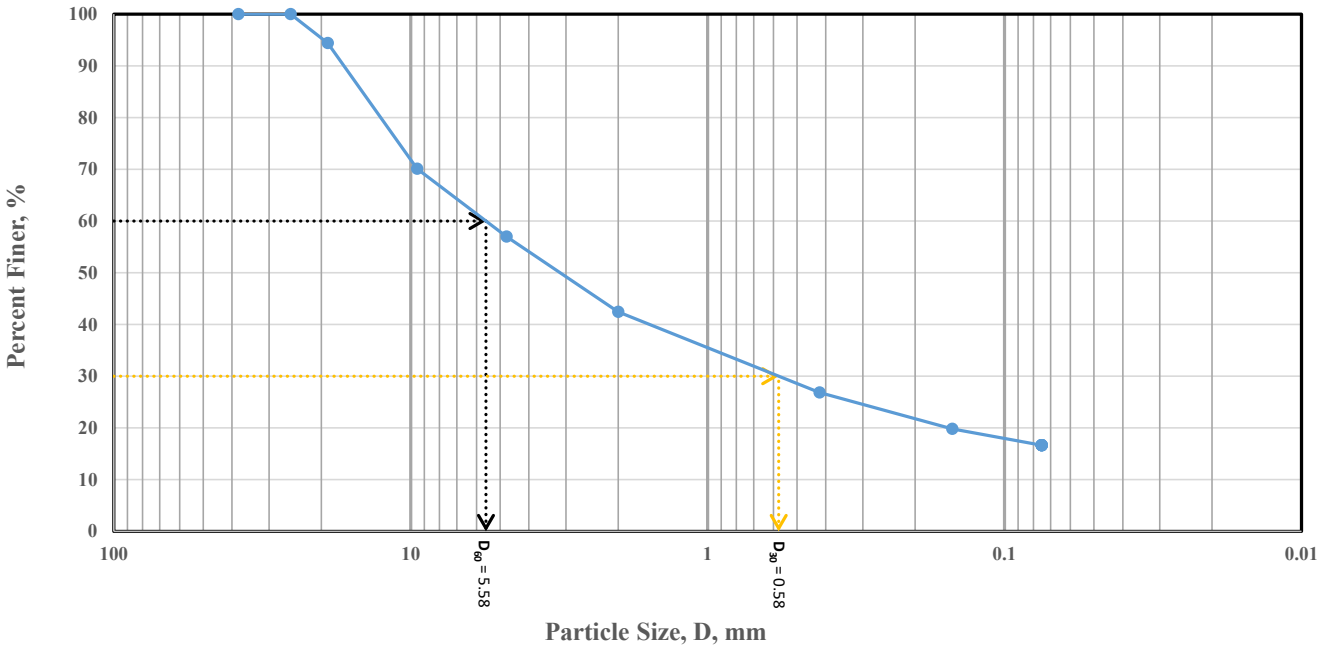
Sampling Location: Mangilao, Guam **Sample Number :** B-01/S-6 **Sample Depth:** 7.75 - 8.58 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	9-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.62	37.38	14.57	15.59	10.18	16.66	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	94.38
9.52	3/8	70.09
4.76	No. 4	57.00
2.00	No. 10	42.43
0.42	No. 40	26.84
0.150	No. 100	19.82
0.075	No. 200	16.66

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	16.81	D_{85} =	14.57	D_{60} =	5.58
D_{50} =	3.14	D_{30} =	0.58	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

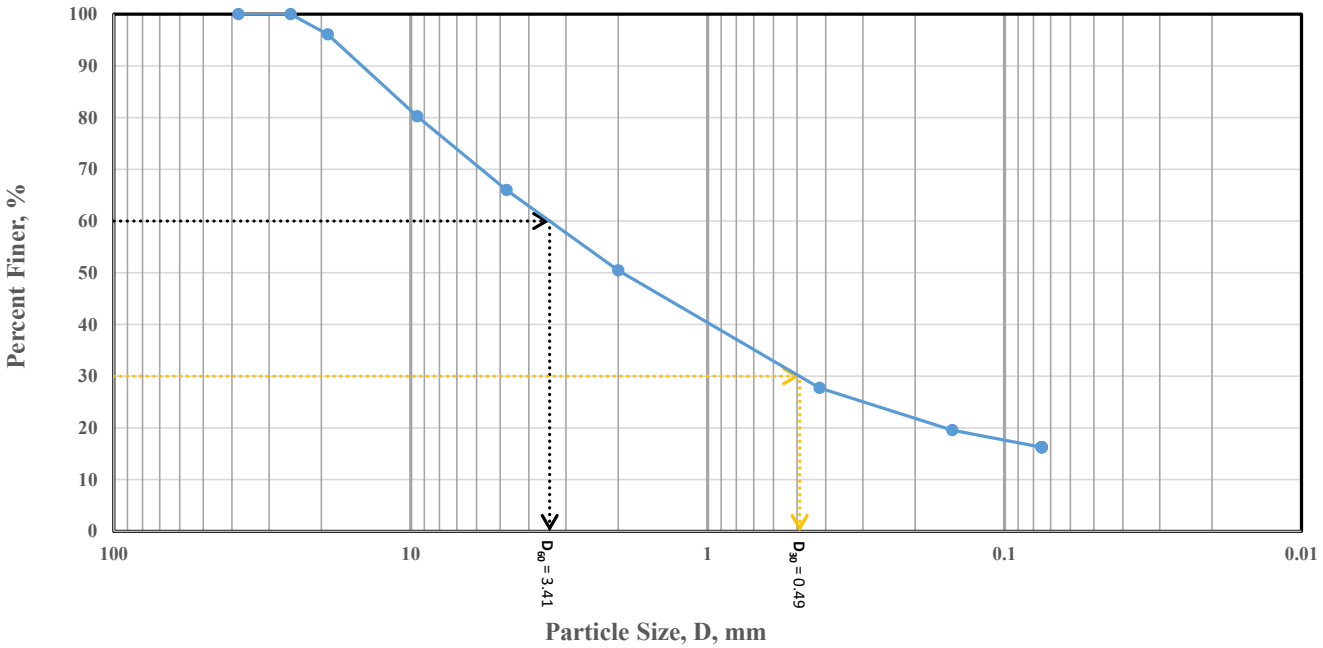
Sampling Location: Mangilao, Guam **Sample Number :** B-01/S-10 **Sample Depth:** 20.00 - 20.67 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.94	30.06	15.55	22.70	11.49	16.27	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	96.06
9.52	3/8	80.27
4.76	No. 4	66.01
2.00	No. 10	50.46
0.42	No. 40	27.76
0.150	No. 100	19.55
0.075	No. 200	16.27

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	14.60	D_{85} =	11.72	D_{60} =	3.41
D_{50} =	1.94	D_{30} =	0.49	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

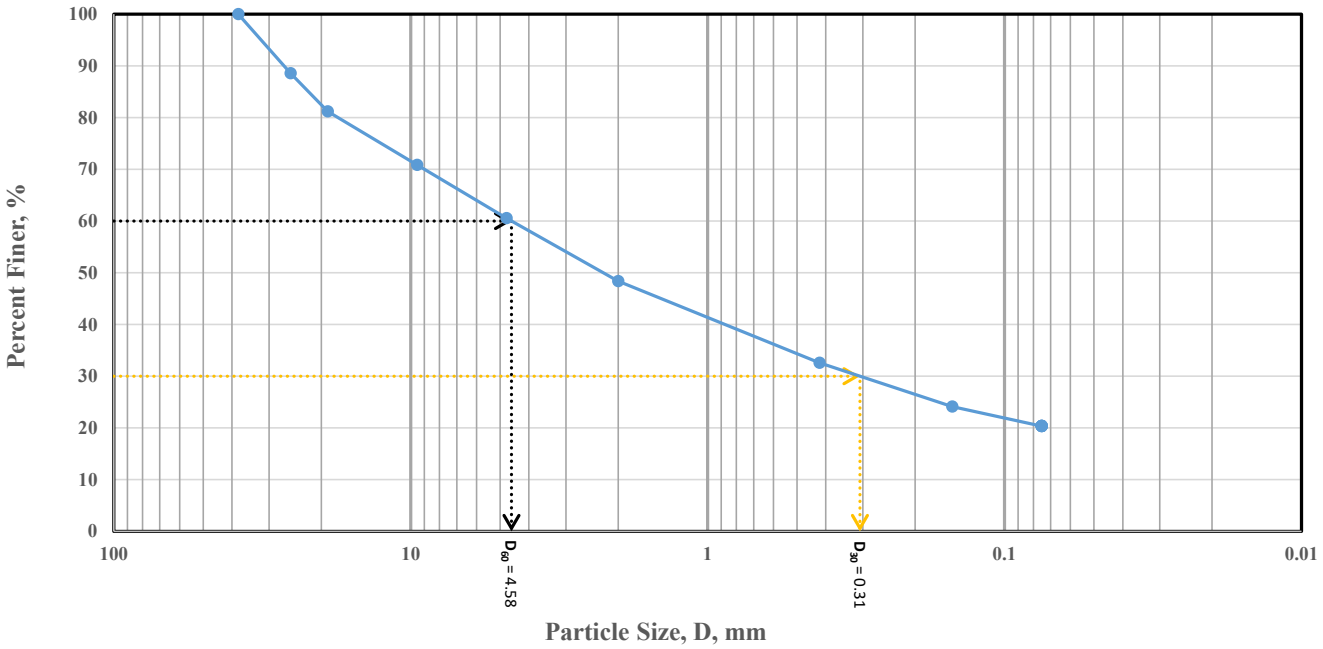
Sampling Location: Mangilao, Guam **Sample Number :** B-01/S-14 **Sample Depth:** 40.00 - 41.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	18.84	20.62	12.15	15.81	12.23	20.35	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	88.55
19.05	3/4	81.16
9.52	3/8	70.83
4.76	No. 4	60.55
2.00	No. 10	48.39
0.42	No. 40	32.58
0.150	No. 100	24.10
0.075	No. 200	20.35

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	26.74	D_{85} =	22.12	D_{60} =	4.58
D_{50} =	2.24	D_{30} =	0.31	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

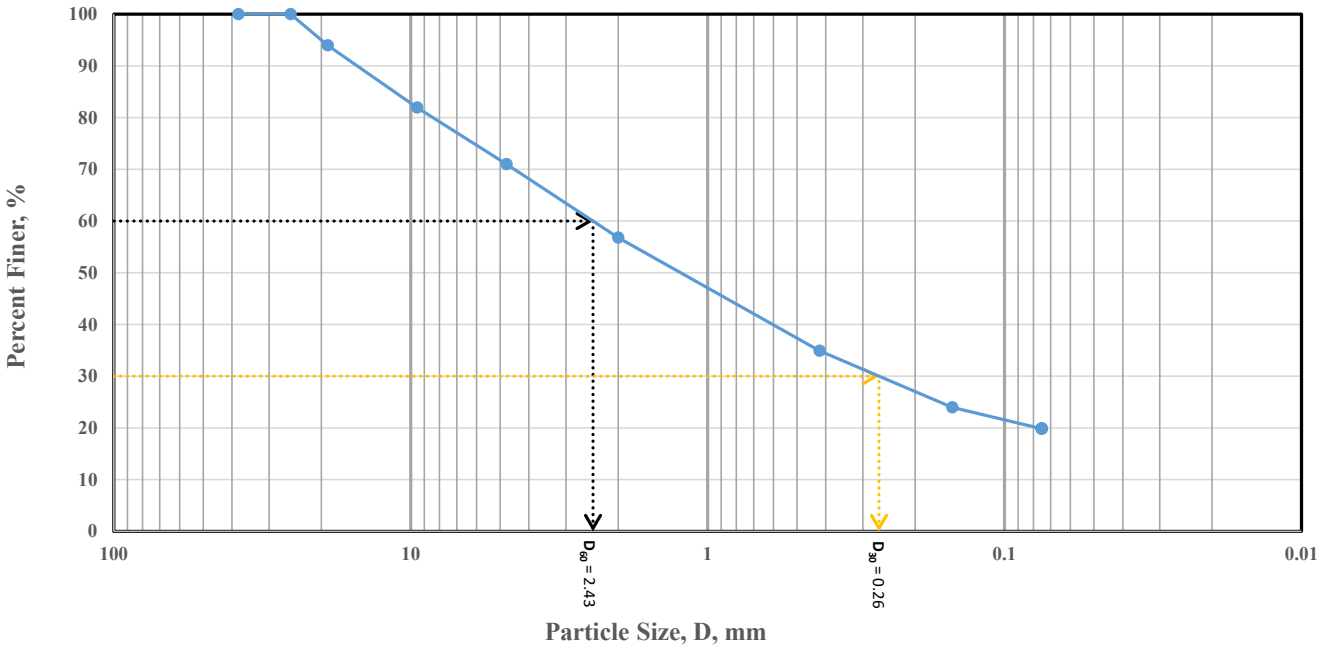
Sampling Location: Mangilao, Guam **Sample Number :** B-01/S-17 **Sample Depth:** 55.00 - 56.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.04	22.99	14.17	21.90	15.04	19.86	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	93.96
9.52	3/8	81.93
4.76	No. 4	70.97
2.00	No. 10	56.80
0.42	No. 40	34.90
0.150	No. 100	23.96
0.075	No. 200	19.86

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	15.16	D_{85} =	11.36	D_{60} =	2.43
D_{50} =	1.23	D_{30} =	0.26	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

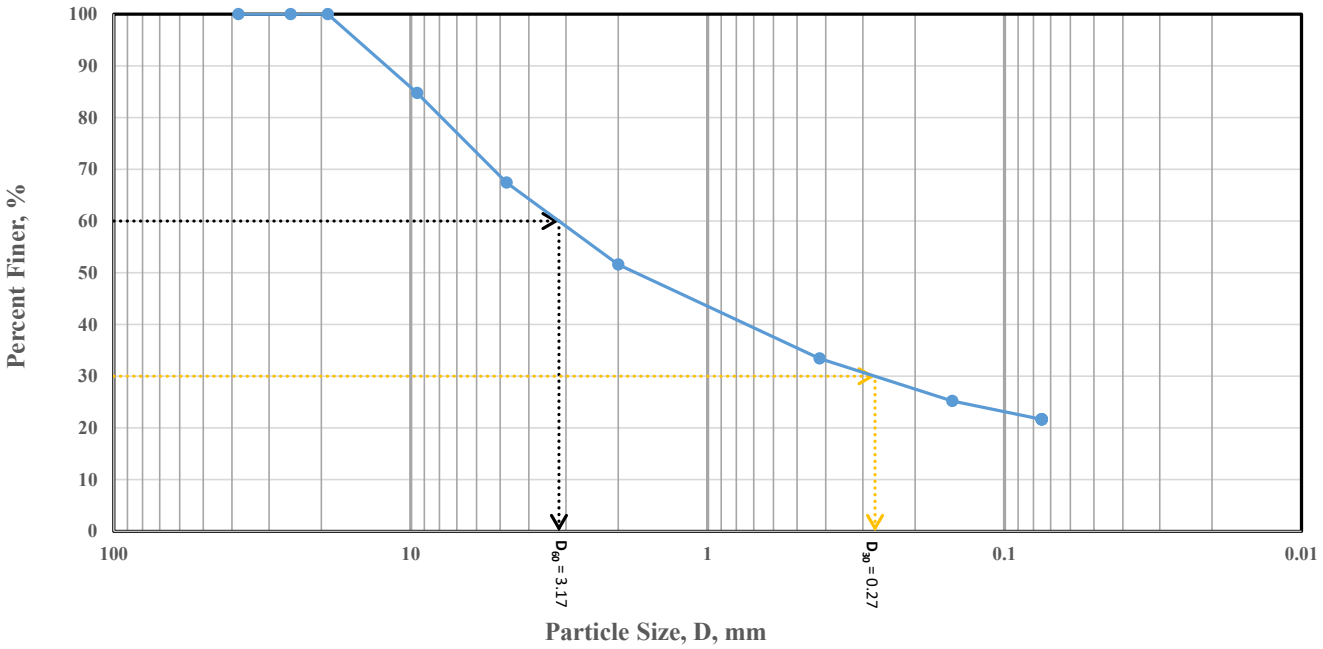
Sampling Location: Mangilao, Guam **Sample Number :** B-02/S-4 **Sample Depth:** 4.75 - 5.67 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.00	32.55	15.87	18.15	11.77	21.66	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	100.00
9.52	3/8	84.75
4.76	No. 4	67.45
2.00	No. 10	51.58
0.42	No. 40	33.43
0.150	No. 100	25.22
0.075	No. 200	21.66

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	12.09	D_{85} =	9.63	D_{60} =	3.17
D_{50} =	1.75	D_{30} =	0.27	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

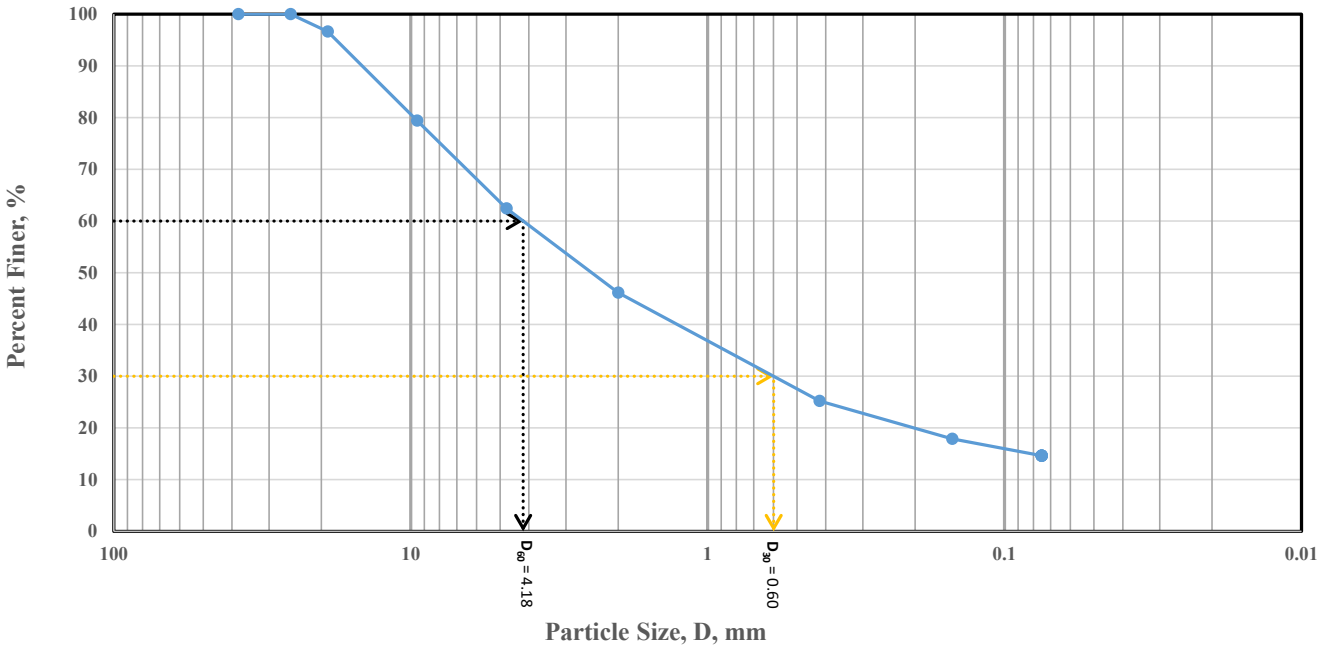
Sampling Location: Mangilao, Guam **Sample Number :** B-02/S-6 **Sample Depth:** 7.75 - 9.25 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.36	34.21	16.27	20.92	10.59	14.64	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	96.64
9.52	3/8	79.40
4.76	No. 4	62.43
2.00	No. 10	46.16
0.42	No. 40	25.24
0.150	No. 100	17.90
0.075	No. 200	14.64

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	14.58	D_{85} =	11.93	D_{60} =	4.18
D_{50} =	2.45	D_{30} =	0.60	D_{15} =	0.08
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

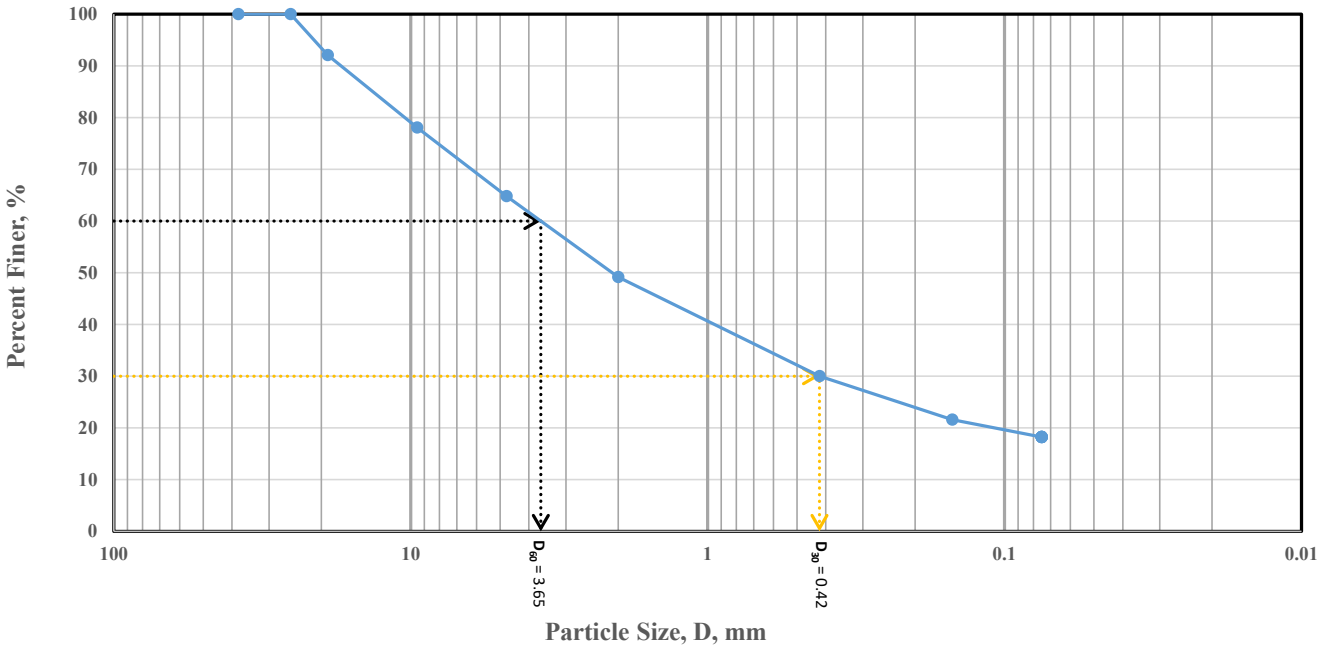
Sampling Location: Mangilao, Guam **Sample Number :** B-02/S-11 **Sample Depth:** 35.00 -36.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.95	27.24	15.66	19.16	11.76	18.24	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	92.05
9.52	3/8	78.09
4.76	No. 4	64.81
2.00	No. 10	49.15
0.42	No. 40	30.00
0.150	No. 100	21.59
0.075	No. 200	18.24

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	17.20	D_{85} =	13.42	D_{60} =	3.65
D_{50} =	2.10	D_{30} =	0.42	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

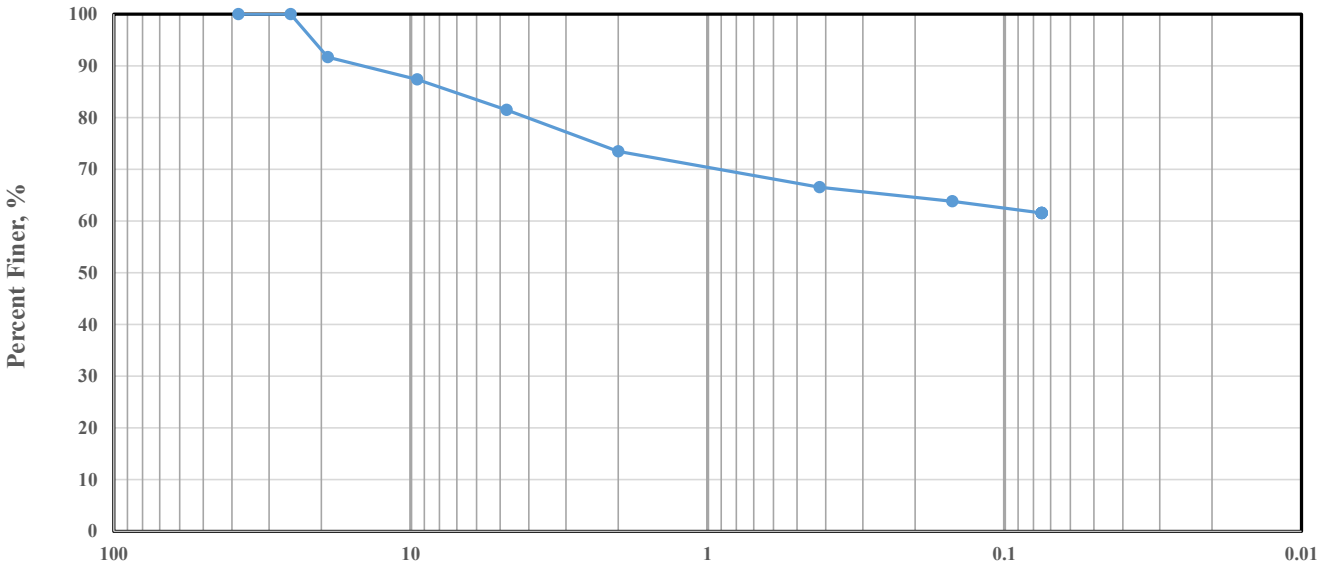
Sampling Location: Mangilao, Guam **Sample Number :** B-02/S-13 **Sample Depth:** 55.00 - 56.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	10-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.32	10.21	8.02	6.93	4.96	61.56	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	91.68
9.52	3/8	87.38
4.76	No. 4	81.47
2.00	No. 10	73.45
0.42	No. 40	66.52
0.150	No. 100	63.82
0.075	No. 200	61.56

MATERIAL DESCRIPTION

ELASTIC SILT (MH) - red brown, medium stiff, moist, fine grained, with sand and limestone gravel fragments, with roots (TOPSOIL)

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} = 14.52 D_{85} = 7.20 D_{60} = -

D_{50} = - D_{30} = - D_{15} = -

D_{10} = - C_U = - C_C = -

CLASSIFICATION

USCS = AASHTO =

REMARKS:

Topsoil layer from 0.00 to 0.42 feet was used as B-03/S-1 representative sample for Particle Size Distribution analysis.

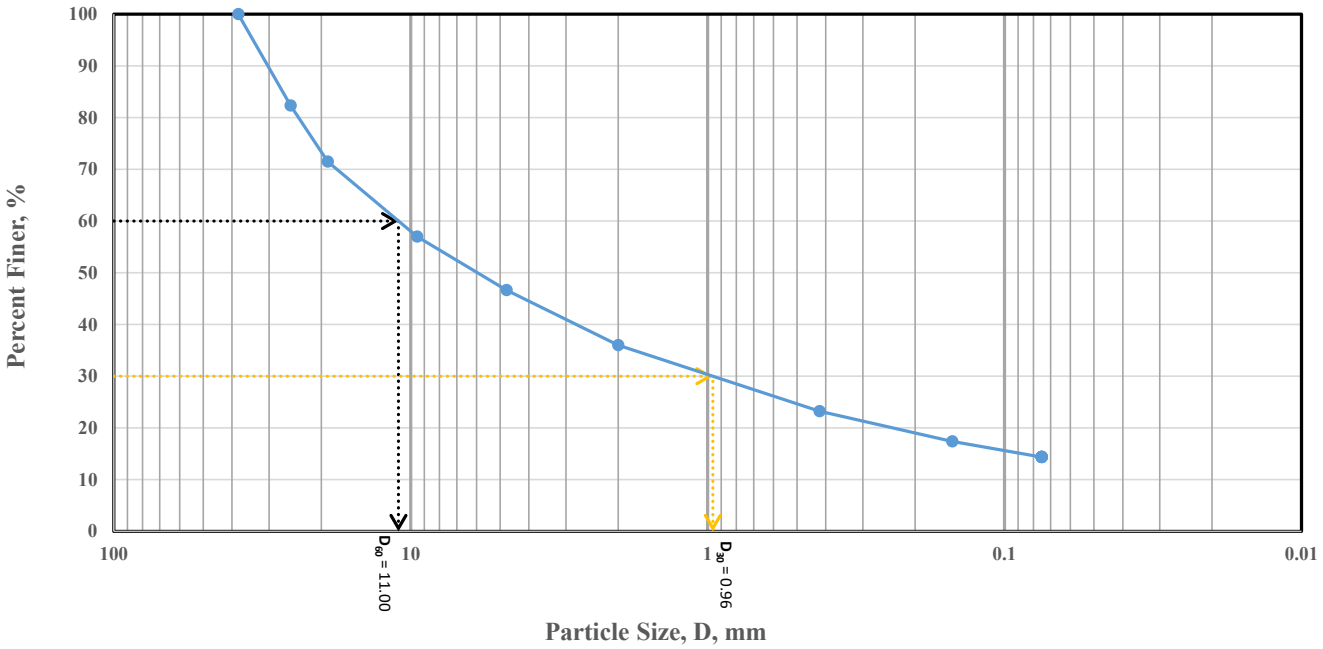
Sampling Location: Mangilao, Guam **Sample Number :** B-03/S-1 **Sample Depth:** 0.00 - 1.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	28.53	24.83	10.65	12.76	8.87	14.37	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	82.35
19.05	3/4	71.47
9.52	3/8	56.98
4.76	No. 4	46.65
2.00	No. 10	36.00
0.42	No. 40	23.24
0.150	No. 100	17.37
0.075	No. 200	14.37

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	30.28	D_{85} =	26.99	D_{60} =	11.00
D_{50} =	5.96	D_{30} =	0.96	D_{15} =	0.09
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

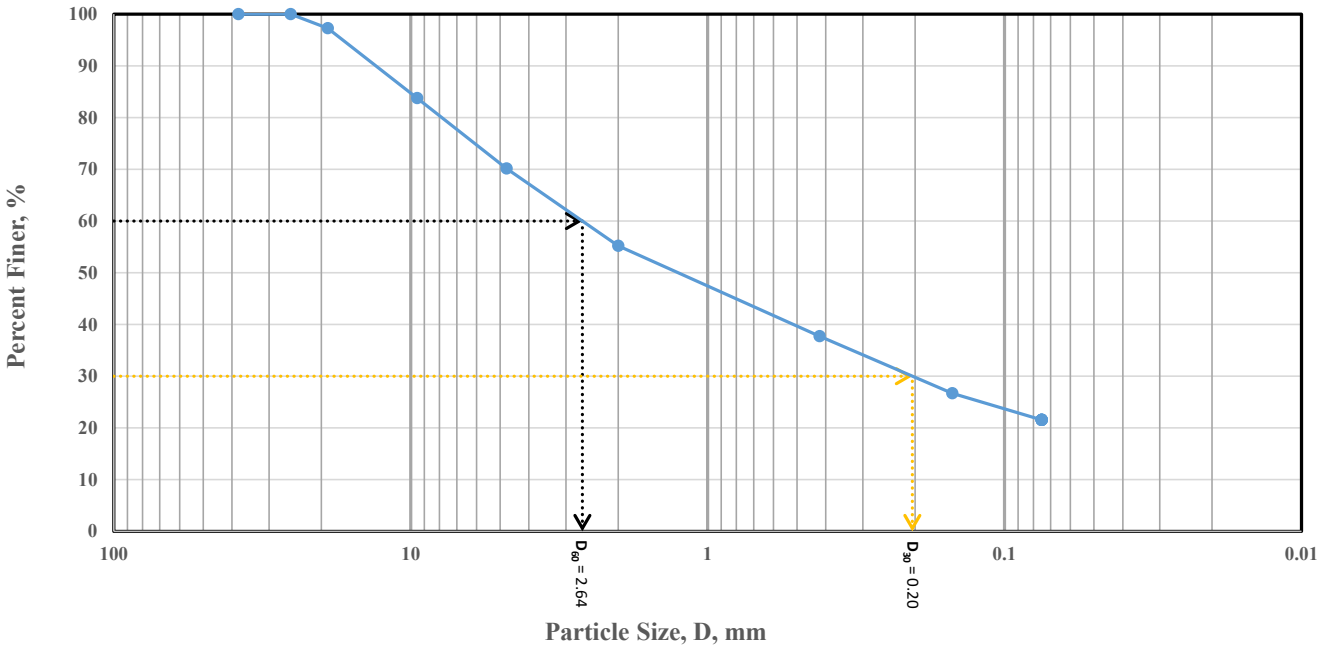
Sampling Location: Mangilao, Guam **Sample Number :** B-03/S-2 **Sample Depth:** 1.50 - 3.00 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.72	27.12	14.96	17.47	16.17	21.56	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	97.28
9.52	3/8	83.76
4.76	No. 4	70.16
2.00	No. 10	55.20
0.42	No. 40	37.73
0.150	No. 100	26.67
0.075	No. 200	21.56

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	13.11	D_{85} =	10.15	D_{60} =	2.64
D_{50} =	1.26	D_{30} =	0.20	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

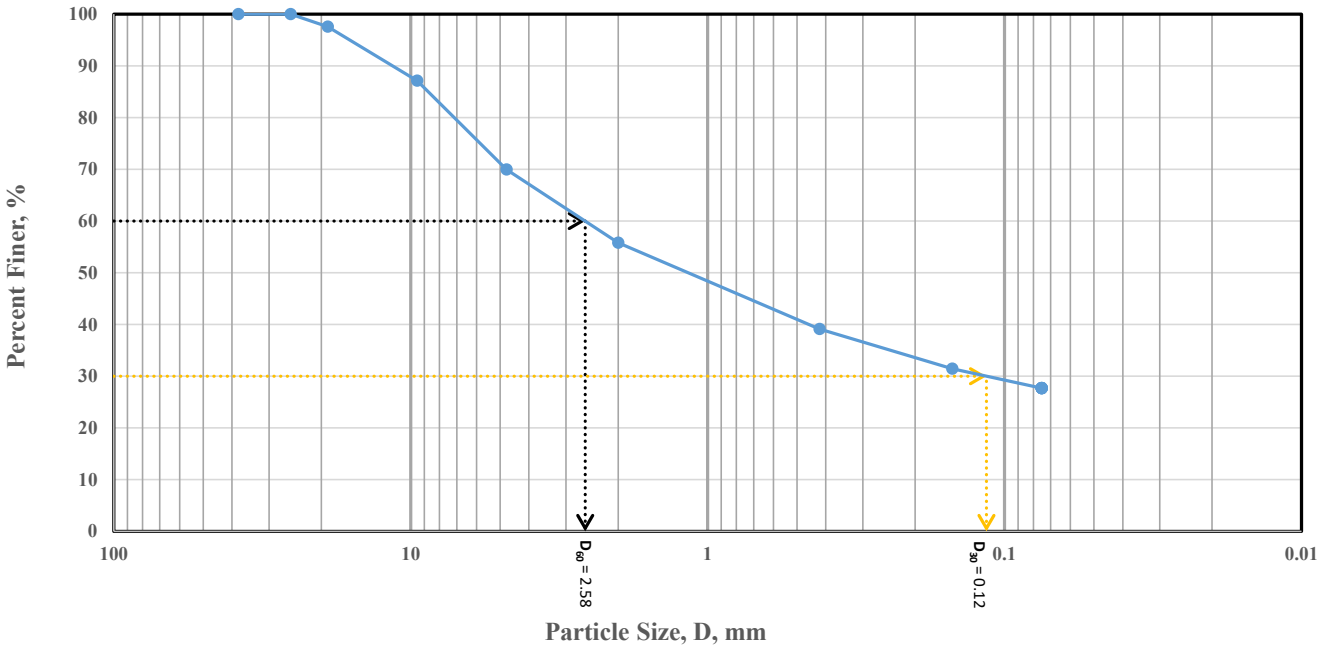
Sampling Location: Mangilao, Guam **Sample Number :** B-03/S-7 **Sample Depth:** 9.00 - 10.33 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.42	27.62	14.15	16.69	11.43	27.70	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	97.58
9.52	3/8	87.12
4.76	No. 4	69.97
2.00	No. 10	55.82
0.42	No. 40	39.12
0.150	No. 100	31.43
0.075	No. 200	27.70

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	11.53	D_{85} =	8.74	D_{60} =	2.58
D_{50} =	1.16	D_{30} =	0.12	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

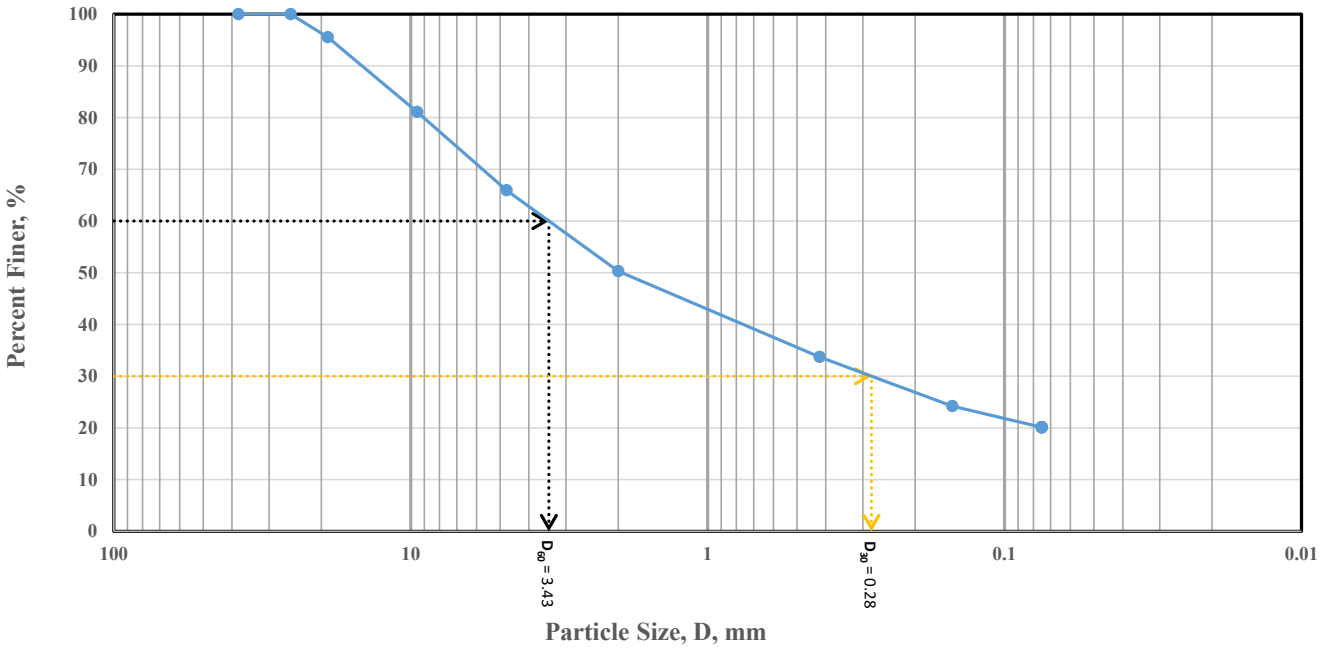
Sampling Location: Mangilao, Guam **Sample Number :** B-03/S-10 **Sample Depth:** 25.00 - 26.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.48	29.60	15.63	16.57	13.59	20.13	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	95.52
9.52	3/8	81.07
4.76	No. 4	65.93
2.00	No. 10	50.29
0.42	No. 40	33.72
0.150	No. 100	24.20
0.075	No. 200	20.13

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	14.61	D_{85} =	11.49	D_{60} =	3.43
D_{50} =	1.95	D_{30} =	0.28	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

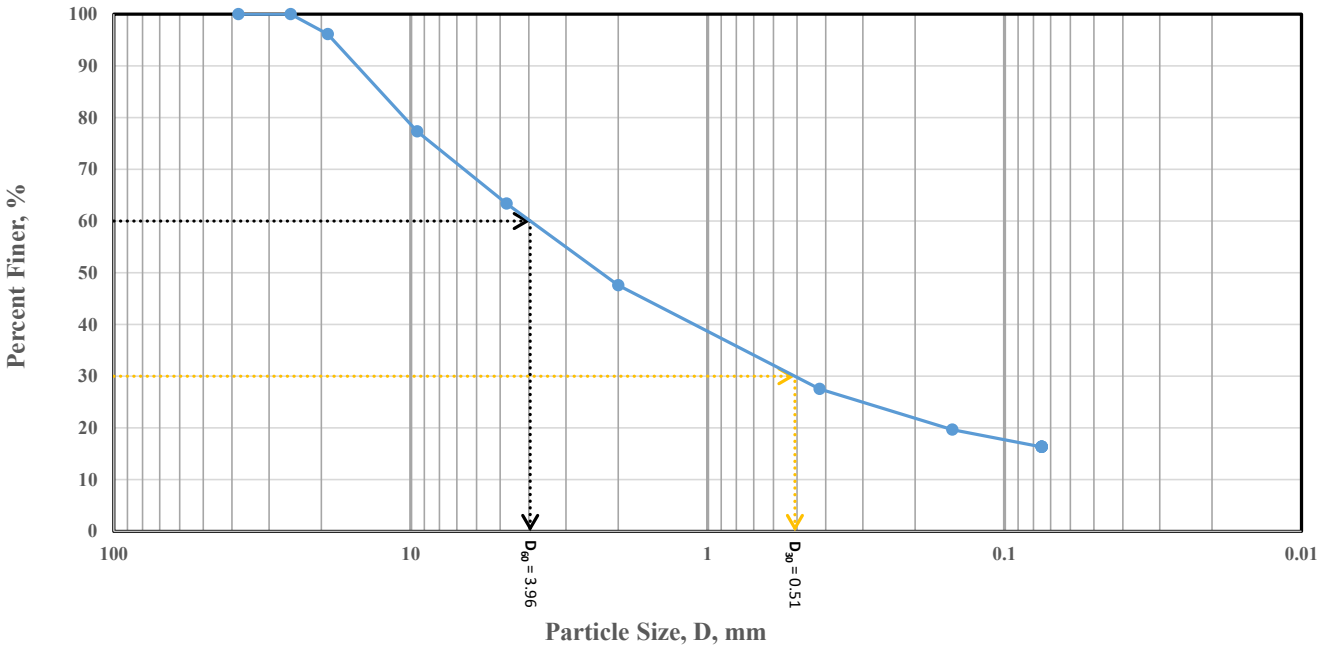
Sampling Location: Mangilao, Guam **Sample Number :** B-03/S-13 **Sample Depth:** 55.00 - 56.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.86	32.80	15.77	20.03	11.22	16.33	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	96.14
9.52	3/8	77.32
4.76	No. 4	63.35
2.00	No. 10	47.58
0.42	No. 40	27.55
0.150	No. 100	19.65
0.075	No. 200	16.33

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	15.19	D_{85} =	12.63	D_{60} =	3.96
D_{50} =	2.29	D_{30} =	0.51	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

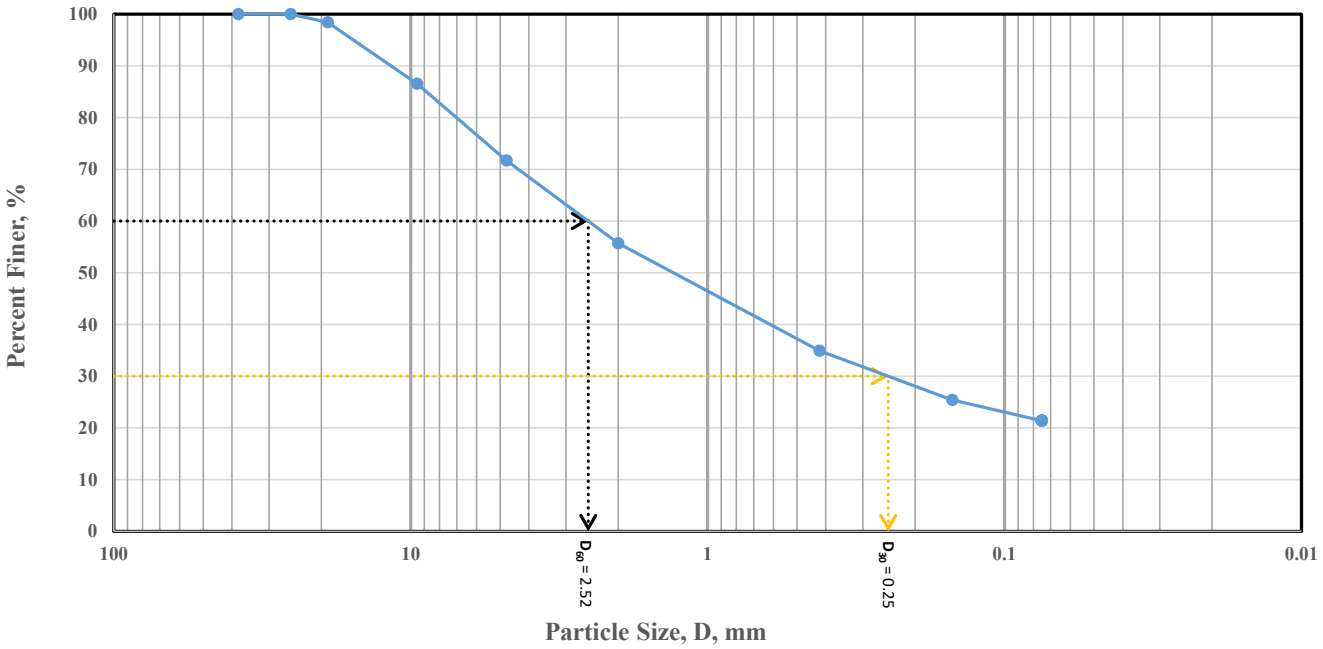
Sampling Location: Mangilao, Guam **Sample Number :** B-04/S-4 **Sample Depth:** 4.50 - 5.33 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.59	26.73	15.97	20.79	13.52	21.40	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	98.41
9.52	3/8	86.52
4.76	No. 4	71.68
2.00	No. 10	55.71
0.42	No. 40	34.92
0.150	No. 100	25.42
0.075	No. 200	21.40

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	11.66	D_{85} =	8.87	D_{60} =	2.52
D_{50} =	1.30	D_{30} =	0.25	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

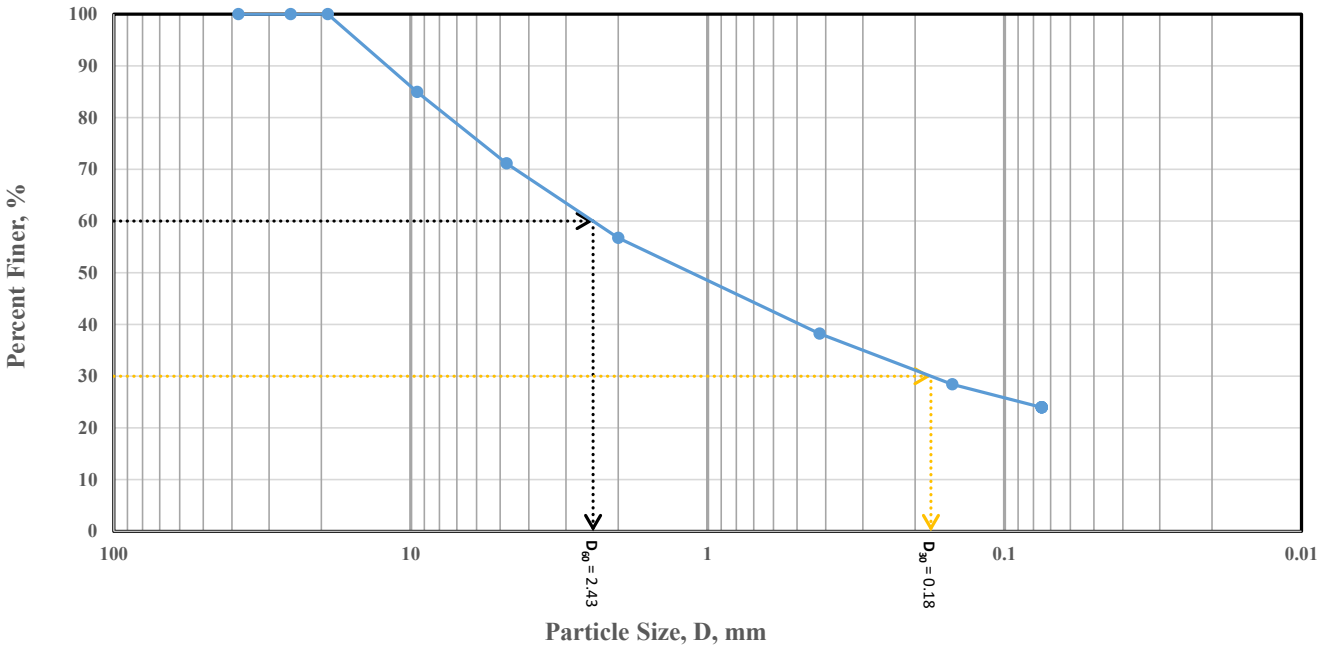
Sampling Location: Mangilao, Guam **Sample Number :** B-04/S-9 **Sample Depth:** 15.00 - 16.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	11-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.00	28.85	14.40	18.52	14.25	23.98	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	100.00
9.52	3/8	84.94
4.76	No. 4	71.15
2.00	No. 10	56.75
0.42	No. 40	38.23
0.150	No. 100	28.42
0.075	No. 200	23.98

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	12.02	D_{85} =	9.55	D_{60} =	2.43
D_{50} =	1.13	D_{30} =	0.18	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

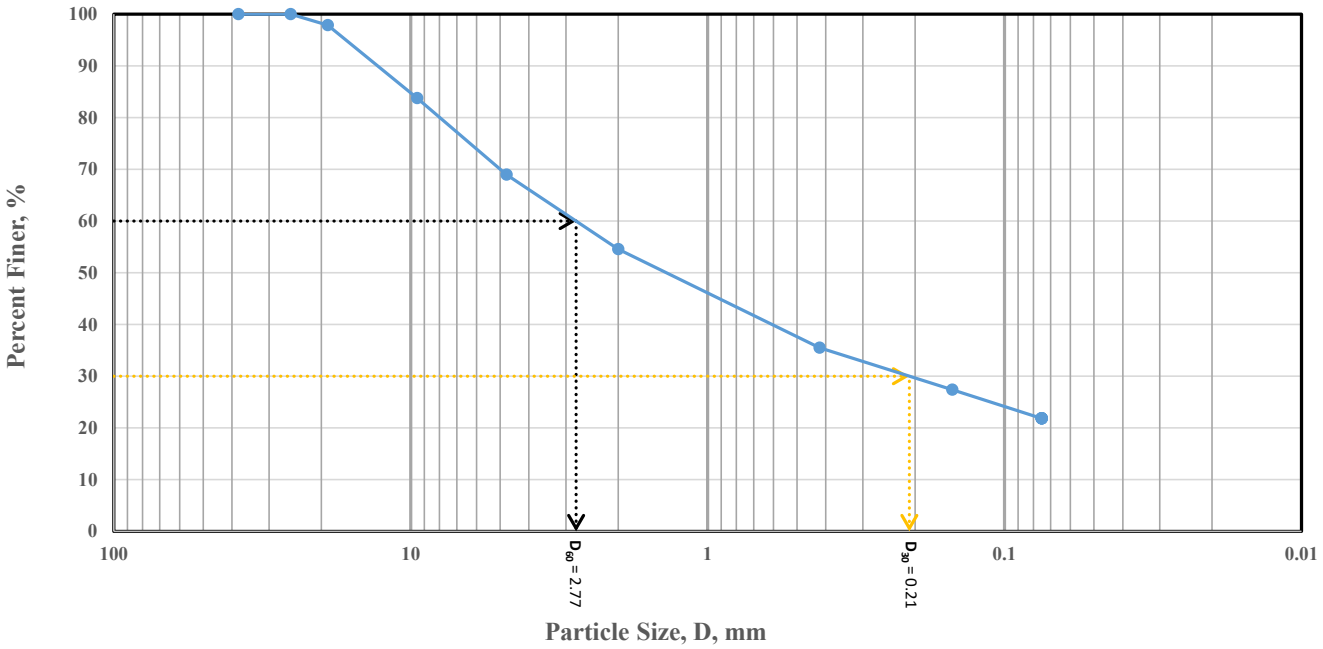
Sampling Location: Mangilao, Guam **Sample Number :** B-04/S-13 **Sample Depth:** 55.00 - 56.50 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.12	28.90	14.41	19.05	13.67	21.84	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	97.88
9.52	3/8	83.78
4.76	No. 4	68.98
2.00	No. 10	54.56
0.42	No. 40	35.51
0.150	No. 100	27.37
0.075	No. 200	21.84

MATERIAL DESCRIPTION

Gravelly Silty SAND (SM) - white brown, very dense, moist, fine to coarse grained, with limestone gravel fragments (FILL)

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	12.93	D_{85} =	10.11	D_{60} =	2.77
D_{50} =	1.38	D_{30} =	0.21	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

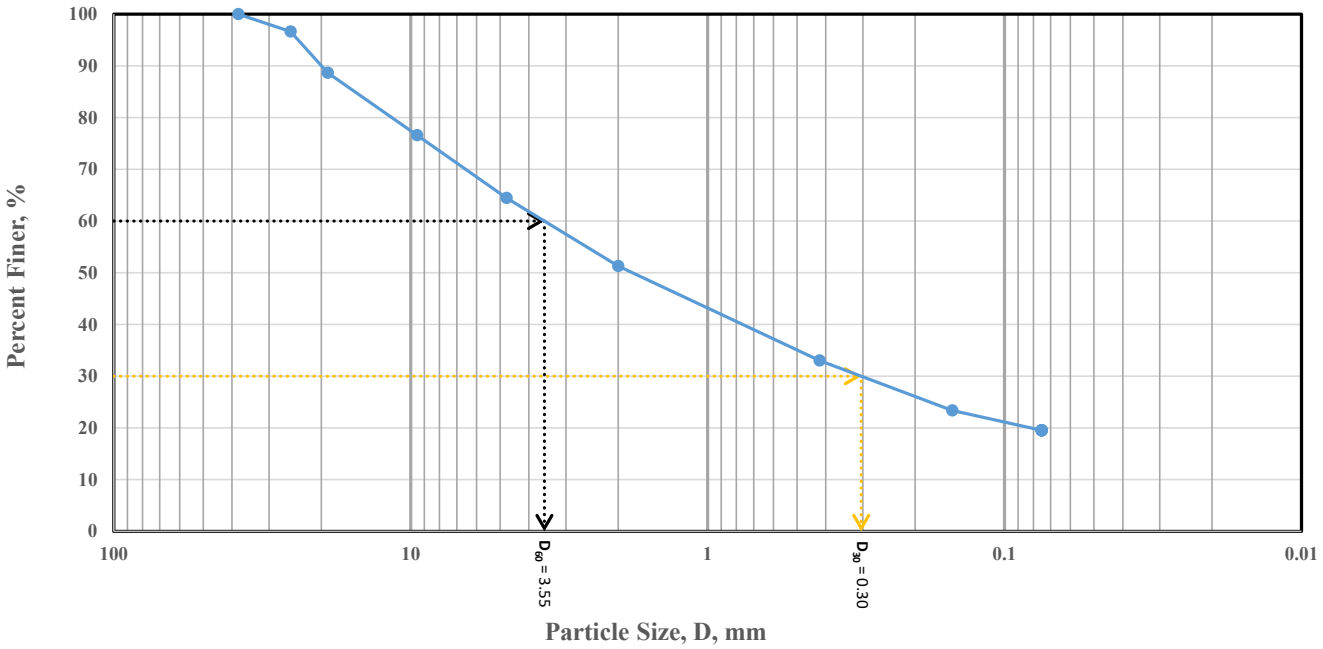
Sampling Location: Mangilao, Guam **Sample Number :** B-05/S-1 **Sample Depth:** 0.25 - 1.67 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.32	24.20	13.20	18.26	13.48	19.54	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	96.64
19.05	3/4	88.68
9.52	3/8	76.58
4.76	No. 4	64.48
2.00	No. 10	51.28
0.42	No. 40	33.02
0.150	No. 100	23.40
0.075	No. 200	19.54

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	19.98	D_{85} =	15.43	D_{60} =	3.55
D_{50} =	1.79	D_{30} =	0.30	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

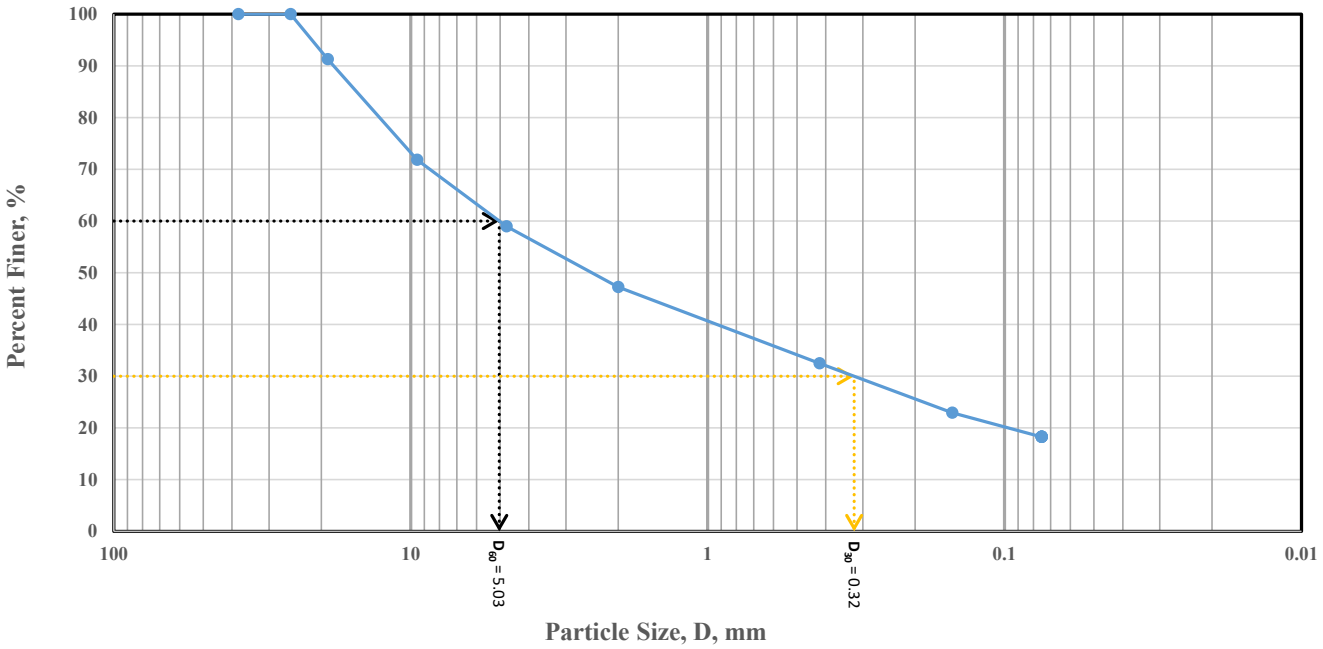
Sampling Location: Mangilao, Guam **Sample Number :** B-05/S-5 **Sample Depth:** 6.25 - 7.75 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.74	32.30	11.74	14.74	14.23	18.26	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	91.26
9.52	3/8	71.83
4.76	No. 4	58.96
2.00	No. 10	47.22
0.42	No. 40	32.49
0.150	No. 100	22.95
0.075	No. 200	18.26

MATERIAL DESCRIPTION

LIMESTONE - white brown, very weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	18.21	D_{85} =	15.23	D_{60} =	5.03
D_{50} =	2.46	D_{30} =	0.32	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

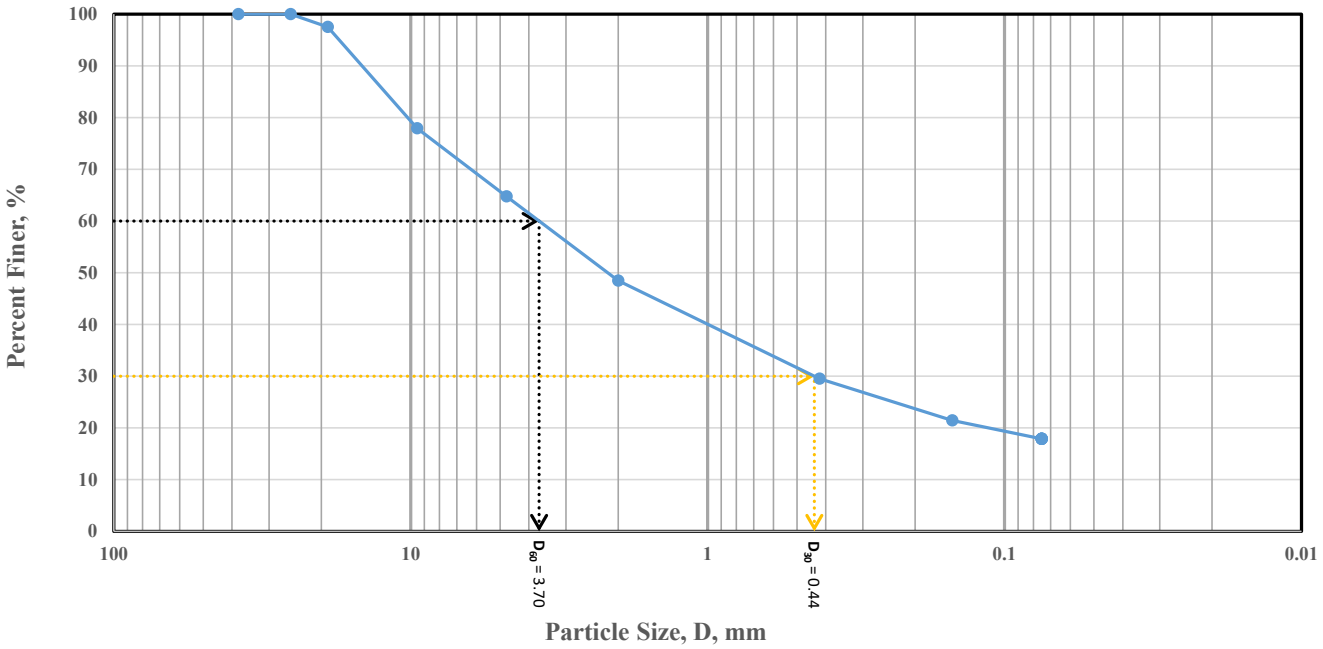
Sampling Location: Mangilao, Guam **Sample Number :** B-05/S-8 **Sample Depth:** 10.75 - 12.25 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.49	32.76	16.30	18.94	11.62	17.90	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	97.51
9.52	3/8	77.93
4.76	No. 4	64.76
2.00	No. 10	48.46
0.42	No. 40	29.51
0.150	No. 100	21.43
0.075	No. 200	17.90

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, moist

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	14.60	D_{85} =	12.23	D_{60} =	3.70
D_{50} =	2.17	D_{30} =	0.44	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

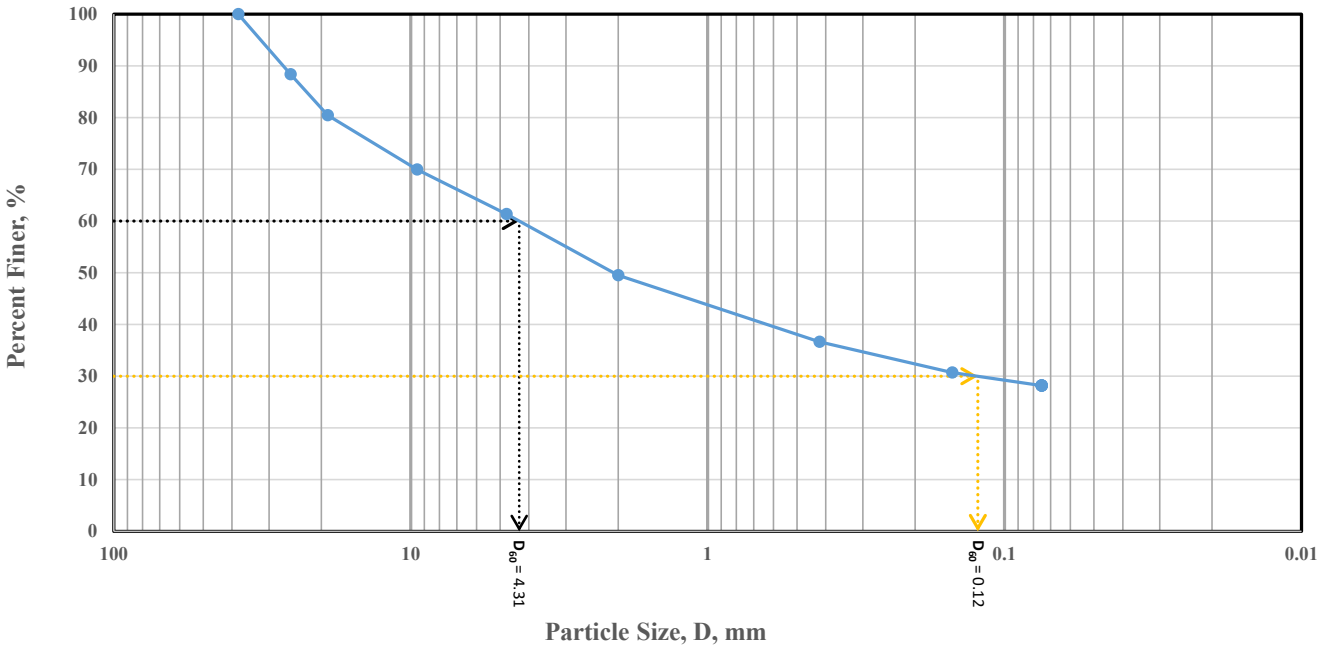
Sampling Location: Mangilao, Guam **Sample Number :** B-05/S-12 **Sample Depth:** 45.00 - 46.25 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	19.53	19.12	11.81	12.90	8.45	28.19	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	88.34
19.05	3/4	80.47
9.52	3/8	69.95
4.76	No. 4	61.35
2.00	No. 10	49.53
0.42	No. 40	36.63
0.150	No. 100	30.73
0.075	No. 200	28.19

MATERIAL DESCRIPTION

Sandy Silty Gravel (GM) - red brown, very dense, moist, fine to coarse grained, with limestone gravel fragments (TOPSOIL)

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	26.91	D_{85} =	22.48	D_{60} =	4.31
D_{50} =	2.07	D_{30} =	0.12	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

Topsoil layer from 0.00 to 0.42 feet was used as B-06/S-1 representative sample for Particle Size Distribution analysis.

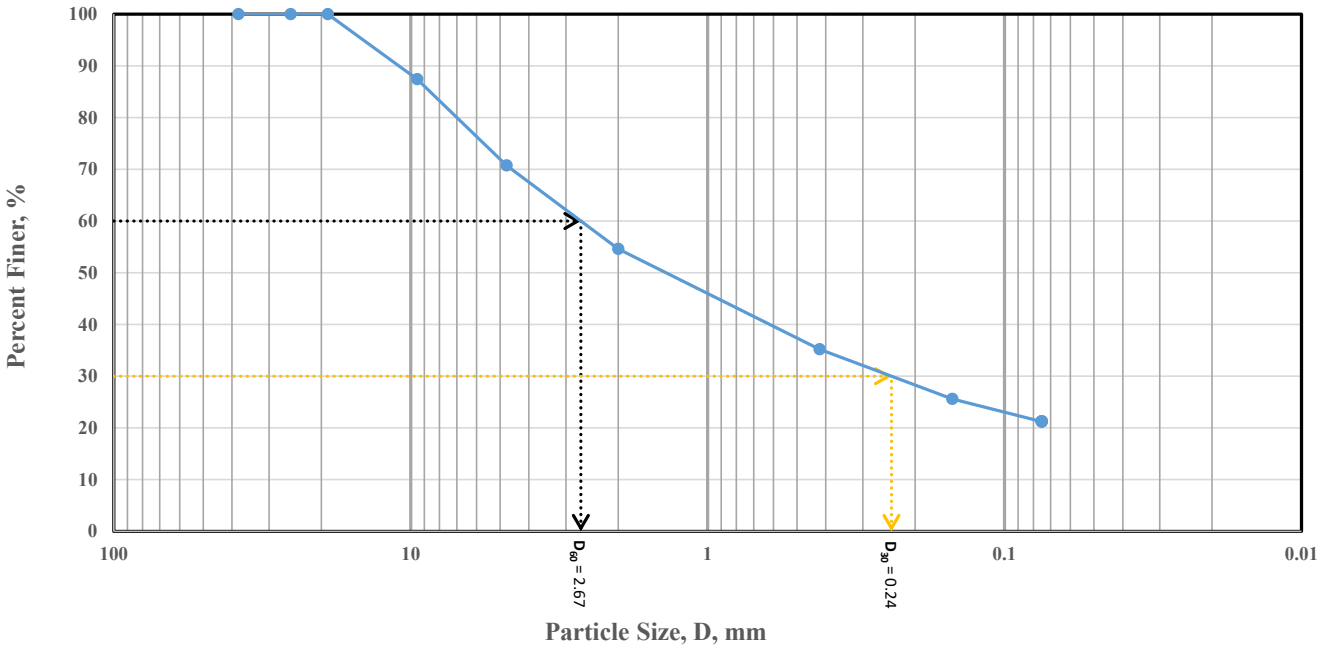
Sampling Location: Mangilao, Guam - Near Stormwater Pond **Sample Number :** B-06/S-1 **Sample Depth:** 0.00 - 1.00 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.00	29.26	16.14	19.39	13.98	21.23	

SIEVE SIZE		PERCENT FINER, %
(mm)	(inch)	
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	100.00
9.52	3/8	87.44
4.76	No. 4	70.74
2.00	No. 10	54.60
0.42	No. 40	35.21
0.150	No. 100	25.59
0.075	No. 200	21.23

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, wet

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	10.97	D_{85} =	8.60	D_{60} =	2.67
D_{50} =	1.38	D_{30} =	0.24	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

REMARKS:

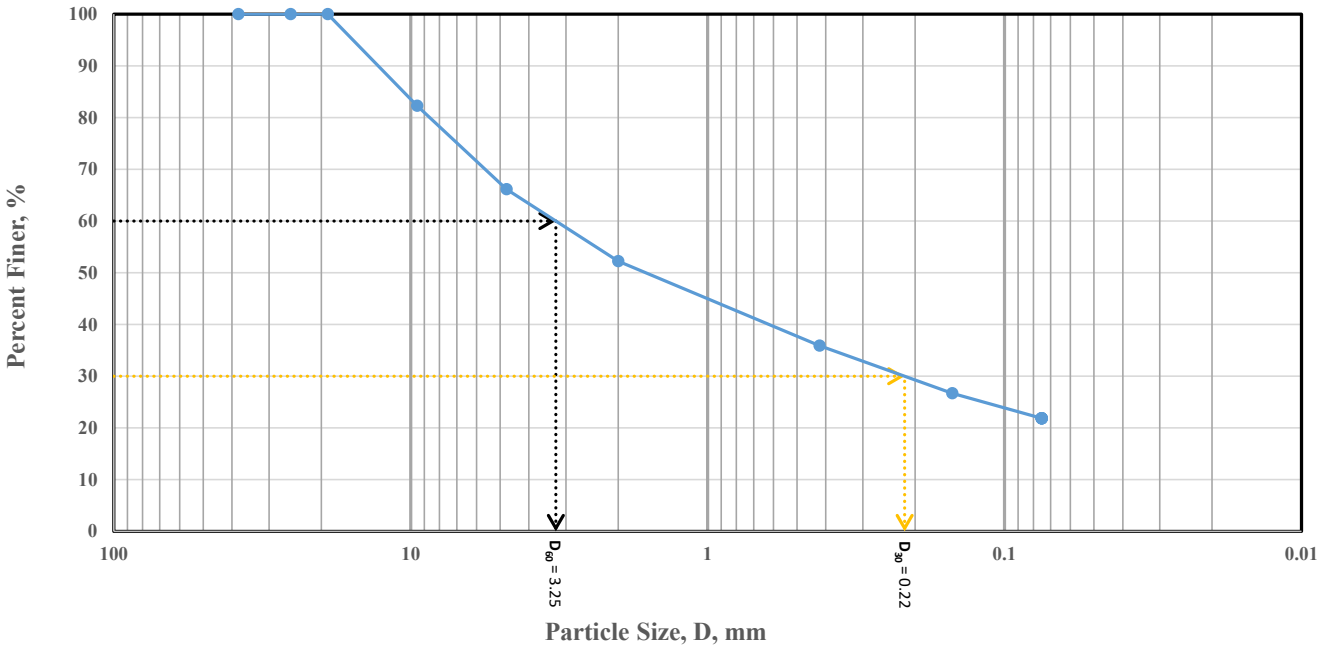
Sampling Location: Mangilao, Guam - Near Stormwater Pond **Sample Number :** B-06/S-5 **Sample Depth:** 6.00 - 6.92 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.00	33.84	13.94	16.32	14.03	21.87	

SIEVE SIZE (mm)	SIEVE SIZE (inch)	PERCENT FINER, %
38.10	1-1/2	100.00
25.40	1	100.00
19.05	3/4	100.00
9.52	3/8	82.26
4.76	No. 4	66.16
2.00	No. 10	52.22
0.42	No. 40	35.90
0.150	No. 100	26.70
0.075	No. 200	21.87

MATERIAL DESCRIPTION

LIMESTONE - white brown, weak, highly to moderately weathered, fine to coarse grained, wet

ATTERBERG LIMITS

LL= PL= PI=

COEFFICIENTS

D_{90} =	12.89	D_{85} =	10.60	D_{60} =	3.25
D_{50} =	1.62	D_{30} =	0.22	D_{15} =	-
D_{10} =	-	C_U =	-	C_C =	-

CLASSIFICATION

USCS = AASHTO =

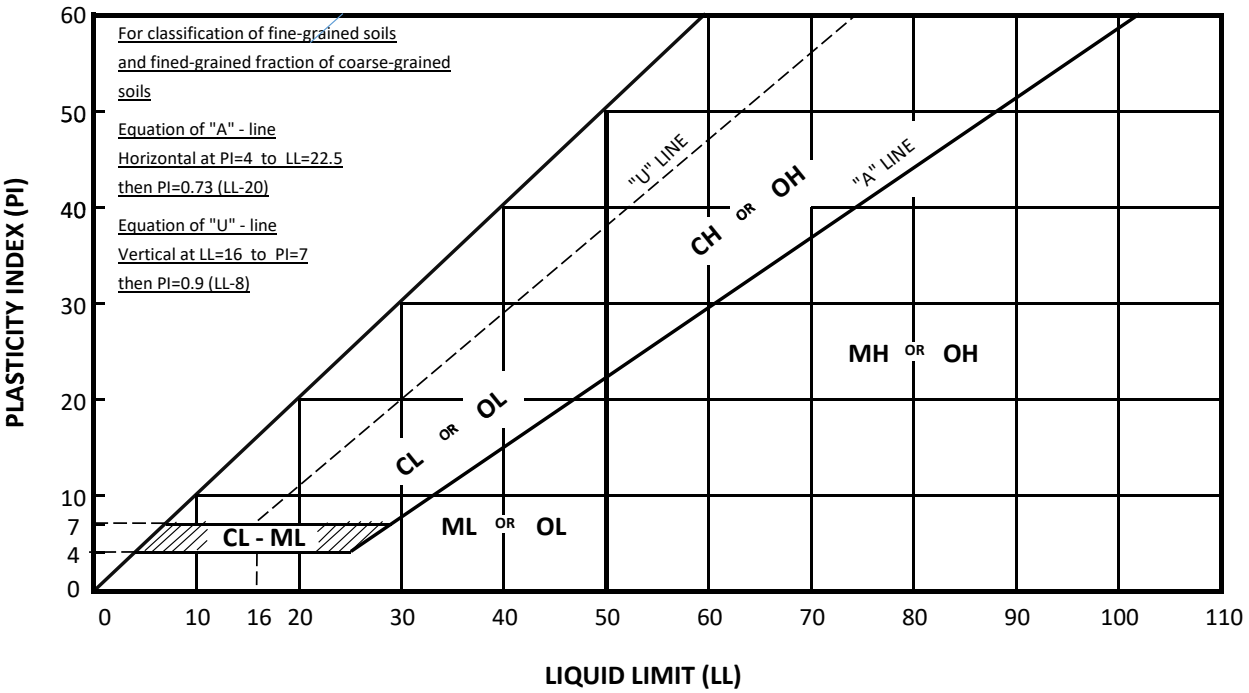
REMARKS:

Sampling Location: Mangilao, Guam - Near Stormwater Pond **Sample Number :** B-06/S-8 **Sample Depth:** 13.50 - 14.42 feet

OYO Corporation, Pacific

Project Name:	Proposed UOG Engineering Building		
Sample Description:	Obtained from SPT Samples		
Project No.:	210040	**Date Tested:**	14-Feb-22
Client:	SSFM International	**Plate No:**	

Tested By : E. Segismundo **Checked By :** T. Krasovec



Plasticity Chart

SYMBOL	LOCATION	DEPTH FEET	LL	PL	PI	CLASSSIFICATION
●	B-01/S-5	6.25-6.67	NP	NP	NP	SILT (ML)
▲	B-01/S-9	15.00-16.42	NP	NP	NP	SILT (ML)
■	B-01/S-13	35.00-36.50	NP	NP	NP	SILT (ML)
X	B-01/S-16	50.00-51.50	NP	NP	NP	SILT (ML)
◆	B-02/S-1	0.25-1.67	NP	NP	NP	SILT (ML)

Soil Consistency Guide

COHESSIONLESS SOILS			COHESSIVE SOILS		
Density	N, (blows/ft.)	Approximate Relative Density, (%)	Consistency	N, (blows/ft.)	Approximate Undrained Shear Strength, (psf)
Very Loose	0 to 4	0-15	Very Soft	0 to 2	< 250
Loose	4 to 10	15-35	Soft	2 to 4	250-500
Medium Dense	10 to 30	35-65	Medium Stiff	4 to 8	500-1000
Dense	30 to 50	65-85	Stiff	8 to 15	1000-2000
Very Dense	over 50	85-100	Very Stiff	15 to 30	2000-4000
			Hard	over 30	> 4000

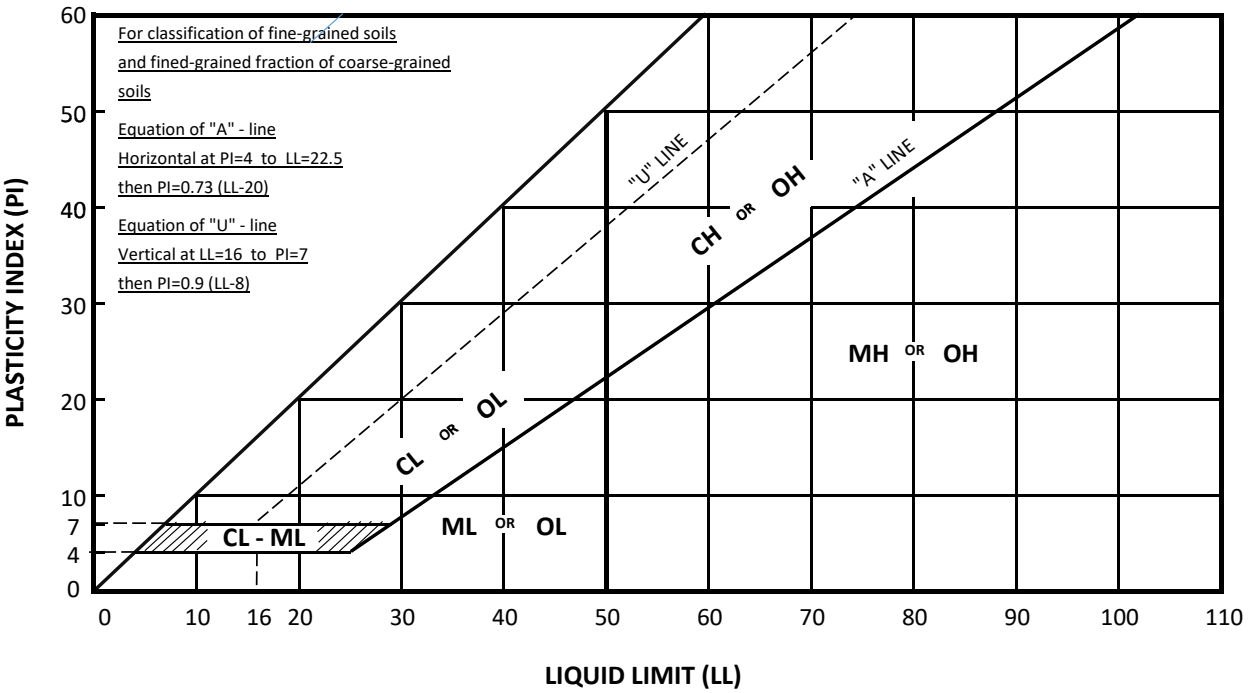
OYO CORPORATION, PACIFIC

TUMON GUAM

PLASTICITY CHART AND SOIL CONSISTENCY GUIDE

PLATE No. 1 of 5

Project Name: Proposed UOG Engineering Building
Project Location: Mangilao, Guam
Project No.: 210040

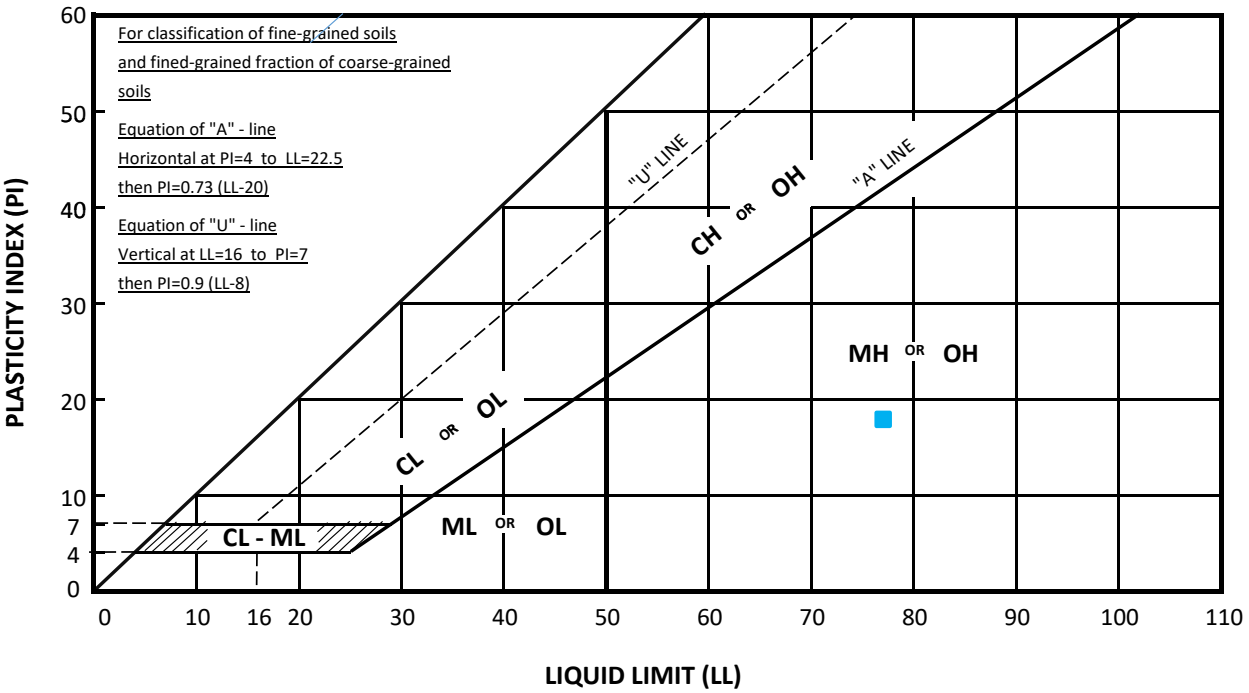


Plasticity Chart

SYMBOL	LOCATION	DEPTH FEET	LL	PL	PI	CLASSSIFICATION
●	B-02/S-3	3.25-4.50	NP	NP	NP	SILT (ML)
▲	B-02/S-7	9.25-10.00	NP	NP	NP	SILT (ML)
■	B-02/S-10	25.00-25.13	NP	NP	NP	SILT (ML)
X	B-03/S-3	3.00-4.25	NP	NP	NP	SILT (ML)
◆	B-03/S-6	7.50-9.00	NP	NP	NP	SILT (ML)

Soil Consistency Guide

COHESSIONLESS SOILS			COHESSIVE SOILS		
Density	N, (blows/ft.)	Approximate Relative Density, (%)	Consistency	N, (blows/ft.)	Approximate Undrained Shear Strength, (psf)
Very Loose	0 to 4	0-15	Very Soft	0 to 2	< 250
Loose	4 to 10	15-35	Soft	2 to 4	250-500
Medium Dense	10 to 30	35-65	Medium Stiff	4 to 8	500-1000
Dense	30 to 50	65-85	Stiff	8 to 15	1000-2000
Very Dense	over 50	85-100	Very Stiff	15 to 30	2000-4000
			Hard	over 30	> 4000

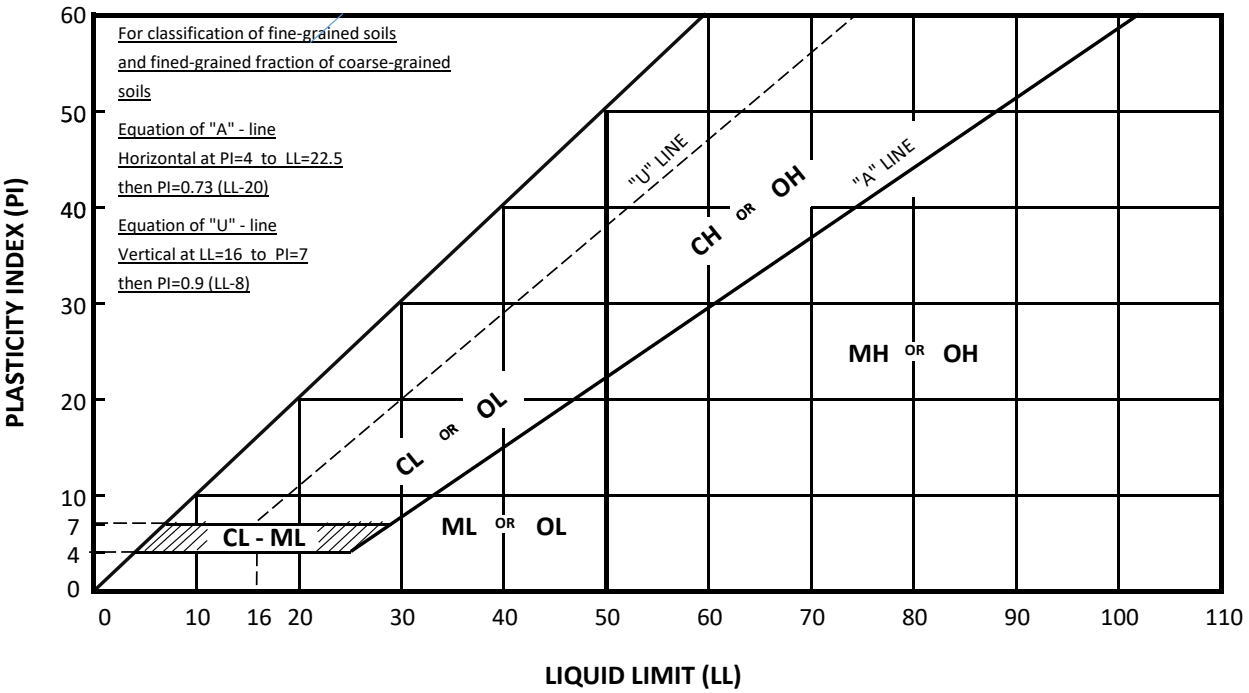


Plasticity Chart

SYMBOL	LOCATION	DEPTH FEET	LL	PL	PI	CLASSSIFICATION
●	B-03/S-9	15.00-16.50	NP	NP	NP	SILT (ML)
▲	B-03/S-12	45.00-46.50	NP	NP	NP	SILT (ML)
■	B-04/S-1	0.00-1.50	77	59	18	ELASTIC SILT (MH)
X	B-04/S-5	6.00-6.33	NP	NP	NP	SILT (ML)
◆	B-04/S-8	10.50-12.00	NP	NP	NP	SILT (ML)

Soil Consistency Guide

COHESSIONLESS SOILS			COHESSIVE SOILS		
Density	N, (blows/ft.)	Approximate Relative Density, (%)	Consistency	N, (blows/ft.)	Approximate Undrained Shear Strength, (psf)
Very Loose	0 to 4	0-15	Very Soft	0 to 2	< 250
Loose	4 to 10	15-35	Soft	2 to 4	250-500
Medium Dense	10 to 30	35-65	Medium Stiff	4 to 8	500-1000
Dense	30 to 50	65-85	Stiff	8 to 15	1000-2000
Very Dense	over 50	85-100	Very Stiff	15 to 30	2000-4000
			Hard	over 30	> 4000

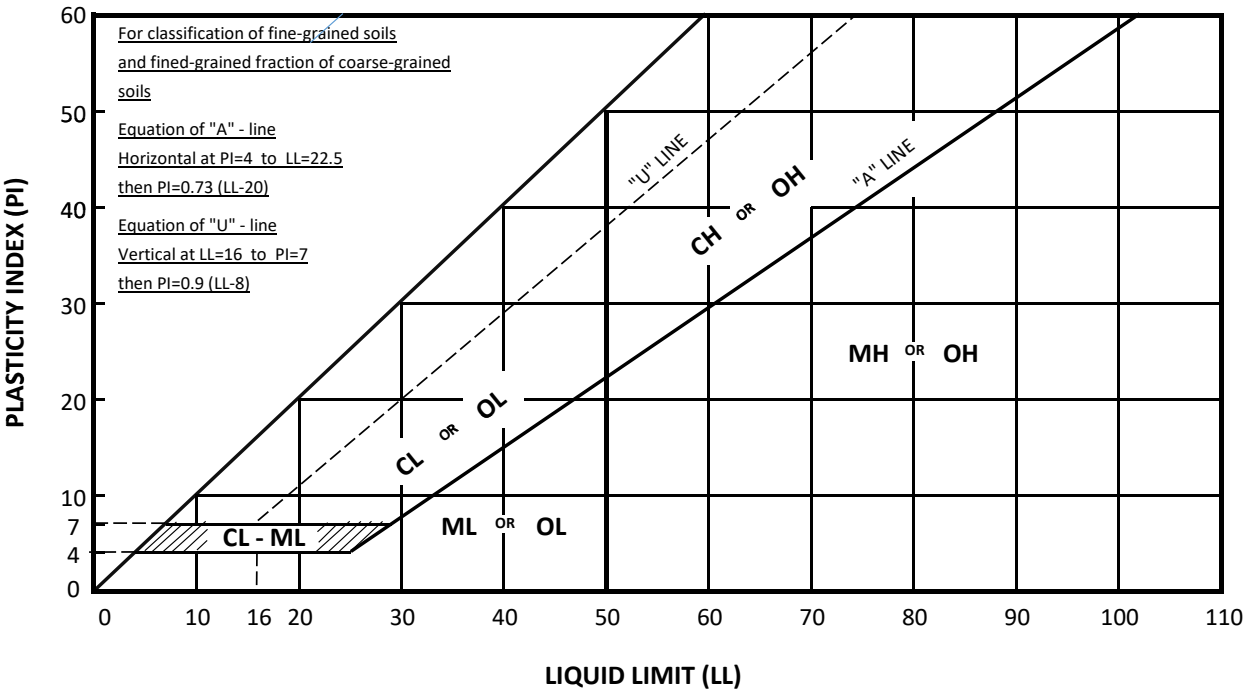


Plasticity Chart

SYMBOL	LOCATION	DEPTH FEET	LL	PL	PI	CLASSSIFICATION
●	B-04/S-12	45.00-46.50	NP	NP	NP	SILT (ML)
▲	B-05/S-4	4.75-6.25	NP	NP	NP	SILT (ML)
■	B-05/S-7	9.25-10.75	NP	NP	NP	SILT (ML)
X	B-05/S-11	35.00-36.50	NP	NP	NP	SILT (ML)
◆	B-06/S-4	4.50-4.92	NP	NP	NP	SILT (ML)

Soil Consistency Guide

COHESSIONLESS SOILS			COHESSIVE SOILS		
Density	N, (blows/ft.)	Approximate Relative Density, (%)	Consistency	N, (blows/ft.)	Approximate Undrained Shear Strength, (psf)
Very Loose	0 to 4	0-15	Very Soft	0 to 2	< 250
Loose	4 to 10	15-35	Soft	2 to 4	250-500
Medium Dense	10 to 30	35-65	Medium Stiff	4 to 8	500-1000
Dense	30 to 50	65-85	Stiff	8 to 15	1000-2000
Very Dense	over 50	85-100	Very Stiff	15 to 30	2000-4000
			Hard	over 30	> 4000



Plasticity Chart

SYMBOL	LOCATION	DEPTH FEET	LL	PL	PI	CLASSSIFICATION
●	B-06/S-7	9.00-9.42	NP	NP	NP	SILT (ML)
▲		15.00-16.00				
■		0.00-1.50				
X		43.50-44.25				
◆		6.00-7.50				

Soil Consistency Guide

COHESSIONLESS SOILS			COHESSIVE SOILS		
Density	N, (blows/ft.)	Approximate Relative Density, (%)	Consistency	N, (blows/ft.)	Approximate Undrained Shear Strength, (psf)
Very Loose	0 to 4	0-15	Very Soft	0 to 2	< 250
Loose	4 to 10	15-35	Soft	2 to 4	250-500
Medium Dense	10 to 30	35-65	Medium Stiff	4 to 8	500-1000
Dense	30 to 50	65-85	Stiff	8 to 15	1000-2000
Very Dense	over 50	85-100	Very Stiff	15 to 30	2000-4000
			Hard	over 30	> 4000

OYO CORPORATION, PACIFIC	**PLASTICITY CHART AND SOIL CONSISTENCY GUIDE**		**PLATE No.**
	Project Name:	**Proposed UOG Engineering Building**	**5 of 5**
	Project Location:	**Mangilao, Guam**	
TUMON **GUAM**	**Project No.:**	**210040**	

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

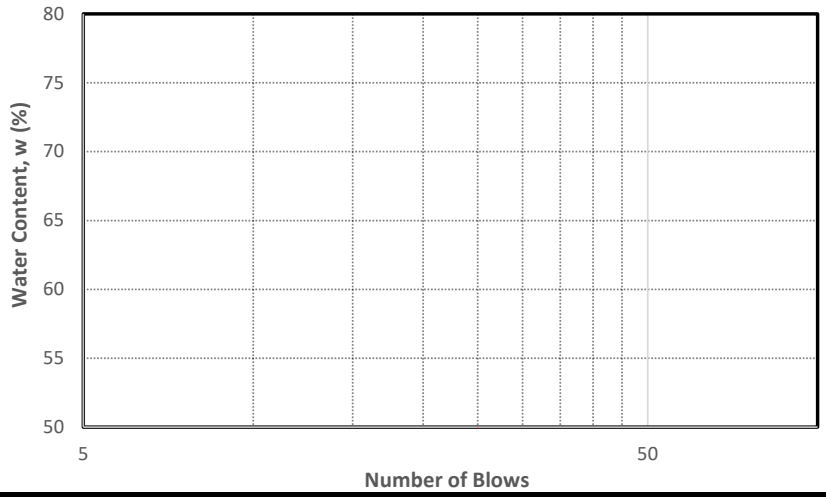
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**6.25-6.67 ft**	**Sample No.:**	**B-01/S-5**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

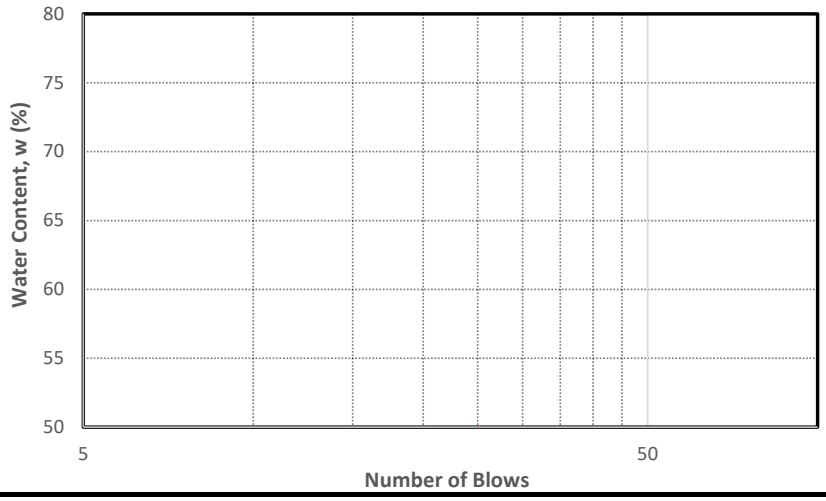
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**15.00-16.42 ft**	**Sample No.:**	**B-01/S-9**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

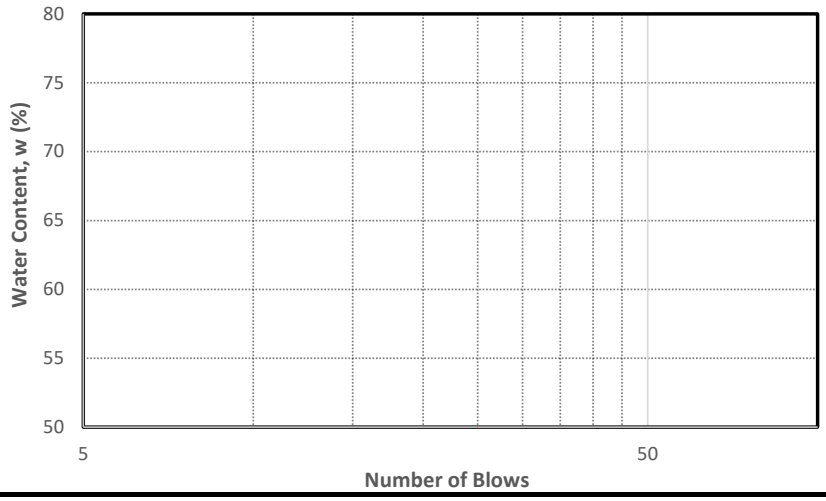
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**35.00-36.50 ft**	**Sample No.:**	**B-01/S-13**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

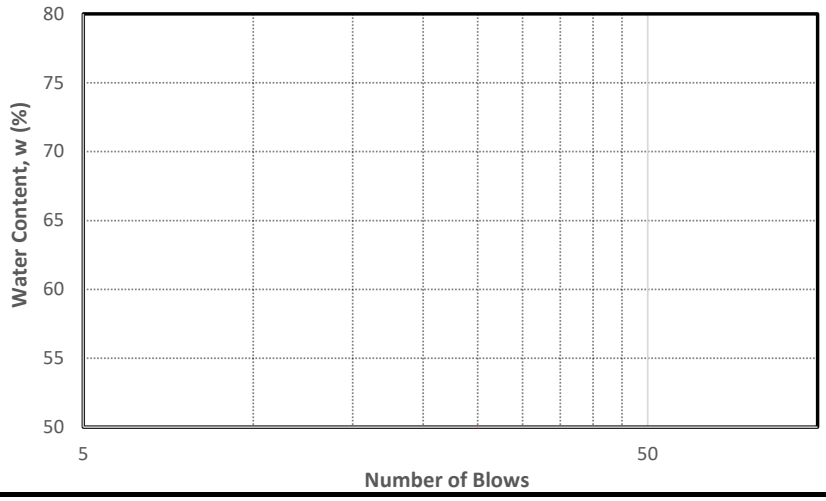
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**50.00-51.50 ft**	**Sample No.:**	**B-01/S-16**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

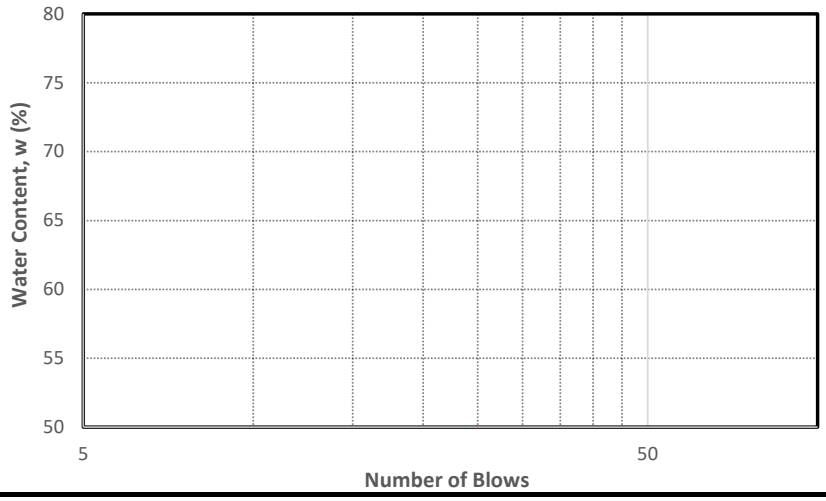
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**0.25-1.67 ft**	**Sample No.:**	**B-02/S-1**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

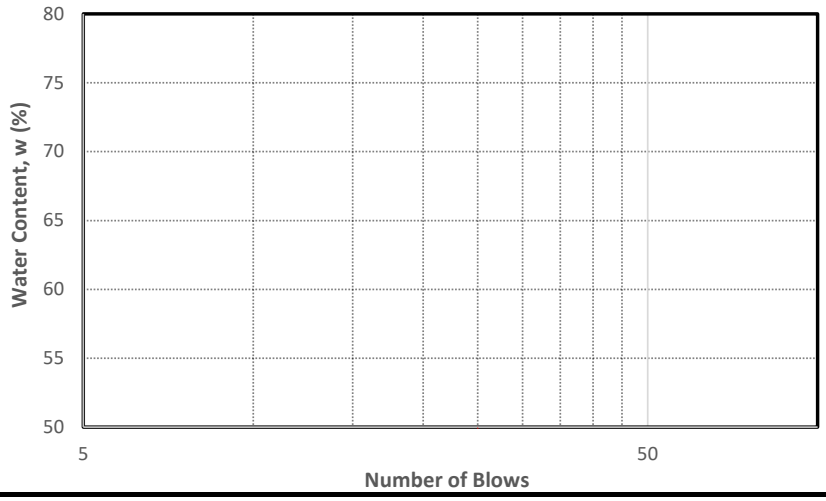
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**3.25-4.50 ft**	**Sample No.:**	**B-02/S-3**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

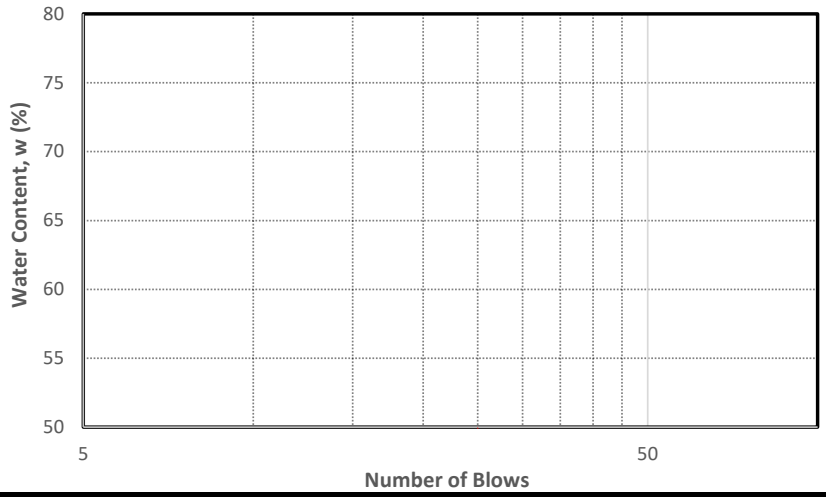
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**9.25-10.00 ft**	**Sample No.:**	**B-02/S-7**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

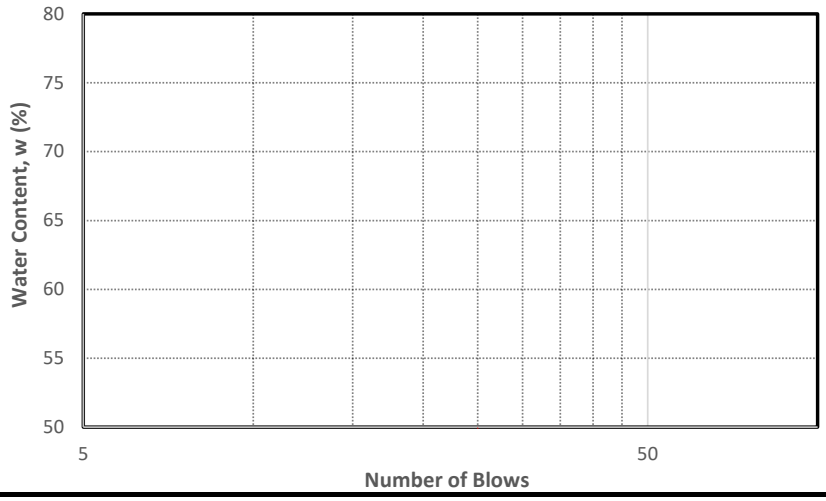
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**25.00-25.13 ft**	**Sample No.:**	**B-02/S-10**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

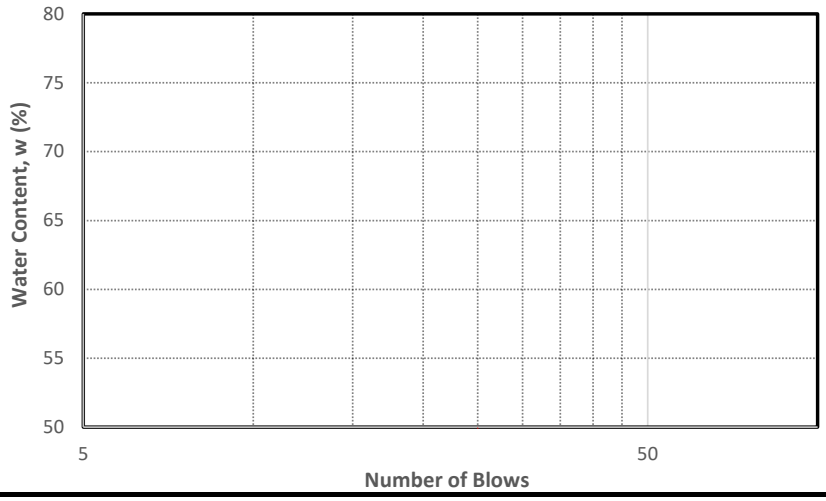
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**10-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**3.00-4.25 ft**	**Sample No.:**	**B-03/S-3**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

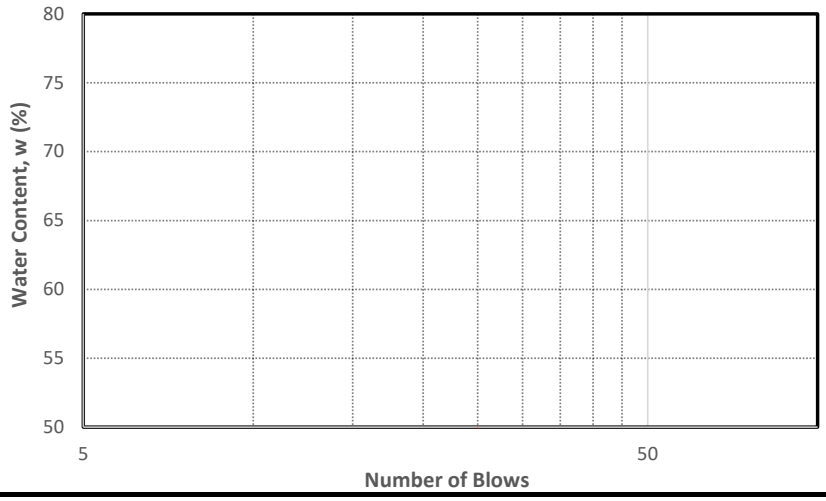
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**7.50-9.00 ft**	**Sample No.:**	**B-03/S-6**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

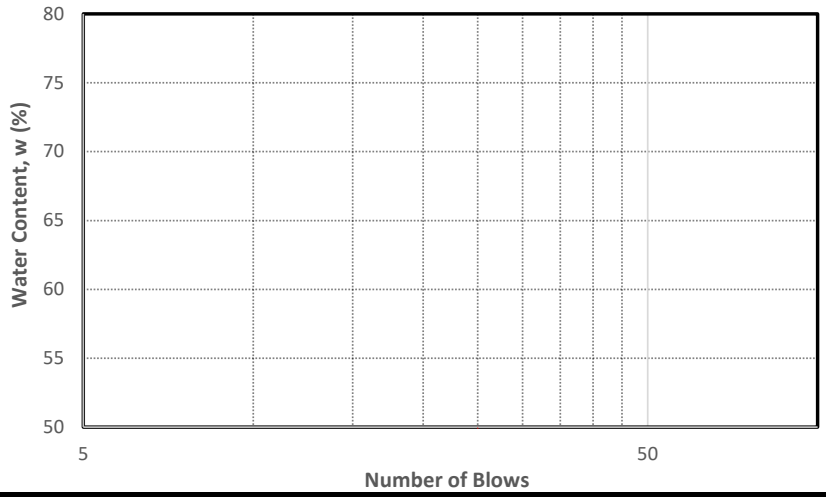
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**15.00-16.50 ft**	**Sample No.:**	**B-03/S-9**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

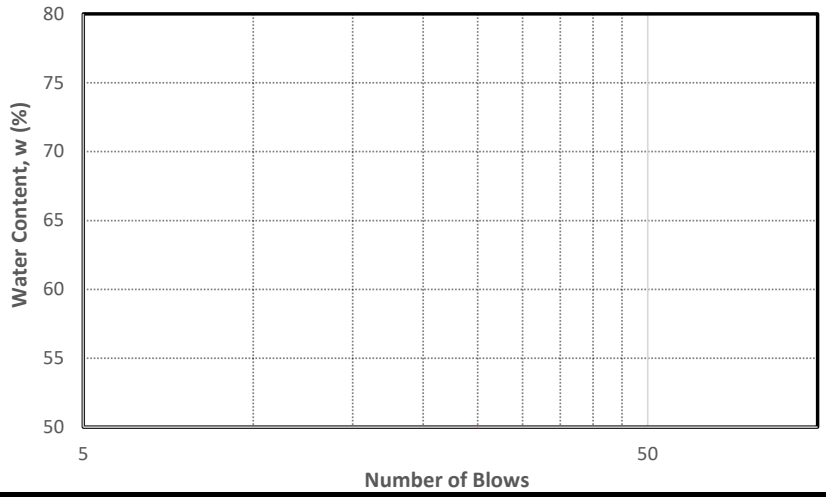
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**45.00-46.50 ft**	**Sample No.:**	**B-03/S-12**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

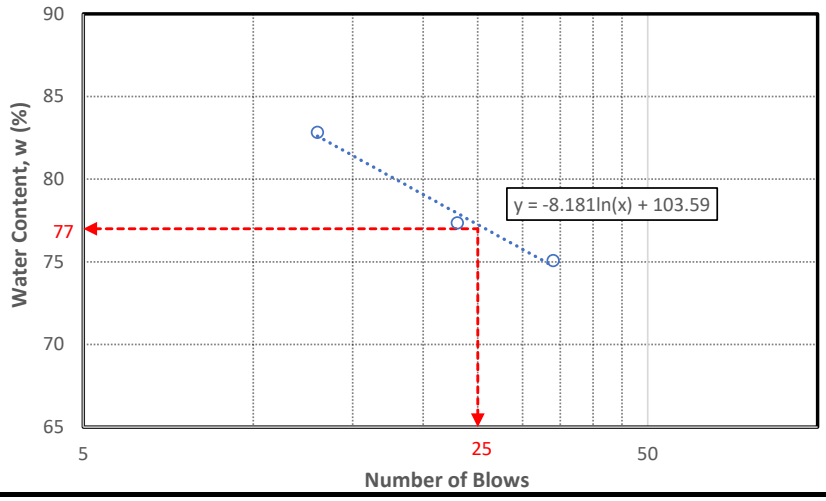
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**0.00-1.50 ft**	**Sample No.:**	**B-04/S-1**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm	-	-	-				
Final gauge reading	mm	-	-	-				
Average Penetration	mm	-	-	-				
Container no.		LL1	LL2	LL3				
Mass of wet soil + container	g	31.99	33.38	32.82				
Mass of dry soil + container	g	27.02	27.98	27.76				
Mass of container	g	21.02	21.00	21.02				
Mass of moisture	g	4.97	5.40	5.06				
Mass of dry soil	g	6.00	6.98	6.74				
Moisture content	%	82.83	77.36	75.07				
Number of Blows	-	13	23	34				



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :	x	Washed on #40 Sieves	X
Dry (Air)		Dry Sieve on #40 Sieve	
Dry (Oven)		Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:	x	Demineralized	Other:

Liquid Limit, LL (%)	**77**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g	27.47	27.00	26.97				
Mass of dry soil + container	g	25.09	24.79	24.79				
Mass of container	g	21.01	21.05	21.05				
Mass of moisture	g	2.38	2.21	2.18				
Mass of dry soil	g	4.08	3.74	3.74				
Moisture content	g	58.33	59.09	58.29				
Plastic Limit, PL (%)		**59**						

Plasticity Index, PI (%)	**18**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

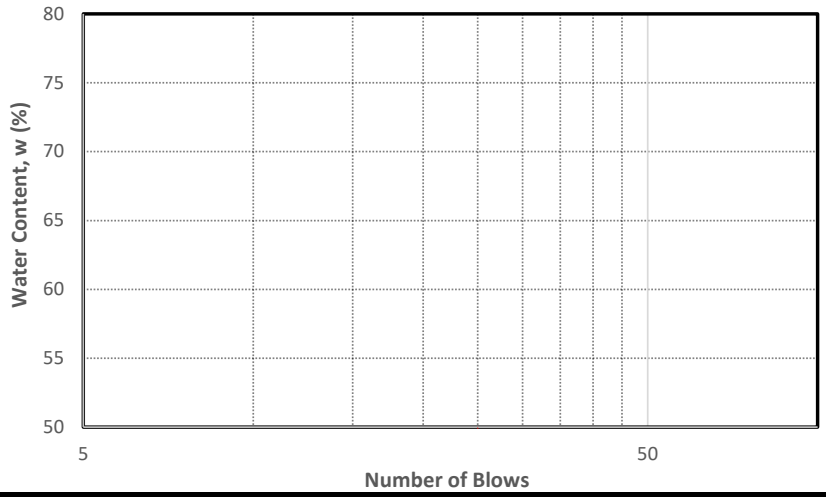
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**6.00-6.33 ft**	**Sample No.:**	**B-04/S-5**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

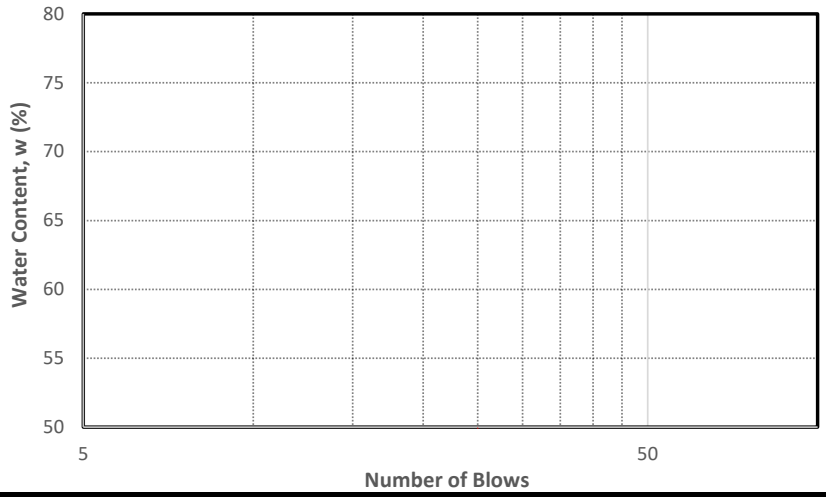
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**10.50-12.00 ft**	**Sample No.:**	**B-04/S-8**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

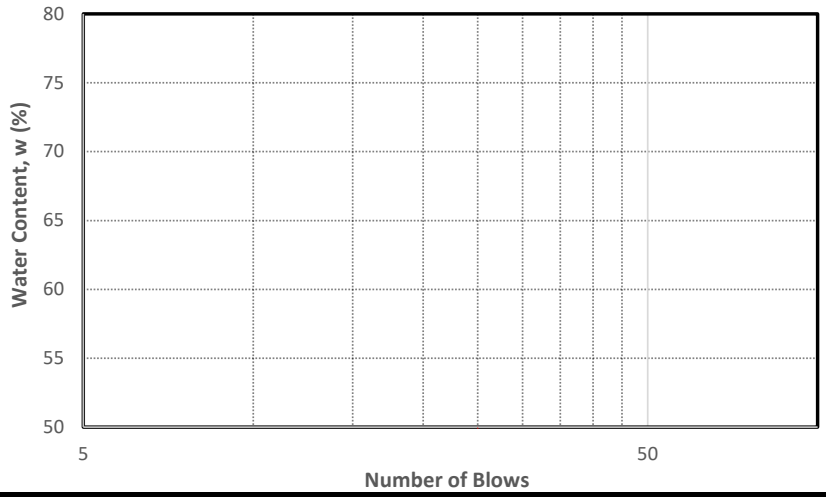
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**11-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**45.00-46.50 ft**	**Sample No.:**	**B-04/S-12**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

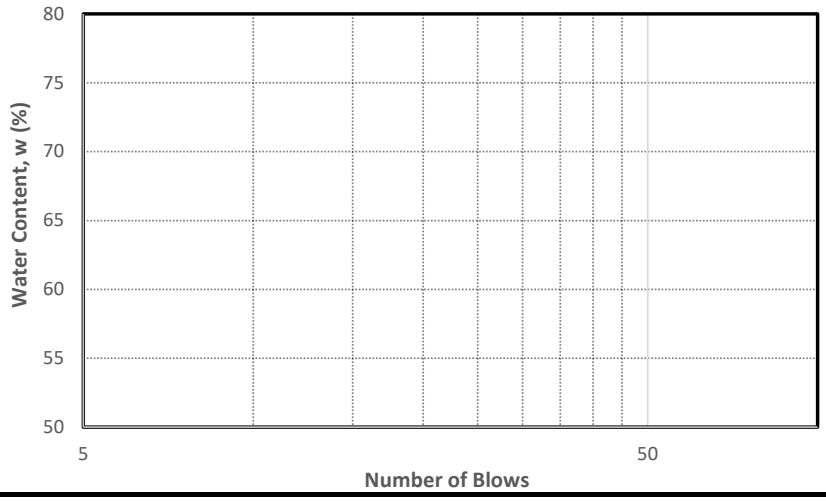
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**14-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**4.75-6.25 ft**	**Sample No.:**	**B-05/S-4**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

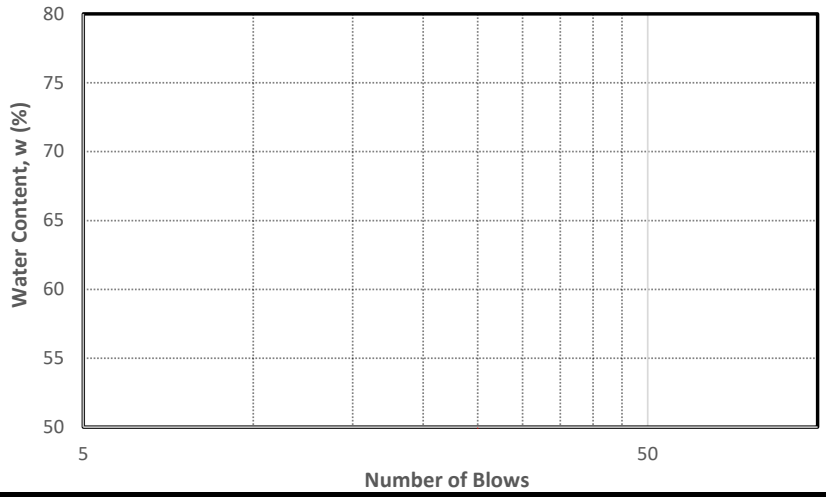
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**14-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**9.25-10.75 ft**	**Sample No.:**	**B-05/S-7**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

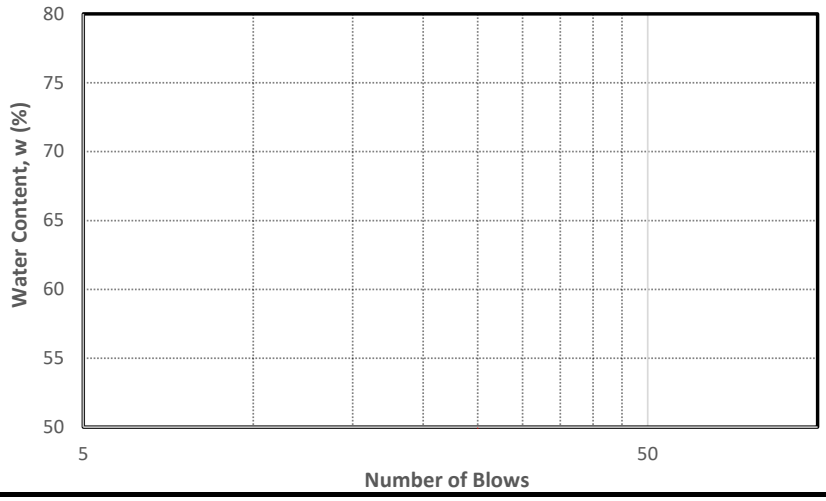
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**14-Feb-22**
Location:	**Mangilao, GU**	**Depth:**	**35.00-36.50 ft**	**Sample No.:**	**B-05/S-11**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

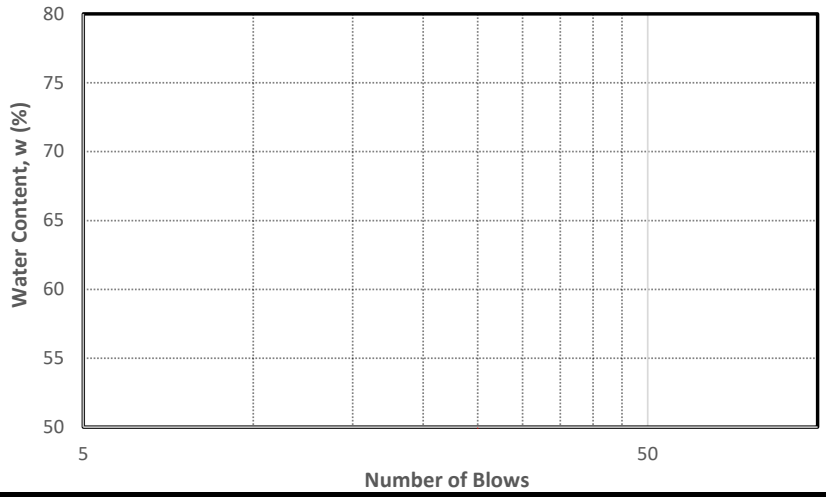
(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**14-Feb-22**
Location:	**Mangilao, GU - Near Stormwater Pond**	**Depth:**	**4.50-4.92 ft**	**Sample No.:**	**B-06/S-4**

TEST METHOD

LIQUID LIMIT

TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT

TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

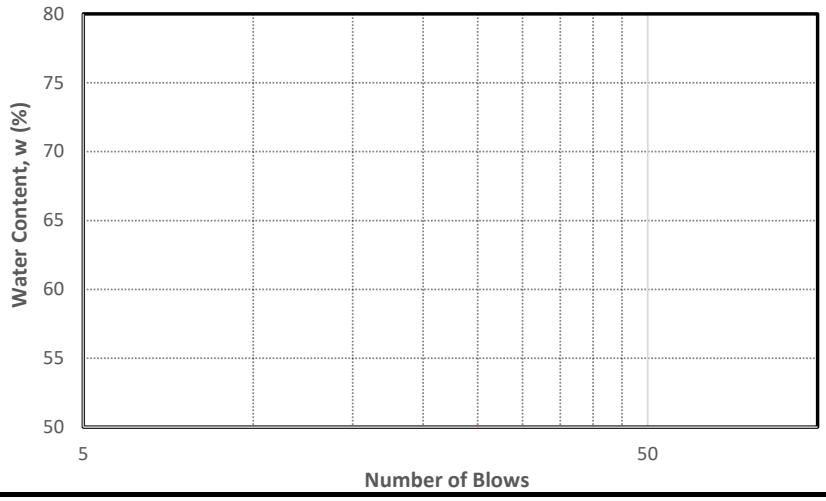
Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

(ASTM D 4318-17e1)

Project Name:	**Proposed UOG Engineering Building**				
Project No.:	**210040**	**Client:**	**SSFM International**	**Date:**	**14-Feb-22**
Location:	**Mangilao, GU - Near Stormwater Pond**	**Depth:**	**9.00-9.42 ft**	**Sample No.:**	**B-06/S-7**

TEST METHOD

LIQUID LIMIT								
TEST NO.		1	2	3	4	5	6	7
Initial gauge reading	mm							
Final gauge reading	mm							
Average Penetration	mm							
Container no.								
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	%							
Number of Blows	-							



TESTING EQUIPMENT USED		
Plastic Limit :	Hand Rolled	
	Mechanical Rolling Device	X
Liquid Limit :	Manual	
Apparatus No.	Mechanical	X
Casagrande	Metal	X
Grooving Tool:	Plastic	

SPECIMEN PREPARATION			
Wet :		Washed on #40 Sieves	
Dry (Air)		Dry Sieve on #40 Sieve	X
Dry (Oven)	x	Mech. Pushed Through	
Mixed on Glass Plate and Removed Medium Plus Sand Particles			
Mixing Water :			
Distilled:		Demineralized	Other:

Liquid Limit, LL (%)	**Non-Plastic**

PLASTIC LIMIT								
TEST NO.		1	2	3	4	5	6	7
Mass of wet soil + container	g							
Mass of dry soil + container	g							
Mass of container	g							
Mass of moisture	g							
Mass of dry soil	g							
Moisture content	g							
Plastic Limit, PL (%)		**Non-Plastic**						

Plasticity Index, PI (%)	**Non-Plastic**

Remarks:

Tested by: R. Caguin

Checked by: E. Segismundo Approved by: T. Krasovec

ANNOUCEMENT REGARDING THE LOCATION OF THE PPC:
The location started in JELG-SBPA Room 261; until 10:15 A.M. when there were more attendees than the room could accommidate. The PPC was moved to SBPA's Room No. 131 downstairs. The signage on the door of room 261; stated that the PPC was continuing in Room 131.

UOG REPRESENTATIVES PRESENT:

Emily Gumataotao, *Supply Management Adminstrator*	PROCUREMENT OFFICE	Office: E-Mail:	(671)735-2925, eggumataotao@triton.uog.edu procurementoffice@triton.uog.edu
Glenn Leon Guerrero, *Director*	FACILITIES MANAGEMENT & SERVICES OFFICE	Office: E-Mail:	(671) 735-2376 or 735-2375 glennlg@triton.uog.edu
Sandra McAuliffe, *Program Coordinator II*	FMS	Office: E-Mail:	(671) 735-2377 smcauliffe@triton.uog.edu
Bernard S. Benavente, *Resident Inspector*	FMS	Office: E-Mail:	(671) 735-2375 nbtguam@gmail.com
Dr. Jeffrey Y. Cheng, Ph.D., P.E. *Associate Professor of Civil Engineering*	SCHOOL OF ENGINEERING	Office: E-Mail:	(671) 735-7695 or (671) 777-8257 chengc@triton.uog.edu
Ernesto J Guades, Ph.D., P.E. *Assistant Professor of Civil Engineering*	SCHOOL OF ENGINEERING	Office: E-Mail:	(671) 671-735-1822 guadese@triton.uog.edu
Cathleen Moore-Linn, *Executive Director*	RESEARCH CORPORATION OF UOG	Office: E-Mail:	(671) 735-0250 cmoore@triton.uog.edu
Katrina Perez, *Executive Director*	UOG ENDOWNMENT FOUNDATION	Office: E-Mail:	(671) 735-2956/482-1213 katrina@uogendowment.org

NOTICE:
At the end of the PPC, several companies were reviewing the contact tracing sheets to ensure their company was properly listed. However, these [1]contacting tracing sheets went missing. Perhaps, accidentially picked up by someone along with their documents. The University respectfully requests for all attendees to please check their handouts or documents they had with them during the Pre-Proposal Conference to see if the contact tracing sheets are among them. In the meantime, only copies of the [2]additional contact sheets (provided by FMS) will be provided with this Minutes.

INTERESTED ATTENDEES:
Attendees were asked to fill-out the ***(1)*** UOG SBPA Contact Tracing Sheet and ***(2)*** FMS provided additional notebook sheets for each company to provide in greater detail the names of their assigned personnel, their contact numbers, and good e-mailing addresses; because *Amendment No. 2* for this RFP was currently being drafted. Distribution was being planned for next week Tuesday (03/15/22). If you have not seen *Amendment No. 2* or the *MINUTES* for this PPC by then; please go ahead and contact the Procurement office to verify your email addresses is on the registry.

	COMPANY NAME	REPRESENTATIVE	CONTACT INFORMATION	
1.	IAN CORPORATION	John Valentine	Cell: (671) 988-1222	E-Mail: JTValentine@ianconstruction.com
		Jun Park	Tel.: (671) ___-____	E-Mail: junpark@ ianconstruction.com
2.	GHD	Aaron Sutton	Tel.: (671) 472-6792	E-Mail: aaron.sutton@gmail.com
3.	RIM ARCHITECTS	Brent Wiese	Cell: (671) 988-3629	E-Mail: bwiese@rimarchitects.com
4.	PACIFIC RIM CONSTRUCTION	Arniel Torres	Cell: (671) 988-8818	E-Mail: atorres@pacificrimc.net
5.	ORION CONSTRUCTION	Philsan Kim	Cell: (671) 788-6666	E-Mail: philsan.kim@orion-guam.com
6.	RELIABLE BUILDERS, INC.	_____	Cell: (671) 888-3811	E-Mail: jmagtoto@reliablebuildersguam.com
		_____	Cell: (671) 482-4322	E-Mail: tricon0624@gmail.com
7.	DESIGN PARTNERS, INC.	Sonny Rosal	Cell: (671) 988-7827	E-Mail: sonny.rosal@designpartnersinc.com
8.	UNITED MECHANICAL	_____	Cell: (671) 488-6788	E-Mail: rgc.united_mechancial@hotmail.com
9.	CANTON /	Bobby Ycng	Cell: (671) 685-3046	E-Mail: bobby.ycng@guamcanton.com
	AMERICAN BUILDER	Ronald Su	Cell: (671) 688-8100	E-Mail: ronaldsu@harvestguam.com
10.	AMORIENT ENGINEERING	Hernan ____	Cell: (671) 482-3309	E-Mail: hernan@amorient.com
11.	TANIGUCHI, RUTH & ASSOCIATES	Michael Makio	Cell: (671) 727-8772	E-Mail: mmakio@traguam.com
12.	PACIFIC RIM CONSTRUCTION	Derek Moss	Cell: (671) 929-2899	E-Mail: dmoss@pacificrimco.net
13.	SMCCGUAM	Mark Anthony Ancheta	Cell: (671) 898-0665	E-Mail: m.ancheta@smccguam.com

DISCUSSIONS:

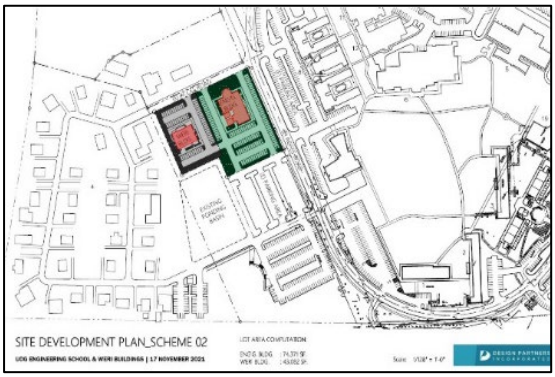
1. All attendees were informed that the PPC is being recorded. Everyone was asked to introduce themselves.

2. All questions answered today are not official – please submit your questions officially in writting to the procurement office; and your questions will be officially answered (under a Q&A Sheet); but we will attempt to answer what we can today.

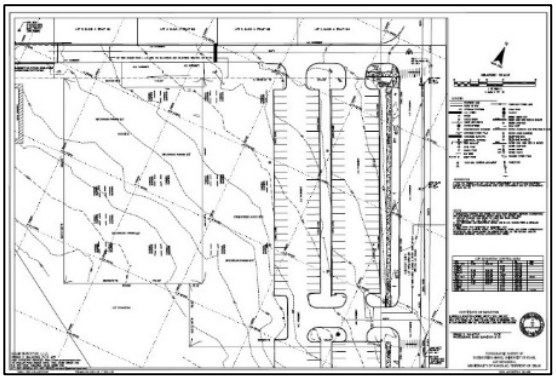
3. The University will be issuing Amendment 2 next week to distribute the Soil Report and Topo information prepared by SSFM International, Inc. which was received on March 10, 2022.

4. The following handouts (11" X 17" sheets) were provided to those in attendance:

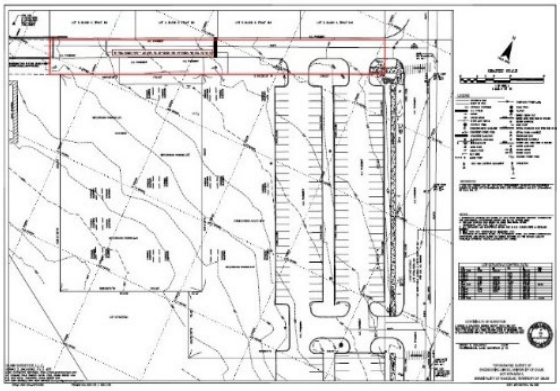
Handout 1:
Site Development Plan for the new SENG Site.



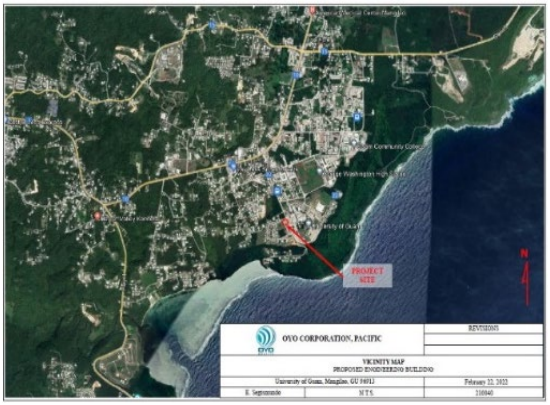
Handout 2:
Survey Topo provided by SSFM International.



Handout 3:
Property Map with Easement Outline
on Survey Topo map provided by SSFM.



Handout 4:
Excerts from the Geotechnical Engineering Assessment for SENG, 03/09/22, prepared by *OYO Pacific on behalf of SSFM International (Job No. 210040); pages 30 & 31 below.*



5. The Director of UOG Facilities Management & Services (Mr. Glenn Leon Guerrero) discussed that this solicitation is a ***"Design-Build"*** Construction Services project that may be funded under UOG-EF's loan application with the USDA Community Facilities Loan Program. The size of the proposed facility is approximately 16,000 square feet within a 2-story envelope, with a *"Maximum Guartanted Price."*

   Attendees were advised about the upcoming new WERI building under an EDA grant and how the two (2) buildings were adjacent to each other. However, the site for the proposed SENG building has two (2) options; face University Drive/J.U. Torres Drive or Alstrom Circle (aka Dean Circle). He further discussed that the clock on the USDA loan started on September 2020 and that the D/B construction would have to be completed within 5 years from that date.

6. Two (2) professors from SENG were in attendance. Dr. Cheng discussed SENG's preferred facility setup. He stated the research laboratories should be on the first floor and the regular classrooms and offices should upstairs.

7. Attendees were invited to participate in the *Site Visit* afterwards. Around 11:00 AM, or ten (10) minutes after this PPC *(if you are interested);* meet in the vacant lot between UOG's *English Language Institute* (ELI) paved parking lots and the paved parking lots across the street from the UOG CLASS buildings.

8. Below, is a snap shot of those who participated in the Site Visit; and the Site Visit was adjourned.