OWNER-CONTRACTOR AGREEMENT
LABOR AND MATERIALS CONTRACT

PROJECT : **SCIENCE LABORATORY BUILDING**

LOCATION : **College Campus**
Saint Mary's University
Ponce St., Don Mariano Marcos,
Bayombong, Nueva Vizcaya

OWNER : **SAINT MARY'S UNIVERSITY**

CONTRACTOR : **MANRIC CONSTRUCTION**

THIS AGREEMENT, made and entered into this 20th day of September, Year Two Thousand Twenty Four by and between

SAINT MARY'S UNIVERSITY, represented herein by its President, **Dr. John Octavious S. Palina**, hereinafter called the **OWNER**,

and

MANRIC CONSTRUCTION, represented herein by its General Manager, **Engr. Rico T. Tiongson,** hereinafter called the **CONTRACTOR**,

WITNESSETH AS FOLLOWS:

1. **SCOPE OF WORK**
   1.01 The CONTRACTOR, in consideration of the payment to be made by the OWNER to the CONTRACTOR, of the sum of money hereinafter specified, agrees to provide the plans, permits, labor, materials, equipment, plant tools and other facilities and the satisfactory and faithful performance of all the work, necessary to commence and complete the construction project, ready for use in accordance with the drawings described in the plans, specifications, instructions and other related documents attached herewith as an integral part of this agreement, as prepared by the Contractor.

   1.02 WHEREAS, the CONTRACTOR presented and warranted to the OWNER that it is capable, competent to construct and complete the aforementioned project in accordance with the plans and specifications hereinafter referred;

   1.03 WHEREAS, on the basis of the foregoing representation and warranty of the OWNER, the CONTRACTOR accepted the offer of the CONTRACTOR to construct the above-mentioned project.

2. **TIME OF COMPLETION AND LIQUIDATION DAMAGES**
   2.01 The work stipulated in this contract shall be commenced not later than **September 23, 2024** in accordance with the plans and specifications above mentioned and fit for occupancy and use on or before **July 31, 2025** unless prevented by strikes, accidents, non-working public holidays, weather or other unforeseen and unavoidable causes, in which case of the aforesaid CONTRACTOR shall have the power to extend the time of construction and he shall certify accordingly.

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2.02 As time is the essence of this contract, the CONTRACTOR agrees to pay the owner the amount equivalent to One tenth of one percent (1/10 of 1%) of the contract amount for each and every calendar day of delay, the said payment to be considered as Liquidation Damages.

3. CONTRACT AMOUNT

3.01 The OWNER agrees that for and in consideration of the faithful performance of the CONTRACTOR of this contract, he will promptly pay to the CONTRACTOR the amount of **thirty-seven million five hundred ninety-seven thousand three hundred forty-seven pesos & 65/100 (=P37,597,347.65)** in the manner specified hereinafter.

3.02 It is expressly agreed upon by both parties that no changes shall be made in the aforementioned contract amount or price as a result of the fluctuation in the cost of materials and/or labor, except in those circumstances as enumerated in item 3.03.

3.03 Should the OWNER require the CONTRACTOR to perform work over and above the originally required and as agreed upon in this agreement, the additional cost and expenses shall be added to the contract amount or price. In the said case, the cost of additions or reductions shall be mutually agreed upon in writing by the OWNER and the CONTRACTOR with the intervention, recommendation and approval of the aforesaid CONTRACTOR before execution of said modified agreement and said CONTRACTOR should compute and certify as to the value of such additional or other works and of works omitted as soon as practicable, and the amount so ascertained shall be added or deducted as the case may be, from the contract amount or price:

4. PAYMENT TERMS

4.01 The OWNER shall give a down payment for mobilization to the CONTRACTOR in the amount equivalent to 20% of the total contract cost on **September 24, 2024**, after the confirmation and signing of this construction contract.

4.02 The rest of the payments will be given on a **progress billing** basis based on the assessed percentage of completion of the project until the full amount is fully paid to the CONTRACT by the OWNER. 10% of the total contract cost shall be retained and shall be paid after one month of turnover / occupancy and corresponding receipt of the Certificate of Occupancy.

4.03 The OWNER shall not incur any expenses above and beyond the aforementioned agreed contract amount, except for the additional or extra works or changes that may be required and authorized in writing by the CONTRACTOR under Clause 3.03 hereof.

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5. CONTRACT DOCUMENTS

5.01 The following documents prepared by the CONTRACTOR shall constitute an integral part of this contract as fully as thereto attached or herein stated, except as otherwise modified by mutual agreement of parties:

A. Architectural Drawings / Description and Amenities of the Building
B. Structural Drawings
C. Electrical Drawings
D. Bill of Materials
E. Sanitary and Drainage Drawings
F. General Program of work schedule

6. GUARANTEE

6.01 The CONTRACTOR shall make good any defect in materials and workmanship which may appear or become evident within one (1) year after acceptance of the OWNER of the project of this contract, and if within five (5) days from the date of notice by the OWNER to the CONTRACTOR of such defects, the CONTRACTOR fails to act in rectifying and/or correcting such defects, the OWNER may, at his own discretion, have the work done by another party at the expense of the CONTRACTOR.

7. TAXES AND LICENSES

7.01 All taxes and licenses, which may be due to the Local and/or National government on account of performance and completion of the work stipulated, shall be paid for and obtained by the CONTRACTOR.

8. PERMITS AND FEES

8.01 All expenses for permits, licenses, clearances and fees, which may be necessary for the construction of the building, shall be complied with strictly by and borne by the OWNER.

9. INSURANCE AND OTHER CONDITIONS

9.01 The CONTRACTOR shall secure insurance to protect him against claims for damages for personal injury including death, caused either to its employee(s) or to any third persons, and for claims of any nature arising out of their duties as employees of the CONTRACTOR. The employees of the CONTRACTOR shall be hired directly by the CONTRACTOR, and this contract shall not be deemed to constitute a contract of employment by and between the OWNER and any of the men hired or taken by the CONTRACTOR, and thus it is clearly understood that this contract is solely between OWNER and the CONTRACTOR.

10. SUB-CONTRACT

10.1 Supervisory function as authorized by the OWNER over the SUB-CONTRACTOR shall be included under the responsibilities of the CONTRACTOR in overseeing the faithful performance of the contract entered into by the OWNER with the SUB-CONTRACTOR.

11. MISCELLANEOUS STIPULATIONS

11.1 The OWNER shall assist the CONTRACTOR in securing the necessary permits and licenses by way of providing the proof of ownership of the lot specifically the Transfer Certificate of Title, Real Property Tax Declaration, Tax Clearance and other related documents.

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11.2 The OWNER shall provide full information as to the requirements of the project. The CONTRACTOR, having the responsibility of providing for all the manpower and labor for this project, shall be the employer of all the workers and shall be responsible for all matters pertaining to such labor force.

11.3 The OWNER shall designate its duly authorized representatives, who will work and coordinate closely with the CONTRACTOR, or his representative, with respect to the compliance with approved plans, drawings, and specifications forming part of this agreement.

11.4 The representatives of the OWNER shall always be allowed to inspect the project at any day and time within the construction period.

11.5 The CONTRACTOR shall, for the duration of the project, see to it that all laws, government regulations, and Municipal ordinances and regulations governing employment and constructions are observed and he shall safeguard the OWNER from violations thereof.

11.6 The CONTRACTOR agrees to show proof, if required by the OWNER, that the proper amount of SSS, Medicare, and Employees' Compensation and laborers' income taxes withheld have been remitted to the proper government agencies concerned at the time required by law, and the wages and other benefits paid to workers are in accordance with the provisions of law.

11.7 The CONTRACTOR shall observe safety precautions to ensure the safety of the workers on site and the general public as well as to prevent damage to adjacent properties.

11.8 The CONTRACTOR shall see to it that the new buildings shall be constructed strictly according to the plans, specifications and general conditions of the project and/or UAP standards.

11.9 The CONTRACTOR guarantees and warrants quality of workmanship against any defects. Cost of material wastages arising from defects of workmanship like "kapak" and/or similar or other defects shall be borne by the CONTRACTOR and shall be deducted from progress billings.

11.10 The CONTRACTOR hereby guarantees and warrants the stability, strength and structural integrity of the subject PROJECT within the period mandated by the Civil Code of the Philippines and other applicable building laws, rules and regulations.

11.11 It shall be the obligation of the CONTRACTOR to clear the premises of all debris immediately upon completion of the job and to have the premises broom-clean before turnover to the OWNER.

11.12 The OWNER shall not be held liable for any and all liens and encumbrances which the CONTRACTOR might incur from any and all third parties or entities arising from the supply of materials, labor, or services rendered for the project.

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11.13 The CONTRACTOR shall provide safeguards, facilities, equipment and personnel for the full protection and safety of the construction site and its entire premises and the safety and protection of the general public, pursuant to the standard and/or acceptable norms and practices in the Construction Industry and/or as may be mandated by applicable laws, rules and regulations.

11.14 The CONTRACTOR shall be solely responsible for and shall exclusively bear any and all costs and expenses caused by any and all losses, damages, accidents, torts, wrongful acts, crimes or felonies, deaths, injuries, and fire sustained by his laborers or workers, staff, personnel, representatives and agents, general public, and/or by any and all Third Parties and Entities arising from or in connection with the execution of the works and services stipulated in this Agreement.

The parties hereto hereby agree to full performance of the covenant herein.

IN WITNESS WHEREOF, the parties and witnesses to this agreement of the day, month and year first above given, hereunto set their hands on this page and on the left margins of all the other pages of the agreement.

OWNER:

ST. MARY'S UNIVERSITY
(Represented by its President, Dr. John Octavious S. Palina)

CONTRACTOR:

MANRIC CONSTRUCTION
(Represented by its Manager, Engr. Rico T. Tiongson)

Signed in the presence of:

Rev. Philip A. Yu Jr., CICM
Vice President for Mission and Identity / CICM Liason Officer

Engr. Leonido A. Costales, Jr.
Civil Engineer Consultant

Mr. Sherwin A. Marciano
Head, PPPDMO

Engr. Jojo C. Mariano
Electrical Engineer Consultant

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SCOPE OF WORK
CONSTRUCTION SPECIFICATIONS

PROJECT : PROPOSED FIVE-STOREY SCIENCE LABORATORY SCHOOL BUILDING
LOCATION : COLLEGE CAMPUS, PONCE ST., DON MARIANO MARCOS, BAYOMBONG, NUEVA VIZCAYA

I. GENERAL CONDITIONS:

A. All material to be used in the construction shall be of good quality and suitable for which they are intended, and shall conform to trade and manufacturer's standards. Materials shall be the best of their respective kinds.

B. For floor arrangements, general finish and dimensions, reference must be made on the drawings. However, should there be any discrepancy between the scaled measurements and the drawings, or between the wordings of this specifications and the letterings on the drawings, the figures shall in all cases take precedence over the other. The drawings shall not be scaled for construction purposes.

C. Should there be an apparent error that is neither explained by reference to the drawings nor to these specifications, the Engineer shall be informed of such error for appropriate corrections before proceeding with the work.

D. The Construction works in-charge must see to it that all works shall be performed in a thorough manner by competent workmen and in strict conformity with all the stipulations set forth in these technical specifications.

E. Water shall be free from oil, acids, alkali, organic matter and other deleterious. It shall be reasonably clear and clean.

F. Reinforcing steel bars shall conform to the Philippine National Standard specifications for steel bars for concrete reinforcement (PNS 49: 1991) and shall be free from rust, dirt and other coatings that will reduce their bond.

G. Unless otherwise specified by the Architect/Engineer, all reinforced concrete, footings, columns, and beams shall have a volumetric mixture of 1:2:3 with a minimum compressive strength, f'c, of 28 Mpa in 28 days. Others not specified shall have a volumetric mixture of 1:2:4 for a minimum compressive strength, f'c, of 17.00 Mpa in 28 days.

H. In case test for concrete becomes necessary for strength verification, it shall be done in accordance with the Philippine National Standards. Not less than three (3) cylindrical concrete specimens shall be sampled and taken for every 10.00 cubic meters of concrete poured or in quantities as may be required by the Architect/Engineer.

I. Unless otherwise specified on plans, all reinforcing steel bars shall be deformed, with standard sizes and minimum yield strength fy, of 233 Mpa (Grade 30) for footings, beams, and slabs, lateral ties, stirrups, stairs. All steel crossings shall be properly secured with #16 common wire. Rebar splicing shall be strictly of approved lap lengths and locations for structural integrity. In case welding works is required, E70 welding electrodes shall be used.

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J. Unless otherwise specified on plans, all reinforcing steel bar end hooks shall be of standard 135° bend. All reinforcing bars shall be bend cold and shall not be straightened or re-bent in a manner that will injure the materials. Bars with kinks or with cast-iron type composition and/or characteristic shall not be used. Heating of reinforcement shall not be allowed.

K. The minimum concrete covering on steel reinforcements shall be 75mm for column-footings, footing-tie-beams and wall footings, 40mm for tied columns, & 40mm for beams

L. Concrete shall only be placed after rebars have been inspected and approved by the Engineer or his authorized representative.

M. Forms shall be stiff, true to member dimensions, well braced and secured against warping or displacement, sufficiently held tight together to prevent leaks, and strong to carry imposed construction loads. It shall be cleaned and repaired before usage.

N. Concrete shall be mixed on site and only in quantities as for immediate use. Concrete shall be mixed in a batch mixer of approved type. Mixing shall continue until the materials are thoroughly mixed and the batch assumes a uniform color and a dense smooth appearance. Each batch shall be mixed not less than 1 ½ minutes after all the materials are in the mixer and must be completely discharge before the mixer is recharged. Concrete which has attained initial setting before pouring shall be discarded. No retempering shall be allowed. No hand mixing shall be allowed except in an emergency such as mixer breakdown during concrete operations and this shall be stopped as soon as the pouring is completed at the construction joint designated by the Engineer.

O. Placing of concrete shall be such as to prevent segregation of aggregates and carried continuously from point to point of extreme ends but whenever unavoidable may be stopped as near as possible at midspan of beams and suspended slabs and mid-column height for structural considerations. Fresh concrete shall be transferred from the mixer as rapidly as practicable by any method that will permit placing of concrete in the forms before initial setting occurs. In depositing fresh concrete, the maximum free drop shall be 1.20m. At least two (2) hours shall be allowed after concrete is placed in a column form before concrete for the floor system supported by the column form before concrete for the floor system supported by the column is deposited. Concrete shall be worked around the reinforcements and into all corners and be thoroughly compacted with suitable tools and equipment. To insure proper consistency in concrete mixture.

P. All laitance and other unsound materials shall be removed before additional concrete is placed against hardened concrete. Shear keys shall be provided for beam, girder and suspended slab joints.

Q. Foundation excavations shall be free from water during concreting, hence the use of water pump whenever necessary.

R. Curing shall begin when concrete has attained its initial set. Concrete surfaces shall be protected from loss of moisture for a period of not less than seven (7) days by covering with craft paper or other suitable materials and methods that will keep concrete sufficiently wet during curing period.

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S. Concrete hollow blocks for walls and partitions shall be at least of the mix 1:7. All units shall be laid with 1:3 mortar and with a minimum reinforcement of 10mm∅ rebars spaced at 600mm O.C. both ways and secured at intersections with #16 common wire. All cells shall be filled with concrete of 1:2:4 mixture. Unless shown on drawings, door and window openings shall be provided with reinforced concrete blocks adjacent to the jambs and headers with two (2) 12mm∅ rebars.

II. FORMS:

Forms shall be checked for plumpness and correct alignment. Adequate camber for beams shall be provided.

Forms shall not be removed until the concrete has set and hardened sufficiently to support its load under normal conditions.

3/8" thick 3/8" X 4' X 8' Phenolic Board shall be used as forms on 50mm x 50mm frame brace forms adequately to prevent bursting and sagging. Apply used grease oil to prevent forms from seepage of water and to facilitate easy removal or stripping of forms.

III. MASONRY:

1. Masonry blocks shall be machine made, sound and free from defects that will impair its strength.
2. Mortar binder shall be 1 part cement to 3 parts sand. Mortar core filler shall be 1 part cement to 3 parts sand and 6 parts gravel.
3. Portland cement shall be used for all masonry binder, core filler and plaster.
4. Masonry reinforcement shall have a minimum diameter of 10mm deformed and adequately tied with #16 G.I. tie wire.
5. All masonry units shall be laid plumb true to line and with level accurately spaced courses.
6. Mortar joints shall be 12.5mm thick. Cells containing reinforcements shall be solidly filled with grouts in lifts not to exceed 2.44m and pours shall stop 37.5mm below the top of a coarse to form a-key at poured joints.

IV. ROOFING/ROOF FRAMING:

A. Roof Framing:
Roof framing steel components shall be angle bars, C-purlins, plain round bars, flat bars and other steel accessories shown in plan and bill of materials. Sizes and dimensions are as shown in plan and working drawings.

B. Roofing Materials:
0.60mm thick pre-painted long span rib-type steel sheet roof with 0.60mm thick pre-painted stainless gutter and 0.60mm pre-painted bended plain sheet flashings.

V. PLUMBING AND WATERLINE:

All plumbing works for this project shall be in accordance with the approved plans and under the supervision and control of a licensed Sanitary Engineer or Master Plumber.

The plumbing installation shall conform with the provisions of the National Plumbing Code and the rules and regulations enforced in the locality.

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1. Sanitary pipes and fittings shall be done using MOLDEX SANIMOLD uPVC. For the in-house water supply installation, BELDEN pipes and fittings shall be used.

2. Water closet and lavatory fixtures to be installed shall be HCG.
3. All downspouts from the roof gutters shall end in concrete catch basins to which6" Ø reinforced concrete drainage pipes shall be connected leading to the public drainage system.

VI. ELECTRICAL WORKS:

All works indicated herein shall be done in accordance with the approved plans and under the direct supervision and control of a licensed Professional Electrical Engineer or Master Electrician.

All Electrical works and materials shall conform to the provisions of the latest edition of the Philippine or National Electric Code.

1. The electrical wiring shall be PHILFLEX and be installed thru Polyethylene electrical conduit fitting and appurtenances that conform with ISO dimensions. The minimum size to be used shall be 2.0 mm2 THHN/THWN-2 and the biggest shall be 250 mm2 THHN/THWN-2.

2. All convenience outlets, switches and plates shall be National brand.

3. The type of electrical services to be supplied to the building shall be 220v, AC, single phase.

4. There shall be only one service drop from the nearest Nuvelco pole to the proposed building.

5. The spare circuit shall be provided with an empty PVC pipe, size 20mm Ø. The grounding wires shall be identified and all wires shall be color-coded for easy identification.

6. The panel board shall be provided with a circuit directory.

VII. DOORS & WINDOWS:

Doors and Windows shall conform to the sizes, designs, and kind of materials shown in the details of Schedule of Doors and Windows.

A. Doors:

1. Classrooms: Wooden panel door in varnish finish with ¼" thk clear glass insert with 2" X 6" door jamb.
2. Comfort Rooms: Flush door in duco finish with ¼" thk clear glass insert with 2" X 4" wooden door jambs.
3. Fire Exit: Fabricated steel door with steel door jamb integrated with panic device.

B. Windows:

All windows of the building shall be 6mm thick tempered reflective gray glass on analok frame with complete accessories.

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VIII. FINISHES

A. Floor and Wall Tiles:

The materials to be used as floor finishes for the building are stated at the Architectural Plans on the Schedule of Floor Finishes.

1. The floor tiles to be used for the indoor rooms shall be 60cm X 60cm Glazed Ceramic Tile Finish and for the outdoor areas shall be 60cm X 60cm Unglazed Ceramic Tile Finish.

2. The comfort room floor tiles shall be 60cm X 60cm Glazed Ceramic Tile Finish and for the wall tiles 30cm X 60cm Glazed Ceramic Tile finish with 1.80m height.

3. The floor tiles for the staircase shall be 30cm X 60cm Unglazed Ceramic Floor Tile finish with stair nosing tiles on steps.

4. The floor finish for the ramp will be 60cm X 60cm Unglazed Ceramic Floor Tile finish with stainless flat bar insert on grooves.

B. Ceiling:

1. The ceiling for Rooms 1, 2, 3, 4 & 5 shall be 60cm X 60cm Acoustic Ceiling Board to be installed in aluminum tee runner.

2. The lobby and corridors ceiling to be used shall be 12mm thick Gypsum board and to be installed in metal furring system.

3. For the rest of the rooms, the ceiling to be used shall be 12mm thick Gypsum Board to be installed in metal furring system.

4. The roof eaves ceiling shall be 6mm thick 4' X 8' Cassia pro textured Ficem board to be installed in metal furring system. 5. Ceiling Vents will be provided on some parts of the exterior ceiling.

C. Railings:

1. Stairs and corridor railings: 75mm X 40mm wooden handrail in 50mm X 50mm steel angle bar post welded together with 3/8" thick horizontal flat bar balusters supported by 12mm Ø square bar in acrylic automotive paint finish.

2. Ramp: 50mm Ø stainless steel handrail and posts to be welded on ramp guides.

D. Wall Decoration:

The material to be used for the wall decoration accent at the façade of the building shall be 54 X 54 X 2900mm wood grain finish outdoor tubular Wood Plastic Composite (WPC).

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IX. PAINTING:

All painting works for this project shall be done with the use of Boysen Paint products manufactured by Pacific Paint (BOYSEN) Philippines, Inc. Painting shall be done in a workmanship manner. All finished surfaces shall be uniform as to sheer, color and texture. All parts to be painted shall be left clean and true to detail. All surfaces to be painted shall be clean and smoothly sanded to produce maximum quality of finish. Apply paints to its minimum of two coats and to maximum of three coats to all surfaces to be painted to produce maximum quality of finish. All colors, hues and shades must be approved by the Owner and the Contractor. All paint and paint materials shall be delivered to the building site in unbroken packages, bearing the marks of the specified brand. No adulteration of specified paints with other brands shall be allowed.

X. CLEARING OF JOBSITE:

After completion of the works, the premises shall be cleared of wastes, debris,
tools and surplus materials.

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Dr. Alejandro R. Roces Building





ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES)
PROVINCE OF NUEVA VIZCAYA) S.S.

BEFORE ME, this 25th day of September 2024 in Bayombong, Nueva Vizcaya, personally appeared the parties known to me to be the same persons who executed the foregoing instrument, and they acknowledged to me that the same is their free act and deed and that of the offices, which they respectively represent.

This instrument including its annexes, and the page on which this acknowledgement is written, has been signed by the Parties and their witnesses and sealed with my notarial seal.

IN WITNESS WHEREOF, I have hereunto affixed my signature on the day, year and place above written.

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Book No CCCXIV
Series of 2024

EPIFANIO DG. GALIMA, III
Notarial Commission No. 25-23
Notary Public Until 12-31-2025
SMU, Bayombong, Nueva Vizcaya
Roll of Attorney's No. 57855
IBP Lifetime, 1086895, 1/4/18;
PTR No. 2800834, 12/01/23

Page 27 of the SMU Strategic Plan 2021-2026

Green Campus Project: Under the **Clean, Healthy, Safe & Friendly (CHSF) Program**, the university explicitly incorporates greening and biodiversity into campus spaces through the "Planting of ornamental trees in campus and SMU residential lots / landscaping". The target KPI sets a goal of **100 ornamental trees planted on campus** by Year 5.

Strategic Outcomes	Strategic Programs/ Projects	Area	Units Responsible	Y1	Y2	Y3	Y4	Y5	KPI	Budget
2.2.1. Conducive learning environment is ensured.	**CHSF Program** 1) Green Campus Project (Planting of ornamental trees in campus / landscaping)	PFRM	SPCO PPPDMO CNS		20	20	20	20	2.2.1.1. At the end of year 5, 100 ornamental trees in campus should have been planted.	
	2) Environmental Education Project	RCD	LMCDAC NSTP CNS SPCO	2	2	2	2	2	2.2.1.2. At the end of year 5, 90% of students and employees participated in at least 10 environmental education activities.	
	Safety and Pollution Control Program	Admin	SPCO, VPA, PPPDMO		0% deficiency	0% deficiency	0% deficiency	0% deficiency	2.1.1.38. At the end of year 5, 0% deficiency in safety and pollution control should have been recorded by accrediting agencies.	

Page 10 of the SMU Strategic Plan 2021-2026

Strategic Thrust 3: Infrastructure, Organization, Student and Staff Development

Mandates that campus physical plant upgrades and infrastructure developments must build a conducive environment by integrating a **green campus** initiative, revitalizing environmental facilities, and enhancing overall school grounds.

V. **Strategic Thrusts**

Strategic thrusts are powerful initiatives anchored on SMU's vision and are formulated to guide action plans. The University President, Dr. John Octavious S. Palina, leads the university through these thrusts that encompass the core spirit of a Marian educational institution.

1. **MISSION AND IDENTITY AS DEFINING ATTRIBUTES OF MARIANS**

   This thrust aims to build the Marian identity as a missionary that transforms adopted communities through the following endeavours:

   a. Christian formation programs, pastoral ministry (classroom, work areas and beyond)
   b. Research-based extension projects in adopted communities (plan-implement-monitor-terminate-evaluate; 5-year project)
   c. Cultivate a spirit of volunteerism (unit-based flagship programs)
   d. Support for CICM advocacies (JPIC, indigenous peoples, environmental protection and Management, and disaster risk reduction and management)
   e. Scholarship grants
   f. Stronger and sustained alumni support and involvement

2. **ACADEMIC EXCELLENCE AND PRESTIGE**

   This initiative highlights SMU's goal of becoming a premiere university in the country that consciously and continually work towards exceptionality in scholastic activities through the following:

   a. Achieve high passing rates across board & bar programs
   b. Produce topnotchers
   c. Add PAASCU-accredited programs
   d. Regain and maintain autonomous status
   e. Maintain COE in Teacher Education
   f. Transform CODs in Civil Engineering and IT Education into COEs
   g. Add Centers of Development
   h. Offer new course programs
   i. Offer full online course packages
   j. Offer continuing education programs

3. **INFRASTRUCTURE, ORGANIZATION, STUDENT AND STAFF DEVELOPMENT**

Page 6 (Internal Environment Analysis: Physical Resources)

Formally assesses physical assets and explicitly states that the university's **"infrastructures and buildings are also considerate to the environment"** while evaluating physical plant maintenance and development plans.

Human Resources

In order to strengthen its teaching force, the Administration sent faculty members both in the undergraduate and graduate programs to local, national and international seminars, conferences, tours, studies, and similar activities. The MIS staff is very competent; they update themselves through online and attending relevant webinars and forums in their field of expertise. As a result, Saint Mary's University has gained positional advantages over its competitors in the province and the region. The positional advantages include more opportunities for learning computer proficiencies; better learning environment for acquiring knowledge, skills and proper attitudes; greater resources for innovation; and better opportunities for co-curricular and extra-curricular activities.

A good number of the faculty members are graduate degree holders. One hundred thirty-one are with master's degree while 44 are with doctorate degree. Some of the faculty members are pursuing their master's degree, and some of those with MA are pursuing doctorate degrees. On the average, turnover of the faculty due to resignation has been relatively low. There is a continuing faculty professional enhancement trainings within and outside the institution such as of seminar-workshops, teaching demonstrations, etc. Office personnel also avail these opportunities for continuing professional enrichment.

There is more to be done regarding enhancement of skills of faculty and staff. Office personnel are not included in the subsidy for further studies. In addition, there is insufficiency on trainings and seminars for office personnel. Due to this, some employees in some departments lack or have limited knowledge on spreadsheets, thus accuracy of transactions and speed of work sometimes suffer. Interruption and delay of service occur especially during the 50% reporting scheme; for some tasks, there are no alternate staff who can act as substitute. Correspondingly, some employees have outdated skills and are resistant to retraining, slow, and are not able to cope with the demands of online services. Moreover, skilled and trained personnel and are leaving because of more compelling benefits and compensations offered by other institutions.

Physical Resources

The CICT infrastructure of the University is above the standards of the current CICT standards the government impose. The staff of the CICT checks on the compatibility of both software and hardware applications. The University is conducive to work and learning; there are available study areas/kiosks around the campus. The infrastructures and buildings are also considerate to the environment as well as PWD friendly. The safety and protection of students and employees are also ensured through the installation of CCTVs in strategic areas for security monitoring. Security guards are also on 24/7 duty. Along with these are the fire safety and structural integrity of the buildings which are constantly being monitored by internal and external agencies/units.

Infrastructures and facilities management and maintenance plans are not extensively monitored and implemented. Cramped spaces for office and production are inefficient for work and movement. This may result to unproductive employees and disruption of work. Properly managed facilities are a must for a variety of reasons, ranging from safety to employee motivation. Unstable internet connections and unavailability of Wi-Fi connections in some offices affects employees in performing their tasks particularly for online services. Aside from these are the aging and the obsolete IT infrastructures; hardware, software, and operating systems of office computers are not up to date. Most of the computers are prone to malware and infection because of outdated antivirus applications.

Page 4 (Environmental Analysis: Ecological SWOT)

Examine the ecological context of the university's location in Nueva Vizcaya, highlighting strategic opportunities for **developing idle landholdings managed by SMU** while embedding **environmental education, protection, and sustainable practices** into campus land use

Economic

Former President Rodrigo Duterte signed the Republic Act 10931 or the Universal Access to Quality Tertiary Education Act in 2017. As provided by law, all undergraduate students of state universities and colleges and local universities and colleges are entitled to free tuition fees. Aside from these, there are also available scholarships and subsidies offered by other government agencies. With parental unemployment having hit a record peak due to the pandemic, parents prefer cheaper options and enrol their children to state universities, colleges and schools. Also, with the free Modular Distance Learning program of the SUCs and DepEd, parents and learners do not need to buy gadgets or devices that is out of their financial capability. There is a disparity in teachers' salaries between private educational institutions and public schools. The higher salaries in public schools encourage private school employees to transfer to public schools. All these are threats to the economic sustainability of private educational institutions.

Nonetheless, the availability of scholarships, student loans, and other form of financial aids from SMU and government agencies allows students to focus on their studies without having to worry about their finances. Because students are more engaged in learning, educational institutions benefit from higher retention rates and higher rankings during assessment periods.

Technological

Most universities have resorted to online learning during school lockdowns as a means of mitigating for lost time in school. However, this sudden shift has resulted in problems especially to those who do not have the means to an online learning-ready device. With the onslaught of the COVID-19 pandemic, both teachers and students have found it difficult to maintain academic engagement due to a lack of access to advanced technology and internet connectivity. Most households' access to technology varies, and the availability of fast internet or gadgets is related to income. As a result, programs that can quickly target those in greatest need are critical. Technological equipment, software and tools are also key factors in providing distance learning, however, these tools necessary for remote learning are expensive. As most classes are conducted through video conferences, most platforms need an updated system to work efficiently.

Opportunities

In response to the call of the Commission on Higher Education on Higher Education in ensuring the accessibility of education in the midst of the COVID-19 pandemic, SMU has upgraded its technological resources and acquire new software (free and proprietary) and hardware to keep abreast with the new trends in offering online courses. Deliveries of digitized credentials are upgraded through the use of Credential Management System (CMS).

The teaching and learning process assumes a different shape in times of crisis. When disasters and crises (man-made and natural) occur, schools and colleges need to be resilient and find new ways to continue the teaching–learning activities (Chang-Richards et al., 2013). One emerging reality as a result of the world health crisis is the migration to online learning modalities to mitigate the risk of face-to-face interaction. Universities are forced to migrate from face-to-face delivery to online modality as a result of the pandemic. Employees' familiarity with the tools and processes and higher computer literacy are also key factors in providing distance learning.

Page 9 & Page 66 (CICM Advocacies & Climate Change Programs)

Establishes institutional commitment to **environmental protection and management** as a core advocacy and links it to the **Environmental Protection Project** under the Climate Change Justice Program.

2. **Responsibly taking the lead and participating in community-building; skills (Responsible citizenship and leadership)**
    a. To provide opportunities for leading and being actively involved in building vibrant Christian communities (Community extension services);
    b. To provide occasions for initiating and taking part in promoting CICM and social advocacies (CICM and social advocacies); and
    c. To develop in the individual responsible citizenship and leadership.
3. **Relentlessly manifesting academic, personal and professional excellence**
    a. To develop and support the faculty in their pursuit of holistic growth as persons, learners and scholars in their field of specialization. (Faculty & staff development);
    b. To provide opportunities for the continuous development in all students desirable values and character traits by providing avenues for learning, relearning, and unlearning experiences aimed at facilitating and ensuring the formation of good character. (Good character formation); and
    c. To provide opportunities that enhance students' well-being.
4. **Conscientiously strengthening communion**
    a. To help managers develop their full potential and capacity to exercise responsibilities, as well as train and prepare other employees to assume higher levels of responsibility at a later stage (Executive management development);
    b. To create an environment of increased openness of communications, increased level of trust and support among organization members, and increased personal enthusiasm and satisfaction (Organizational development);
    c. To ensure a culture of transparency, accountability, self and group responsibility in planning, implementation and responsiveness through policies and procedures and other mechanisms (Good governance); and
    d. To ensure that managers assigned to lead the units can generate high levels of commitment from followers through the exercise of fair, just and equal treatment of employees and students, and a management style focused on policies that work for the good of the organization (Ethical stewardship and shepherding).
5. **Steadfastly nurturing creativity and physical prowess**
    a. To instill in the individual, faith and pride in the national culture and respect for other cultures; and
    b. To provide opportunities for the enhancement of creativity in the literary, visual, and performing arts.

road 0/3

Strategic Goals	Strategic Objectives	KRA	Strategic Objectives	Strategic Programs	Persons Responsible
				4.3.b. Marian CARES Program	Grade School, JHS, SHS, LMCDAC
				4.3.c. Project GIFTED	SOGS, LMCDAC
				4.4. Health and Wellbeing Advocacy (Child Jesus Mobile Clinic)	SHNS, LMCDAC
				4.5. Socio-Pastoral and Evangelical Program (*SILAWAM*)	STEH, LMCDAC
				4.5.a. Build/Adopt-a-chapel Project	STEH, Campus Ministry
				4.5.b. Adult Literacy Project	STEH
				4.5.c. Peace and Justice Program	STEH
				4.6. Feed My Lambs Project	Office Personnel, LMCDAC
				Community Development and Advocacy Programs	LMCDAC
				1) IP Advocacy and Development Program	LMCDAC
				2) Climate Change Justice Program 2.1. Environmental Protection Project	LMCDAC, SPCO, NSTP
				2.2. Disaster Risk Reduction Project	LMCDAC, SPCO

Project Title:	Clean-up Drive for the School-in-a-Garden Project
Date:	April 26, 2025
Time:	8:00 A.M.
Team Composition:	
Lead Organizer:	Mr. Allan S. Guiab
Project Staff/Members:	Non-Academic Personnel

Narrative

On April 26, 2025, the volunteer Non-Academic Personnel (NAP) of Saint Mary's University actively participated in a clean-up drive at the Apo Pilo area, in support of the university's **School-in-a-Garden Project**. This initiative was launched as part of the university's efforts to promote sustainability, environmental stewardship, and community engagement through hands-on gardening and green space development.

The activity began early in the morning, with NAP volunteers gathering on-site equipped with cleaning tools and a strong sense of commitment to the project. Together, they cleared the area of weeds, debris, and other waste materials to prepare the site for planting. Their collective efforts transformed the space into a more suitable and welcoming environment for gardening.

Once cleared, the area was designated for the cultivation of various vegetable crops. These vegetables will not only contribute to the beautification and greening of the campus but will also serve as a sustainable food source for small-scale community use or university events.

The project is a collaborative endeavor between the Non-Academic Personnel and the **NSTP (National Service Training Program) Office**, with NAP taking the lead in the ongoing maintenance and development of the garden. Through this partnership, the initiative aims to foster a sense of shared responsibility and ecological consciousness among university personnel while providing a practical example of sustainable living.

The clean-up and future cultivation at Apo Pilo reflect Saint Mary's University's dedication to holistic education, extending beyond academics to include active involvement in environmental and social causes. The NAP volunteers' commitment and teamwork exemplify how small, consistent actions can contribute to long-term impact.

This event marks the beginning of a continuing project that will evolve through regular care, planting, and collaborative effort, bringing the vision of a "School-in-a-Garden" closer to reality.

Documentation







Prepared by:	*Heidee L. Lamoste*
Date Submitted:	

Renewable Energy Sources in Campus

  	  	 
Roof Mounted Solar Panels – JVD Building	Roof Mounted Solar Panels – AT Building and H Building	Roof Mounted Solar Panels – Sacred Heart Center, Debuscherre Bldg and Apo Pilo Bldg



Solar panels in schools effectively reduce energy costs and promote environmental sustainability by converting sunlight into electricity. These panels supply power for essential systems like lighting, HVAC (heating, ventilation, and air conditioning), and other electrical needs, reducing reliance on traditional energy sources. Schools can significantly cut electricity bills and operate more efficiently with solar energy.

Additionally, schools can benefit from net metering programs, where excess electricity produced by the solar panels is sent back to the grid, earning credits with the utility provider. This means schools can offset energy costs when solar production exceeds demand, and they can draw from the grid during times of low solar output, like at night or on cloudy days.

Saint Mary's University Solar PV Performance

August 1, 2024 – July 31, 2025

Total RE generated



136,585.34
kWh



11
Houses Powered Annually



4,678
LED Lights Powered Annually
(10W, 8hr/day)



216,000
km Driven Annually
(approximate emissions equivalent)



7,188,702
Smart Phones Charged Annually



1,137
Ceiling Fans Powered Annually
(120W, 8hr/day)

Total CO_2 savings



87.06
tons

Equivalent to:



43
ha Forest Carbon Sequestered

* CO_2 savings calculated using the applicable electricity emissions factor; equivalency figures are estimates based on stated assumptions.

Energy Usage August 2024-July 2025 .XLSX

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Electricity Usage-Aguust 1, 2024-July 31, 2025

	College		GYM		SHS		JHS		GS		Inang Maria		CICM District House		Total	
	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount
July 25-Aug. 25	53550	**642,916.08**	5250	**87,045.08**	0	-	7710	88463.805	4620	53515.245	1430	**16,378.44**	453	**5,435.25**	65303	893,753.90
Aug 25-Sept. 25	67585	**805,462.33**	5880	**97,319.40**	0	-	6180	71402.235	6180	71,402.24	2398	**29,022.12**	456	**5,523.34**	82499	1,080,131.66
Sept. 25-Oct. 25	76790	**907,115.35**	6510	**103,098.15**	31290	**356,197.38**	13650	**167,482.25**	10920	**137,125.43**	2547	**31,294.50**	835	**10,321.68**	128892	1,712,634.74
Oct. 25-Nov. 25	52990	**654,047.21**	3360	**70,159.95**	3990	**64,761.78**	5880	**86,379.27**	5250	**75,553.18**	2405	**30,262.68**	724	**9,114.18**	68719	990,278.25
Nov. 25-Dec. 24	54040	**643,116.47**	8400	**89,955.97**	7350	**97,261.24**	8820	**112,232.96**	6300	**83,291.58**	2308	**28,208.92**	758	**9,268.21**	79156	1,063,335.35
Dec. 24-Jan. 25	26460	**317,766.52**	840	**19,503.75**	2730	**41,910.64**	4830	**61,726.80**	2940	**38,828.28**	646	**7,256.91**	682	**7,661.01**	34298	494,653.91
Jan. 25-Feb 24	50610	**570,179.45**	6510	**95,472.31**	5250	**70,144.47**	9870	**117,200.79**	5460	**70,790.14**	1750	**20,174.59**	883	**10,182.30**	70463	954,144.05
Feb. 24-Mar. 25	60130	**667,931.55**	4620	**82,712.72**	8190	**100,554.85**	11130	**132,095.78**	6510	**83,719.08**	1773	**20,208.81**	587	**6,694.43**	81810	1,093,917.22
March 25-Apr 25	61180	**735,659.18**	8610	**127,455.59**	1680	**37,520.85**	3360	**46,069.08**	2940	**38,099.36**	1899	**22,987.24**	243	**2,946.38**	76552	1,010,737.68
April 25-May 25	67060	**685,160.57**	6720	**102,302.07**	1260	**16,329.45**	3150	**33,344.26**	2520	**28,804.92**	1685	**17,300.17**	530	**5,445.44**	79775	888,686.88
May 25-June 24	63245	**648,782.47**	12180	**148,012.86**	1680	**35,044.28**	6510	**81,496.24**	5670	**68,761.58**	2224	**23,168.52**	215	**2,244.82**	85214	1,007,510.77
June 24-July 25	63070	**628,429.62**	5460	**80,466.33**	10500	**114,985.86**	15330	**158,717.56**	10710	**113,863.54**	1075	**11,123.49**	425	**4,401.04**	91240	1,111,987.44
Total	696710	**7,906,566.80**	74340	**1,103,504.18**	73920	**934,710.80**	96420	**1,156,611.03**	70020	**863,754.57**	22140	**257,386.39**	6791	**79,238.08**	943921	**12,301,771.85**

Total Low Carbon Energy Used .XLSX

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E19

Nuvelco Energy Used

	College		GYM		SHS		CICM		Total	
	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount	kWh	Amount
July 25-Aug. 25	53550	**642,916.08**	5250	**87,045.08**	0	-	453	**5,435.25**	59253	735,396.41
Aug 25-Sept. 25	67585	**805,462.33**	5880	**97,319.40**	0	-	456	**5,523.34**	73921	908,305.07
Sept. 25-Oct. 25	76790	**907,115.35**	6510	**103,098.15**	31290	**356,197.38**	835	**10,321.68**	115425	1,376,732.56
Oct. 25-Nov. 25	52990	**654,047.21**	3360	**70,159.95**	3990	**64,761.78**	724	**9,114.18**	61064	798,083.12
Nov. 25-Dec. 24	54040	**643,116.47**	8400	**89,955.97**	7350	**97,261.24**	758	**9,268.21**	70548	839,601.89
Dec. 24-Jan. 25	26460	**317,766.52**	840	**19,503.75**	2730	**41,910.64**	682	**7,661.01**	30712	386,841.92
Jan. 25-Feb 24	50610	**570,179.45**	6510	**95,472.31**	5250	**70,144.47**	883	**10,182.30**	63253	745,978.53
Feb. 24-Mar. 25	60130	**667,931.55**	4620	**82,712.72**	8190	**100,554.85**	587	**6,694.43**	73527	857,893.55
March 25-Apr 25	61180	**735,659.18**	8610	**127,455.59**	1680	**37,520.85**	243	**2,946.38**	71713	903,582.00
April 25-May 25	67060	**685,160.57**	6720	**102,302.07**	1260	**16,329.45**	530	**5,445.44**	75570	809,237.53
May 25-June 24	63245	**648,782.47**	12180	**148,012.86**	1680	**35,044.28**	215	**2,244.82**	77320	834,084.43
June 24-July 25	63070	**628,429.62**	5460	**80,466.33**	10500	**114,985.86**	425	**4,401.04**	79455	828,282.85
Total	696710	**7,906,566.80**	74340	**1,103,504.18**	73920	**934,710.80**	6791	**79,238.08**	851761	10,024,019.86

Total Low Carbon Energy Used .XLSX

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K16

WEnergy Solar Panel Generated Energy from August 2024-July 2025

	Apo Pilo 1	Sacred Heart	JVD Upper	JVD Lower	AT	Hantson1	Total	
	kWh	kWh	kWh	kWh	kWh	kWh	kWh	
August	2,918.06	3,276.94	3,291.56	4,160.48	1,946.36	2,561.00	18,154.40	
September	1,845.94	2,099.06	1,909.44	2,711.80	1,172.13	1,716.64	11,455.01	
October	2,158.26	2,387.96	2,026.50	3,111.84	1,200.22	1,960.84	12,845.62	
November	1,942.70	2,118.88	1,642.12	2,845.16	1,028.45	1,767.92	11,345.23	
December	1,187.48	1,309.52	1,111.18	1,776.32	469.16	849.62	6,703.28	
January	1,479.94	1,569.32	1,301.72	2,198.52	785.79	1,123.56	8,458.85	
February	1,384.88	1,477.48	1,259.60	2,112.44	1,199.91	7.68	7,441.99	
March	2,145.58	2,283.40	1,984.28	3,227.00	1,736.69	13.48	11,390.43	
April	2,425.72	2,584.28	2,402.84	3,619.68	2,048.90	17.78	13,099.20	
May	2,354.78	2,565.00	2,571.56	3,500.08	2,111.97	4.96	13,108.35	
June	2,121.34	2,396.16	2,390.26	3,198.32	1,844.08	1.60	11,951.76	
July	1,897.54	2,129.50	2,053.62	2,852.44	1,694.22	3.90	10,631.22	
Total	23,862.22	26,197.50	23,944.68	35,314.08	17,237.88	10,028.98	136,585.34	491.71 GJ

O. DIRECTOR, PHYSICAL PLANT AND PROPERTIES DEVELOPMENT AND MAINTENANCE OFFICE

1. REFERENCE

a. **Appointment**: The Director of the Physical Plant and

Properties Development and Maintenance Office (PPPDMO) is appointed by the University President in consultation with the Advisory Board, subject to the confirmation of the Board of Trustees.

b. **Qualifications**: The Director of the Physical Plant and Properties Development and Maintenance Office (PPPDMO) must:
   i. be a registered Civil or Electrical Engineer or Architect. But in case there is a dearth of candidates, a person with training or experience in safety, pollution control, or Hazard Identification, Risk Assessment, and Control measures (HIRAC) may be considered as head with the support of a technical consultant.
   ii. have at least two years industry experience; and
   iii. be of good moral character.

c. **Term of Office**: The term of office is one year for the initial appointment, renewable for terms of two years each, provided that such appointment shall not be beyond 60 years old, unless the University President extends it on a yearly basis, but not beyond the mandatory retirement age of 65.

2. **FUNCTIONS AND RESPONSIBILITIES:** The Director of Physical Plant and Properties Development and Maintenance Office is directly responsible to the University President and is mandated to perform the following:
   a. is responsible for the supervision of housekeeping and upkeep of physical plant and facilities, including the regular inspection, planning, repair, maintenance and remodeling if needed, of property, plant and equipment;
   b. develops and implements the preventive maintenance program for all University properties, plants and equipment;
   c. is responsible for regularly inspecting, identifying

and correcting defects in all buildings and structures;
   d. takes charge of planning, developing and monitoring of the real properties of the University;
   e. supervises and evaluates the performance of contractors; conducts periodic inspections, monitors and certifies that contracted jobs are performed in accordance with the contract specifications. He/She may be held accountable for his/her certification if the project is found to be wanting of the expected output;
   f. evaluates the need for training programs and arranges training schedules or conducts training to upgrade PPPDMO workers' skills;
   g. acts on approved requests for major and minor repairs, renovations, improvements in offices, buildings or properties of the University;
   h. seeks professional opinions of other experts regarding physical plant concerns when needed;
   i. supervises, assists and coordinates preparation of facilities needed for University activities;
   j. submits the required monthly/quarterly reports on accomplished projects to the University President;
   k. keeps a copy of campus layouts, lot plans, building plans, electrical plans, certificate of occupancy, updated fire and safety maintenance reports and other related documents of all University properties;
   l. oversees the General Services Supervisor;
   m. obtains Construction Occupational Safety and Health (COSH 2) or BOSH 2 certification; and
   n. Performs other related tasks that may be assigned by the University President.

SMU unit(s) or office(s) that coordinate sustainability on campus with focus on SDG 13

At Saint Mary's University (SMU), the coordination of sustainability initiatives is carried out through an integrated network of institutional offices that work collaboratively under the university's mission of "responsibly taking the lead and participating in community building". The Community Engagement and Indigenous Peoples' Studies Center (CEIPSC)—formerly the Lingkod Maria Community Development and Advocacy Center—serves as the lead office for sustainability engagement in communities. Guided by its Community Engagement Framework, the Center promotes inclusive, participatory, and sustainable development through environmental education, capacity-building programs, and partnerships with local communities, including Indigenous Peoples' groups. This framework ensures that all outreach and extension initiatives align with the UN Sustainable Development Goals (SDGs) by fostering ecological awareness, livelihood sustainability, and community empowerment.

Other contributing offices and their roles in sustainability coordination include:

- **Office of the Vice President for Administration:** Provides leadership in campus sustainability operations and chairs the Campus Safety and Disaster Preparedness Committee, which oversees risk assessments, safety drills, and disaster risk reduction initiatives. Through responsible resource management, occupational safety, and continuity planning, the VPA ensures institution-wide sustainability practices are aligned with SDG 3, SDG 11, and SDG 13.
- **Center for Natural Sciences (CNS):** Coordinates scientific research and manages academic laboratories in biology, chemistry, and medical laboratory science. It supports sustainability through SDG-related research, environmental monitoring, and documentation of campus initiatives on biodiversity conservation, waste reduction, and sustainable resource management.
- **Safety and Pollution Control Office (SPCO)**: Ensures a safe, healthy, and sustainable campus environment by overseeing waste management and pollution control. The office also champions the Clean, Health, Safe, and Friendly (CHSF) Environment Program, which is the university's lead program for a sustainable environment. It contributes to SDG 3, 12 and SDG 13 by maintaining compliance with safety and environmental regulations.
- **Physical Plant and Properties Development and Maintenance Office** (PPPDMO): Implements green infrastructure strategies, including energy-efficient systems, water conservation, waste segregation, and landscaping that promotes biodiversity. Its efforts directly support SDGs 7, 9, and 13.
- **Internationalization Office (IO)**: Expands SMU's global sustainability footprint by developing academic partnerships, exchange programs, and joint research projects centered on the SDGs. Since August 2025, this unit has been responsible for consolidating SDG initiatives. It advances SDG 17 through collaboration with international institutions and networks that promote sustainable development.
- **Publications and Information Office (PIO):** Communicates SMU's sustainability initiatives and SDG achievements through digital platforms, newsletters, and institutional reports. It enhances transparency and awareness of sustainability practices among students, staff, and the public, contributing to SDGs 4, 12 and 13.
- **Institutional Development and Quality Assurance Office (IDQAO):** Integrates sustainability into institutional policies, academic outcomes, and quality assurance processes. It ensures that sustainability is embedded in performance indicators, accreditation criteria, and the strategic plan, contributing to continuous improvement aligned with SDGs 4, 11, 13, and 16.
- **Academic units** advance the SDGs through instruction, research, and community engagement, while **non-academic units** support them through sustainable operations and administrative systems. Each unit has a community engagement coordinator who assists in implementing and monitoring sustainability initiatives aligned with SDGs 3, 11, and 13.

Total Carbon Footprint (CO_2 emission in the last 12 months, in metric tons)

CO_2 (electricity)

$$= \frac{electricity\ usage\ per\ year\ (kWh)}{1000} \times 0{,}84$$

$$= \frac{834540\ kWh}{1000} \times 0{,}84$$

= 701.0136 metric tons

CO_2 (cars)

$$= \frac{\text{number of cars entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0{,}02$$

$$= \frac{271 \times 2 \times 5 \times 240}{100} \times 0{,}02$$

= 130.08 metric tons

CO_2 (motorcycle)

$$= \frac{\text{number of motorcycle entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0{,}01$$

$$= \frac{254 \times 2 \times 5 \times 240}{100} \times 0{,}01$$

= 60.96 metric tons

CO_2 (total)

= 701.0136 + 130.08 + 60.96

= 892.0536 metric tons

Carbon footprint = 892.0536 metric tons

Saint Mary's University, Philippines Total Carbon Footprint

The total of **892.0536 metric tons of CO_2 emissions** represents the combined carbon footprint produced by electricity and all cars and motorcycles entering the premises of Saint Mary's University during the analyzed period. This figure highlights the significant contribution of campus transportation to the university's overall greenhouse gas emissions.

SMU Shuttle Services



NO VEHICLE DAY



Circular on No Vehicle Day

SAINT MARY'S UNIVERSITY
BAYOMBONG, NUEVA VIZCAYA, PHILIPPINES
OFFICE OF THE UNIVERSITY PRESIDENT

Document Code	EOMS-OUP-FO-001, Rev. 00
Effectivity Date	2024/12/08
Page/s	Page 1 of 1

22 January 2025

TO: **ALL STUDENTS, EMPLOYEES, AND VISITORS (ALL LEVELS)**

RE: **INSTITUTIONALIZATION OF THE NO VEHICLE/MOTORCYCLE DAY**

Saint Mary's University, through the years, remains committed to protecting the environment via the following programs and actions taken:

1. The **Clean, Healthy, Safe, and Friendly Environment (CHSF) Program**, institutionalized in 1998;
2. Active involvement in the **Synergy Program** since 2016, a multisectoral partnership funded by West Flanders Province of Belgium for climate change, entrepreneurship, and sustainable agriculture projects;
3. SMU's enrollment last October 17, 2024 in the ***Laudato Si*** **Action Platform**, an initiative of the Vatican Dicastery that equips the church to achieve real and lasting solutions to the ecological crisis; and
4. SMU's participation in the **UI GreenMetric** in 2024; a world university ranking focusing on Green Campus efforts and Sustainability Programs of a university. The university was ranked first in the region, 10th in the Philippines, and 470th in the world's most sustainable universities.

In addition to these initiatives, the University shall institutionalize the:

NO VEHICLE/MOTORCYCLE DAY effective February 05, 2025.

In its initial implementation, management sets the **FIRST WEDNESDAY of every month**** as **NO VEHICLE/MOTORCYCLE DAY**. This means that carbon-emitting vehicles and motorcycles (or those that use fossil fuels such as gasoline and diesel) shall not be permitted to enter the university campuses (i.e., Elementary, Junior High School, and the main campus, including the Ladies' and Men's dormitories). Walking or using bicycles is strongly encouraged.

The following vehicles, however, are **NOT INCLUDED** in this directive:

- Emergency Vehicles like ambulances, fire trucks, & similar vehicles for emergencies
- Solar-powered and electric vehicles
- University vehicles used for Official Business (OB) only
- Vehicles carrying Persons with Disabilities (PWDs)

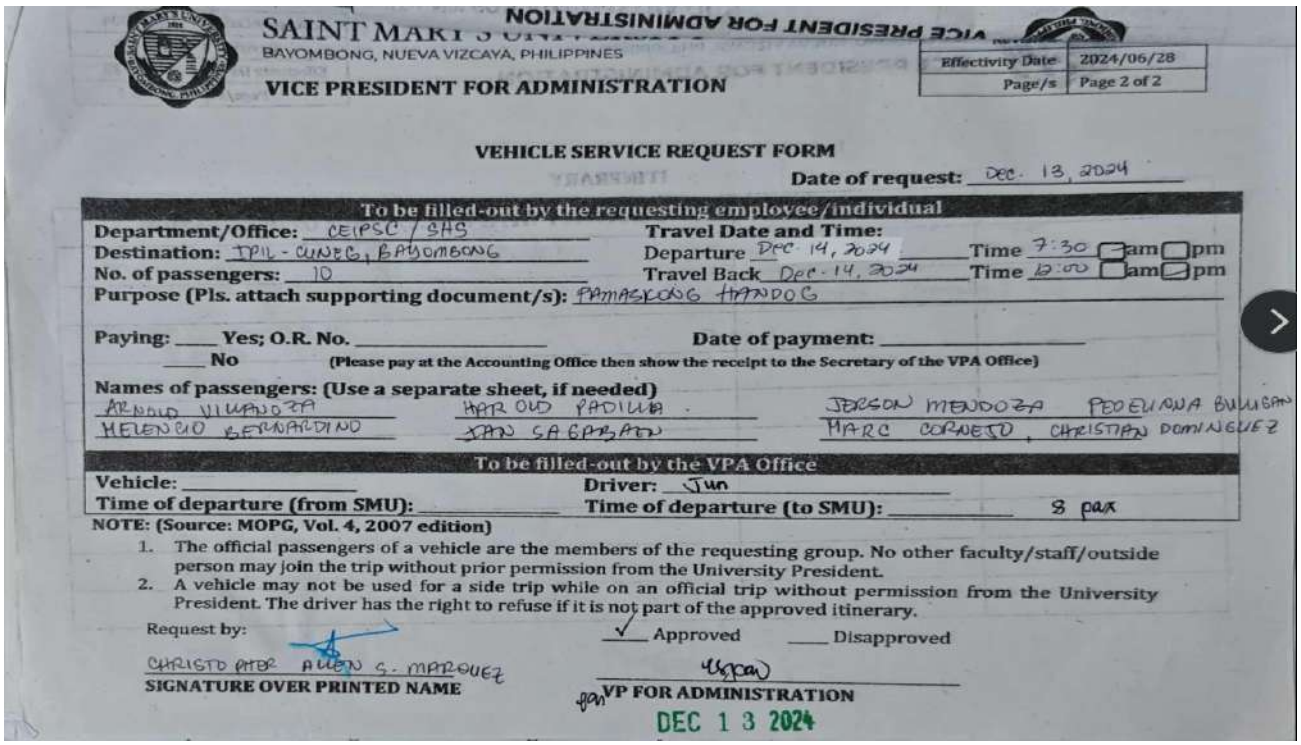
The program's implementation shall be closely monitored in the spirit of continual improvement, and refinements shall be integrated as needed. Let us continue to work together for a cleaner and greener environment!

DR. JOHN OCTAVIOUS S. PALINA
University President

Note: Management may* ***change *the first Wednesday of the month (No Motorcycle/Vehicle Day) to give way to institutional events or other similar activities. The replacement day will be announced before the event or activity.*

A205, Second Floor, Fr. Godfrey Lambrecht Building
SMU Main Campus, Ponce Street,
Bayombong, 3700 Nueva Vizcaya, Philippines
www.smu.edu.ph / secretariat@smu.edu.ph
(078) 321-2221 loc. 101 / Fax Nos.: (078) 321-2117 or 805-3649

Sample accomplished car request forms



SAINT MARY'S UNIVERSITY
BAYOMBONG, NUEVA VIZCAYA, PHILIPPINES
VICE PRESIDENT FOR ADMINISTRATION

Effectivity Date	2024/06/28
Page/s	Page 2 of 2

VEHICLE SERVICE REQUEST FORM

Date of request: Dec. 13, 2024

To be filled-out by the requesting employee/individual

Department/Office: CEIPSC / SHS
Destination: IPIL - CUNEG, BAYOMBONG
No. of passengers: 10
Purpose (Pls. attach supporting document/s): PAMASKONG HANDOG

Travel Date and Time:
Departure Dec. 14, 2024 Time 7:30 ☐am ☐pm
Travel Back Dec. 14, 2024 Time 12:00 ☐am ☑pm

Paying: ____ Yes; O.R. No. _____ Date of payment: _____
____ No (Please pay at the Accounting Office then show the receipt to the Secretary of the VPA Office)

Names of passengers: (Use a separate sheet, if needed)
ARNOLD MENDOZA, HAROLD PADILLA, JERSON MENDOZA, PEDELIANA BULLIGAN
HELENCIO BERNARDINO, JAN SAGABAAN, MARC CORNEJO, CHRISTIAN DOMINGUEZ

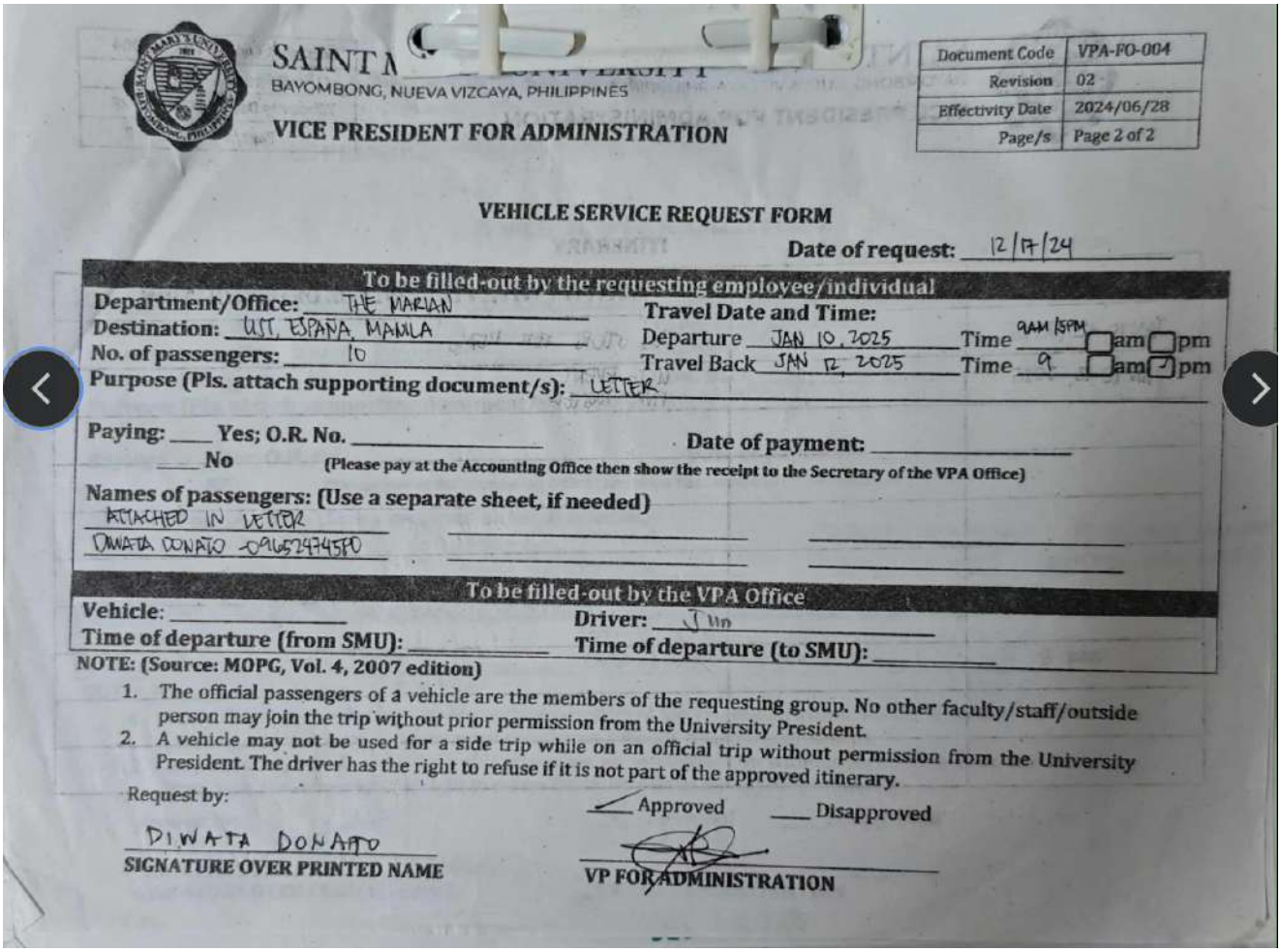
To be filled-out by the VPA Office

Vehicle: _____ Driver: Jun
Time of departure (from SMU): _____ Time of departure (to SMU): _____ 8 pax

NOTE: (Source: MOPG, Vol. 4, 2007 edition)
1. The official passengers of a vehicle are the members of the requesting group. No other faculty/staff/outside person may join the trip without prior permission from the University President.
2. A vehicle may not be used for a side trip while on an official trip without permission from the University President. The driver has the right to refuse if it is not part of the approved itinerary.

Request by:
CHRISTOPHER ALLEN S. MARQUEZ
SIGNATURE OVER PRINTED NAME

✓ Approved ____ Disapproved
VP FOR ADMINISTRATION
DEC 13 2024



SAINT M[illegible]
BAYOMBONG, NUEVA VIZCAYA, PHILIPPINES
VICE PRESIDENT FOR ADMINISTRATION

Document Code	VPA-FO-004
Revision	02
Effectivity Date	2024/06/28
Page/s	Page 2 of 2

VEHICLE SERVICE REQUEST FORM

Date of request: 12/17/24

To be filled-out by the requesting employee/individual

Department/Office: THE MARIAN
Destination: UST, ESPAÑA, MANILA
No. of passengers: 10
Purpose (Pls. attach supporting document/s): LETTER

Travel Date and Time:
Departure JAN 10, 2025 Time 9AM/5PM ☐am ☐pm
Travel Back JAN 12, 2025 Time 9 ☐am ☑pm

Paying: ____ Yes; O.R. No. _____ Date of payment: _____
____ No (Please pay at the Accounting Office then show the receipt to the Secretary of the VPA Office)

Names of passengers: (Use a separate sheet, if needed)
ATTACHED IN LETTER
DIWATA DONATO - 09652747590

To be filled-out by the VPA Office

Vehicle: _____ Driver: Jun
Time of departure (from SMU): _____ Time of departure (to SMU): _____

NOTE: (Source: MOPG, Vol. 4, 2007 edition)
1. The official passengers of a vehicle are the members of the requesting group. No other faculty/staff/outside person may join the trip without prior permission from the University President.
2. A vehicle may not be used for a side trip while on an official trip without permission from the University President. The driver has the right to refuse if it is not part of the approved itinerary.

Request by:
DIWATA DONATO
SIGNATURE OVER PRINTED NAME

✓ Approved ____ Disapproved
VP FOR ADMINISTRATION

GUIDELINES ON THE PROCUREMENT OF LOW-CARBON AND ENVIRONMENTALLY PREFERABLE EQUIPMENT, MATERIALS, AND SERVICES

Physical Plant, Properties Development and Maintenance Office (PPPDMO)
Saint Mary's University

I. Purpose

These guidelines establish criteria for selecting and procuring equipment, materials, and services that contribute to reducing greenhouse gas emissions, conserving energy and water, minimizing waste, and promoting sustainable resource use. They support environmental responsibility, resource efficiency, sustainable facility management, and continual improvement.

II. Scope

These guidelines apply to PPPDMO procurement related to:

1. building construction, renovation, and repair;
2. electrical systems and equipment;
3. air-conditioning and ventilation;
4. lighting systems;
5. plumbing and water systems;
6. renewable-energy systems;
7. office and facility equipment;
8. maintenance materials;
9. cleaning and housekeeping materials;
10. landscaping and grounds maintenance; and
11. other PPPDMO-related purchases where environmental considerations are applicable.

III. General Principles

When technically and financially feasible, PPPDMO shall prioritize products and solutions that:

1. Use less energy during operation;
2. Use less water;
3. Have longer service lives and lower replacement requirements;
4. Produce lower greenhouse-gas emissions over their useful life;
5. Use recycled, recyclable, renewable, or responsibly sourced materials;
6. Minimize packaging and unnecessary material use;
7. Generate less waste during installation, operation, and disposal;
8. Are repairable, maintainable, and have available replacement parts;
9. Avoid hazardous substances where safer alternatives are available;
10. Support renewable energy and resource-conservation initiatives; and
11. Provide a reasonable balance among environmental performance, quality, durability, safety, availability, and total cost of ownership.

IV. Procurement Guidelines by Category

A. Electrical Equipment

A.1 High-efficiency transformers;
A.2 Energy-efficient motors and electrical equipment;
A.3 Power-saving or automatic shutdown features;
A.4 Appropriately sized equipment;
A.5 LED lighting systems;
A.6 Occupancy/daylight sensors where appropriate;
A.7 Efficient power distribution equipment; and
A.8 Verifiable energy-efficiency ratings.

Procurement consideration: Evaluate expected operating consumption, service life, maintenance requirements, and total cost of ownership.

B. Air-Conditioning and Ventilation Equipment

B.1 Inverter-type and high-efficiency units where appropriate;
B.2 Higher energy-efficiency ratings;
B.3 Appropriate sizing based on room requirements;

B.4 Lower-environmental-impact refrigerants where technically appropriate;
B.5 Available spare parts;
B.6 Accessible maintenance requirements; and
B.7 Manufacturer energy-performance information.

Procurement consideration: Do not select equipment solely on lowest purchase price; consider expected energy consumption over its useful life.

C. Lighting

C.1 LED technology;
C.2 High-lumen-per-watt products;
C.3 Longer-life lamps;
C.4 Appropriate color temperature;
C.5 Occupancy sensors or timers where appropriate; and
C.6 Lighting controls that reduce unnecessary operation.

Procurement consideration: Where feasible, specify a minimum efficiency requirement rather than a brand.

D. Water-Saving Equipment and Materials

D.1 Water-efficient faucets;
D.2 Low-flow fixtures;
D.3 Dual-flush or water-efficient toilets;
D.4 Leak-detection devices;
D.5 Automatic or sensor-controlled faucets where appropriate;
D.6 Durable plumbing components; and
D.7 Rainwater-harvesting components.

Procurement consideration: Consider both water consumption and expected service life.

E. Renewable Energy Equipment

E.1 High-efficiency photovoltaic modules;
E.2 Durable mounting systems;
E.3 Efficient inverters;
E.4 Appropriate warranties;
E.5 Monitoring systems;
E.6 Available replacement parts and technical support; and
E.7 Maintainable systems.

Procurement consideration: Retain system capacity (kWp), expected generation (kWh), efficiency, warranty, service life, and maintenance requirements.

F. Construction and Building Materials

F.1 Locally available materials where appropriate;
F.2 Recycled-content materials;
F.3 Recyclable materials;
F.4 Durable and low-maintenance materials;
F.5 Longer service-life materials;
F.6 Low-VOC paints and coatings;
F.7 Materials that reduce heat gain;
F.8 Energy-efficient windows/glazing;
F.9 Materials supporting natural lighting and ventilation;
F.10 Sustainably sourced materials where verifiable; and
F.11 Materials generating less construction waste.

Procurement consideration: Environmental preference shall not compromise structural integrity, safety, durability, or required performance.

G. Paints, Adhesives, and Finishing Materials

G.1 Low-VOC or reduced-VOC products;
G.2 Water-based paints;
G.3 Environmental certifications or manufacturer documentation where available;
G.4 Durable coatings requiring fewer applications; and
G.5 Appropriate waste-disposal instructions.

H. Furniture and Other Equipment

H.1 Durable products;
H.2 Repairable and modular designs;
H.3 Replaceable components;
H.4 Recycled or recyclable materials;
H.5 Sustainably sourced materials where verifiable;
H.6 Energy-efficient electrical components; and
H.7 Minimal packaging.

V. Total Cost of Ownership

For major energy- or water-consuming equipment, PPPDMO should consider lifetime cost rather than initial purchase price alone.

Purchase Cost + Installation Cost + Energy Cost + Water Cost + Maintenance Cost + Replacement Cost – Residual/Salvage Value

This approach is particularly appropriate for ACUs, fans, pumps, motors, generators, transformers, lighting systems, solar PV systems, and other equipment with significant lifetime energy consumption.

VI. Environmental Criteria in Technical Specifications

Energy: "The equipment shall be energy-efficient and shall have documented energy-performance specifications. Preference may be given to equipment demonstrating lower energy consumption while meeting required capacity, quality, safety, and performance specifications."

Water: "The proposed equipment/fixture shall demonstrate efficient water consumption while maintaining required functionality, durability, sanitation, and performance."

Construction materials: "Where technically and economically feasible, materials with recycled/recyclable content, lower environmental impact, longer service life, and reduced maintenance requirements shall be considered."

VII. Supplier Requirements

For applicable purchases, suppliers may be requested to provide:

1. Manufacturer's technical specifications;
2. Energy-efficiency information;
3. Rated power consumption;
4. Estimated annual energy consumption, where available;
5. Water consumption data, where applicable;
6. Expected service life;
7. Warranty information;
8. Maintenance requirements;
9. Availability of spare parts;
10. Environmental certifications, where applicable;
11. Product safety certifications;
12. End-of-life/disposal information; and
13. Relevant environmental product information.

Environmental claims should be supported by available manufacturer documentation or recognized certification.

VIII. Proposed Procurement Evaluation Criteria

Criterion	Suggested Weight	Consideration
Technical performance and suitability	30%	Capacity, function, quality and safety
Quality, durability and service life	20%	Reliability and useful life
Energy/water efficiency	20%	Documented resource efficiency
Total cost of ownership	15%	Lifetime operating and maintenance cost
Maintenance and spare-parts availability	10%	Repairability and support
Environmental attributes	5%	Recycled/recyclable content, lower impact, packaging, etc.
TOTAL	100%	

Note: The percentages are a proposed PPPDMO technical evaluation framework and should be harmonized with SMU procurement rules and applicable institutional/public procurement requirements before adoption.

IX. Preferred Procurement Hierarchy

AVOID → REDUCE → REUSE → REPAIR → EFFICIENT ALTERNATIVE → RECYCLE → DISPOSE

Before purchasing new equipment, determine whether an existing item can be repaired or reused. If replacement is necessary, determine appropriate capacity, compare efficient alternatives, evaluate lifetime operating cost, and select an option meeting technical, safety, financial, and environmental requirements.

X. Low-Carbon Procurement Checklist

This checklist may accompany applicable major PPPDMO purchase requests.

Environmental Consideration	Yes	No	N/A	Remarks
Is the purchase necessary?	☐	☐	☐	
Can an existing item be repaired or reused?	☐	☐	☐	
Is an energy-efficient alternative available?	☐	☐	☐	
Is water efficiency applicable?	☐	☐	☐	
Is the equipment appropriately sized?	☐	☐	☐	
Has expected energy consumption been considered?	☐	☐	☐	
Has total cost of ownership been considered?	☐	☐	☐	
Does the product have a longer expected service life?	☐	☐	☐	
Are repair/spare parts available?	☐	☐	☐	
Does the product contain recycled/recyclable materials where appropriate?	☐	☐	☐	
Is packaging minimized?	☐	☐	☐	
Are hazardous substances minimized where feasible?	☐	☐	☐	
Does the purchase support renewable energy/resource conservation?	☐	☐	☐	
Are environmental claims supported by documentation?	☐	☐	☐	

Technical Evaluation by: _____
Reviewed by: _____
Approved by: _____

XI. Data Analytics and Monitoring

For applicable major purchases, PPPDMO shall maintain structured procurement and performance data to support EOMS monitoring, evaluation, management review, and continual improvement.

Data Field	Information to Capture
Equipment / Material	ACU, fan, lighting, pump, transformer, etc.
Capacity / Rating	HP, kWp, watts, flow rate, etc.
Technology	Inverter, LED, high-efficiency, etc.
Rated Power / Consumption	Manufacturer rating
Expected Annual Consumption	kWh/year, where available
Previous Equipment Consumption	kWh/year, where applicable
Expected Energy Reduction	kWh/year, where supportable
Expected CO_2 Reduction	kg or metric tons CO_2/year, where supportable
Purchase Cost	₱
Expected Service Life	Years
Warranty	Years
Maintenance Cost	₱, where available
Procurement Date	Date
Location	Building / facility
Asset ID	Unique identifier

The data should support the linkage: PROCUREMENT → ASSET → ENERGY/WATER CONSUMPTION → MAINTENANCE → PERFORMANCE → ENVIRONMENTAL IMPACT.

XII. Proposed EOMS Quality Objective Linkage

Process: Low-Carbon Procurement

Target: 100% of applicable major equipment purchases assessed using the Low-Carbon Procurement Checklist.

KPI: Percentage of applicable major purchases incorporating low-carbon/environmental criteria.

Evidence: Low-Carbon Procurement Checklist, technical specifications, supplier documentation, technical evaluation, and purchase records.

XIII. Review and Continual Improvement

PPPDMO shall periodically review implementation and effectiveness using procurement records, equipment performance data, energy and water consumption trends, maintenance records, environmental indicators, audit findings, and feedback. Improvements shall be documented and incorporated into succeeding procurement planning and technical specifications, as appropriate.

Prepared by:

Sgd. SHERWIN A. MARCIANO
Head, PPPDMO

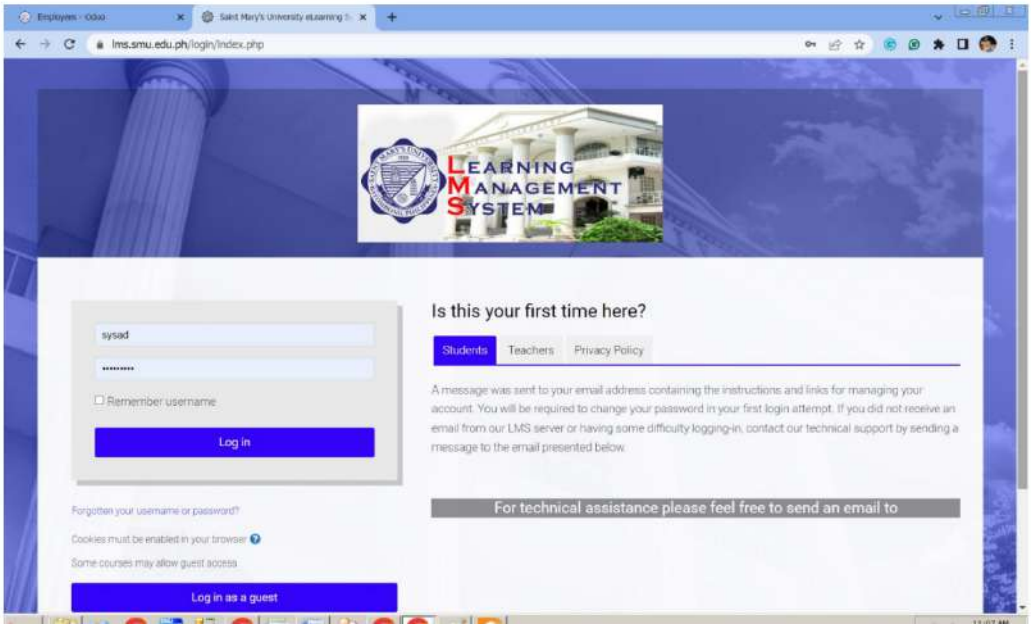
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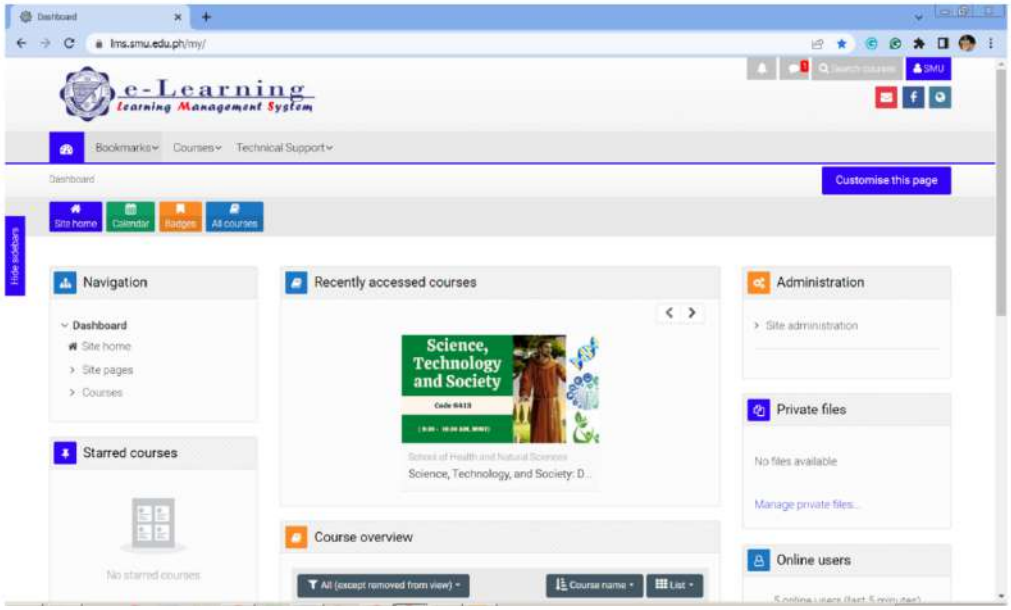
Sgd. DR. JOHN OCTAVIOUS S. PALINA
University President

Implementation of sustainability programs through the utilization of Information and Communication Technology (ICT)

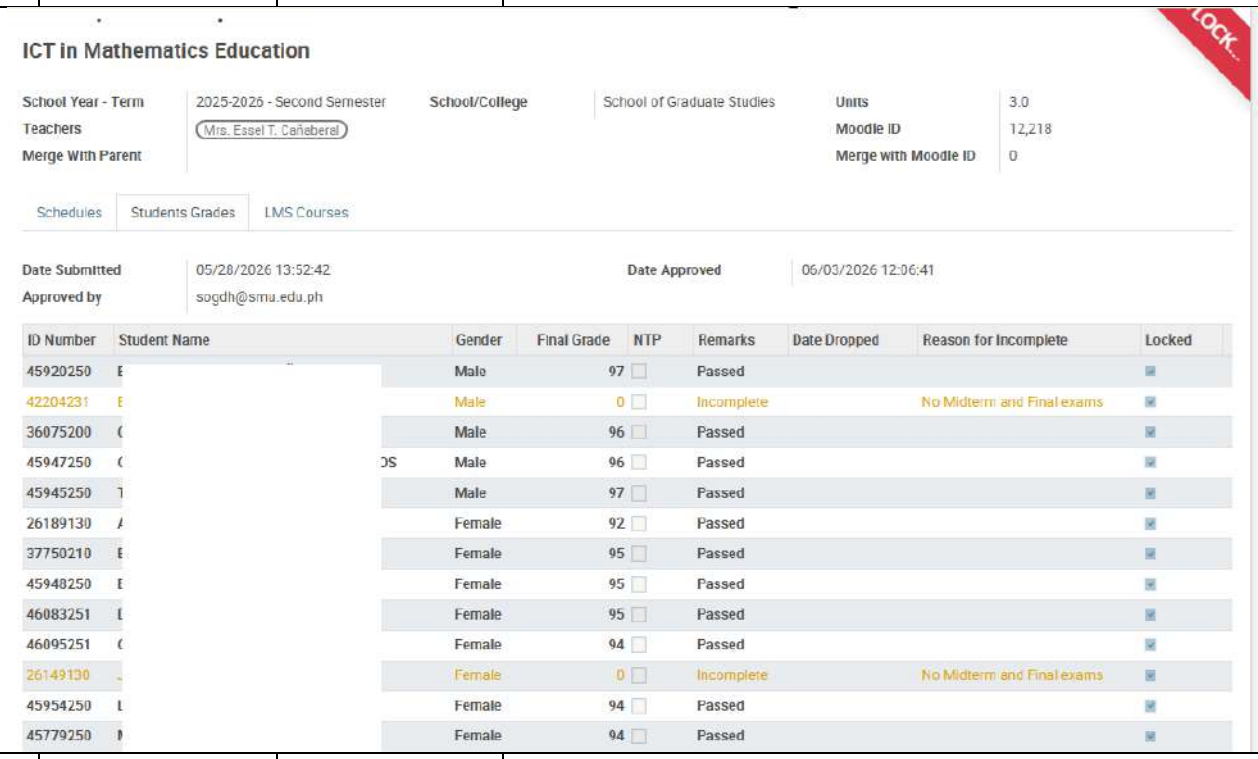
Section A — ICT for sustainability management: screenshots of sustainability dashboard/reporting system/KPI platform (showing real modules/menus).

No	Initiative	Function	Brief Description
1	**SMU CALMS Platform System**	Monitoring & Evaluation	The Class Augmenting Learning Management System enables robust synchronous and asynchronous learning modes. By facilitating remote instruction and off-campus faculty moderation, the university drastically lowers daily peak energy demands (lighting, server rooms, and air conditioning workloads) in physical facilities.





No	Initiative	Function	Brief Description
2	**Online Grade Submission**	Planning & Implementation	At Saint Mary's University, the Online Grade Submission system, which is integrated into the centralized Electronic Student Management Information System (eSMIS), facilitates and secures the entry of student marks. Faculty members log into their secure portals to input grades for class standing, assessments, and major examinations, following the criteria established in approved course syllabi. This centralized approach removes the necessity for manual paperwork and significantly decreases the likelihood of human error. After grades are entered, they automatically synchronize within the database, allowing the Office of the University Registrar (OUR) to ensure complete data integrity while providing students with immediate, confidential access to their official final grades through their personal portals.



ICT in Mathematics Education

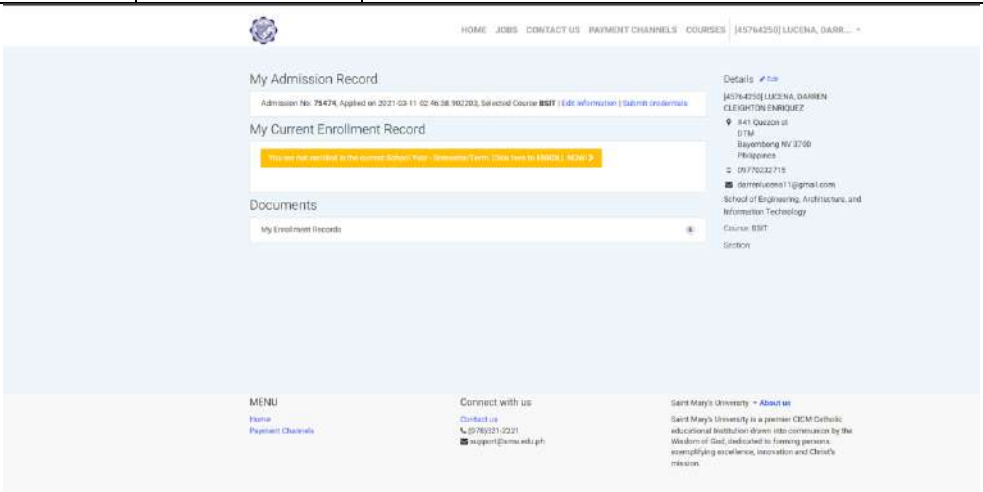
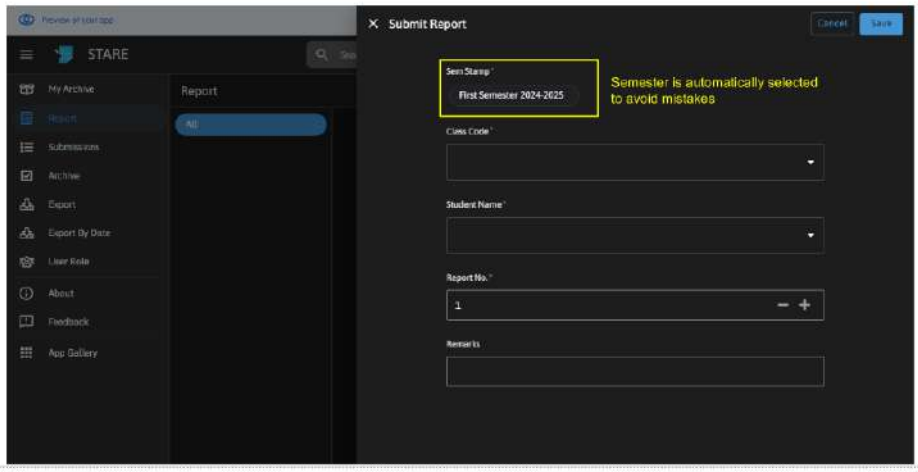
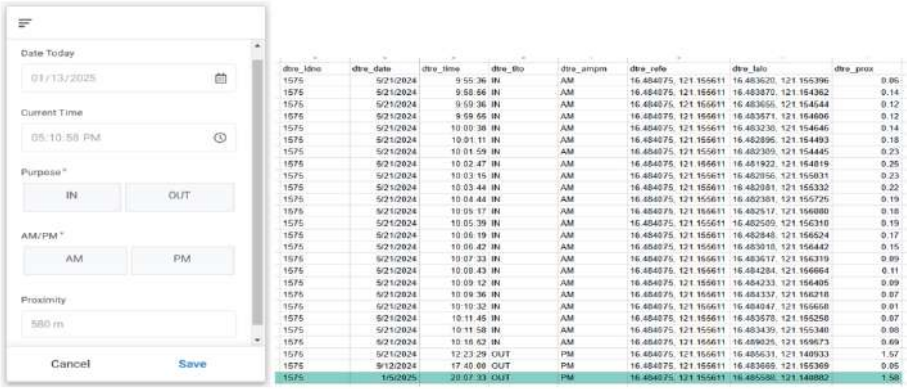
School Year - Term	2025-2026 - Second Semester	School/College	School of Graduate Studies	Units	3.0
Teachers	Mrs. Essel T. Cañaberal			Moodle ID	12,218
Merge With Parent				Merge with Moodle ID	0

Schedules | Students Grades | LMS Courses

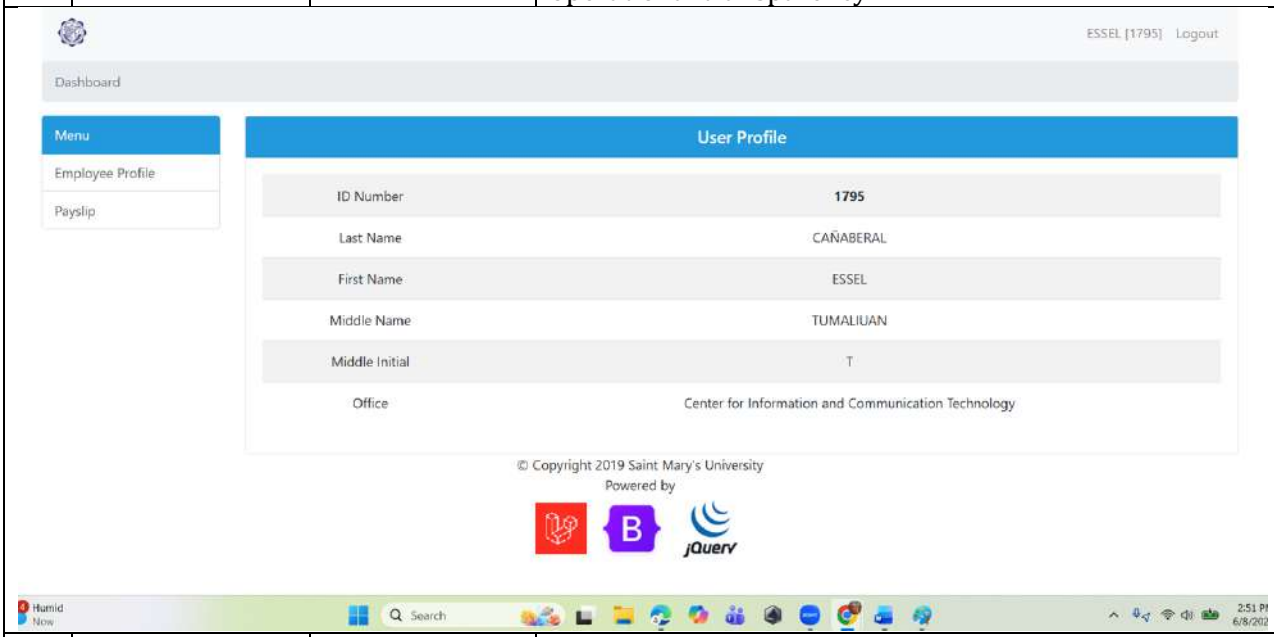
Date Submitted: 05/28/2026 13:52:42 — Date Approved: 06/03/2026 12:06:41
Approved by: sogdh@smu.edu.ph

ID Number	Student Name	Gender	Final Grade	NTP	Remarks	Date Dropped	Reason for Incomplete	Locked
45920250	E	Male	97		Passed			
42204231	E	Male	0		Incomplete		No Midterm and Final exams	
36075200	C	Male	96		Passed			
45947250	C	Male	96		Passed			
45945250	T	Male	97		Passed			
26189130	A	Female	92		Passed			
37750210	E	Female	95		Passed			
45948250	E	Female	95		Passed			
46083251	D	Female	95		Passed			
46095251	C	Female	94		Passed			
26149130		Female	0		Incomplete		No Midterm and Final exams	
45954250	L	Female	94		Passed			
45779250	M	Female	94		Passed			

3	**Online enrollment**	Monitoring	The online enrollment system through the centralized **Electronic Student Management Information System (eSMIS)** provides a seamless, paperless onboarding experience for Saint Mary's University students. From their secure portals, students can apply for admission, select blocks, and submit enlistment requests from anywhere. The centralized system automates multi-office routing, instantly linking student reservations to the Treasury and Accounting Office (TAO) for digital financial validation. Once cleared, the platform automatically updates the Office of the University Registrar's (OUR) Class Matrix Form (CMF) and activates portal access, allowing students to transition directly into their virtual SMU CALMS classrooms with zero physical line-ups.

No	Initiative	Function	Brief Description
			
4	**Online Attendance Reporting (Stare)**	Monitoring	Saint Mary's University utilizes a customized **Google AppSheet** mobile application to automate daily attendance tracking across physical and virtual classrooms. With a simple, one-click interface, faculty can swiftly record student presence from smart devices, streaming real-time data directly to a secure cloud database integrated with **eSMIS**. This low-code solution completely replaces traditional paper rosters and manual data entry, providing Academic Deans and counselors with immediate insights for proactive student interventions. Ultimately, the system enhances campus operational efficiency while supporting SMU's sustainability goals by eliminating paper waste.
			 WHAT: Enrollment Trend module (update) 

No	Initiative	Function	Brief Description
5	**Online attendance checker (Turnstile)**	Monitoring	The **Turnstile Online Attendance Checker** at Saint Mary's University is an integrated physical-to-digital gatekeeping system that enhances security and automates entry tracking. By scanning RFID-enabled university ID cards at mechanical barriers, the system promptly validates credentials and logs entry data directly into a centralized cloud database. This automated process replaces manual visitor logbooks and provides administrators with real-time insight into who is on campus. Ultimately, this continuous data flow allows the Registrar and individual departments to monitor daily attendance patterns, optimize campus traffic, and maintain a safer environment in strict compliance with university Data Privacy policies.
6	**Online Payslip**	Monitoring	The Online Payslip system at Saint Mary's University, powered by Google AppSheet, modernizes payroll management with a secure, mobile-first framework. This customized application allows employees to view detailed information regarding their salaries, deductions, and net pay directly from their smartphones or tablets. By securely connecting to the cloud databases of the Treasury and Accounting Office, AppSheet eliminates the need for traditional printed envelopes, opting instead for automated digital delivery. This real-time access mitigates administrative distribution delays, protects sensitive financial data through credentialed authentication, and supports institutional sustainability by reducing paper waste in monthly payroll workflows.
7	**Online Personal Data Inventory**	Monitoring	**Online Personal Data Inventory via Jotform** is a secure, cloud-based system used by Saint Mary's University to collect and manage detailed student and faculty profiles. Through customized, mobile-responsive forms, it systematically gathers personal, academic, and medical information, entirely replacing paper intake packets and eliminating manual data entry errors. The platform securely processes multiple entries simultaneously, instantly routing them into encrypted cloud sheets. Under the supervision of the Data Privacy Officer, Jotform's robust security features ensure full regulatory compliance, allowing administrative departments to maintain accurate, real-time directories while significantly reducing institutional paper waste.
8	**Online Alumini Database**	Monitoring and Tracking	The **Online Alumni Database for SMU** is a centralized, cloud-based repository that enables the Alumni Affairs Office to maintain real-time records of graduates' contact details, employment history, and milestones. Replacing legacy physical files and spreadsheets, this platform allows alumni to securely update profiles, request credentials, and network through personalized portals. Overseen by the Data Privacy Officer, the system features robust data encryption to protect sensitive records. Ultimately, this tool strengthens institutional ties, helping SMU track graduate employability for accreditation, coordinate events, and foster a strong, global community network.

No	Initiative	Function	Brief Description
9	**Online Test Permit Generator**	Monitoring	The **LAN-based Online Test Permit Generator** at Saint Mary's University is an internal intranet application that automates examination permit distribution by verifying student financial clearance. Running exclusively on SMU's high-speed Local Area Network (LAN), the system connects the Treasury and Accounting Office (TAO) directly to campus computer kiosk Students just tap their ID for the Test permit to be generated.
10.	**Online student and Faculty Portal**	Monitoring	The **LAN-based Online Student Portal** at Saint Mary's University is a secure intranet application providing on-campus access to vital student records. Operating over SMU's high-speed local network, it guarantees fast load times and protects data from external cyber threats without relying on the public internet. Through a personalized dashboard, students can instantly view real-time tuition balances to avoid long lines at treasury windows. The portal also features an interactive curriculum checklist for streamlined enrollment planning and a secure module for viewing official grades. Consolidating these services reduces administrative bottlenecks, prevents data tampering, and increases operational transparency.
			
11	**Online Seminar Attended update for the faculty**	Monitoring	The **LAN-based Online Seminar Attendance Update module** at Saint Mary's University is a localized tool integrated into the Human Resource Information System (HRIS). Operating strictly over the campus intranet, this application allows faculty to digitally record and update their training certificates and professional development from any on-campus terminal. By running on the local network, the system protects sensitive employee credentials from external cyber threats while speeding up data processing. This automated module eliminates manual paper tracking, providing instant updates to faculty profiles for rankings, institutional accreditation reviews, and performance evaluations managed by the HR Department.

No	Initiative	Function	Brief Description
12	**Online university Attendance tracker SIDTTRACK app (SMU ID Tap Tracker)**	Monitoring	The **Online University Attendance Tracker via AppSheet** is a mobile-first, cloud-based application that modernizes campus monitoring at Saint Mary's University. The app allows faculty and administrators to efficiently capture staff attendance directly from mobile devices or web browsers by simply tapping their university ID cards. By linking seamlessly with cloud databases, the system replaces traditional paper rosters with automated digital records. This eliminates manual data entry delays, provides administrators with real-time attendance insights, and ensures data security through credentialed user authentication—ultimately optimizing institutional workflows while reducing paper waste across campus departments.
13	**Online Outreach update tracker**	Monitoring	The **Online Outreach Update Tracker via AppSheet** is a mobile-first, cloud-based application that modernizes the tracking of community extension projects at Saint Mary's University. It allows coordinators to document field activities, log beneficiary statistics, and upload progress reports directly from smartphones or web browsers. By connecting seamlessly with centralized cloud databases, the system replaces traditional paper reports with automated digital updates. This eliminates data entry delays, provides administrators with real-time insights into community engagement, and ensures data integrity through secure authentication—streamlining outreach management while significantly reducing institutional paper waste.
14	**Online College Exam Scheduler**	Monitoring and Tracking	The **Online College Exam Scheduler for New Students** at Saint Mary's University (SMU is a centralized, cloud-based platform that automates the entrance and placement testing process. Designed for incoming freshmen and transferees, this self-service portal replaces manual booking systems, allowing prospective students to choose exam dates, times, and testing rooms via smartphones or computers based on real-time seat availability.
15	**Student Entry Notifier**	Monitoring and Tracking	The **Student Entry Notifier** at Saint Mary's University is an automated campus security utility that tracks and reports student arrivals in real time. Using by tapping their ID on kiosks at university entrances, the system promptly records a student's entry when they tap their institutional ID card. Once verified, the platform swiftly dispatches a digital notification, such as an SMS or app alert, to registered parents or guardians. By integrating on-campus attendance hardware with automated communication systems, this solution enhances campus security, offers reassurance to families, and modernizes institutional student monitoring workflows.
16	**SGD Website**	Monitoring	**SMU SDG Website** is a dedicated digital platform demonstrating Saint Mary's University's commitment to the United Nations Sustainable Development Goals (SDGs). It serves as a central archive for community initiatives, tracking and preserving comprehensive annual SDG reports detailing institutional progress. Visitors can access real-time updates on university-led programs, including community health checkups, environmental sustainability efforts, livelihood

No	Initiative	Function	Brief Description
			training, and regional research collaborations. By cataloging these initiatives—which link quality education, health, and local community outreach—the website acts as a transparent portal into SMU's mission to drive inclusive growth, social change, and sustainable regional development.
17	**LAN-Based NAS**	Repository	The **LAN-based Network-Attached Storage (NAS) system** at Saint Mary's University is a centralized file-level storage solution integrated into the campus intranet backbone. Operating entirely within the high-speed local network, the NAS acts as a dedicated private cloud repository, enabling faculty, administrators, and laboratory students to securely store, back up, and share digital assets from any on-campus workstation. By limiting data traffic to the localized network, the university guarantees ultra-fast file transfer speeds and robust protection for sensitive institutional files, research data, and administrative records against external web threats.
18	**MyMCA App (My Mobile Campus Ally)**	Monitoring	The MyMCA App (My Mobile Campus Ally) was recently updated and modified by Mark Fadulla to enhance its functionality, performance, and user experience. The update improved navigation, responsiveness, and accessibility, allowing students and staff to efficiently access campus information, announcements, and services. Additional features included real-time notifications, streamlined data retrieval, and improved security measures. This modification supports better engagement, communication, and campus resource management, providing a reliable and user-friendly mobile platform that strengthens connectivity and access to essential university services for the campus community.
19	**SEAPORT (SMU Employee App Portal)**	Monitoring	The SEAPORT (SMU Employee App Portal) was developed as an integrated digital platform designed to streamline employee-related processes and improve overall organizational efficiency within Saint Mary's University (SMU). The system serves as a centralized hub where employees can conveniently access key services such as attendance tracking, event participation, merit point monitoring, and other HR-related functions.
20	**Development of Inventory Management System for the IMO**	Monitoring and Tracking	The Development of an Inventory Management System for the IMO was undertaken to improve the tracking and control of supplies and equipment. The system provides a centralized platform for recording, monitoring, and updating inventory in real time. It includes features such as item categorization, stock level monitoring, and automated reporting to ensure accuracy and efficiency. Designed with a user-friendly interface, it helps staff easily manage resources and reduce errors in manual recording. This innovation enhances operational efficiency, ensures proper resource allocation, and supports better decision-making within the office

Section B — Connectivity readiness: Wi-Fi coverage summary (map/list), Internet/network availability snapshot, and (if available) monitoring screenshots.

No	Initiative	Function	Brief Description	Screenshot or link of evidence
1	**Campus-Wide Wi-Fi Infrastructure**	Implementation Support	Full Wi-Fi coverage in academic and administrative buildings to support digital sustainability management	
2	**Redundant Internet Connectivity**	Continuity	SMU network infrastructure features a dual-Internet Service Provider (ISP) setup designed to balance high-speed performance with maximum uptime. Our primary connection is powered by a subscription to M7 Telecommunications Corporation, which delivers a massive 1.5 Gbps (Gigabits per second) bandwidth allocation. This ultra-high-speed pipe serves as the backbone for our daily, data-intensive operations, easily handling heavy concurrent traffic, smooth video conferencing, and rapid cloud synchronization. To safeguard against potential network disruptions, we have deployed a secondary, redundant connection from Converge ICT Solutions. Operating alongside the M7 subscription, this secondary Converge line provides an independent routing path to the internet. If the primary M7 line experiences technical issues or scheduled maintenance, the secondary line serves as a crucial failover, ensuring seamless network continuity and preventing any operational downtime.	
3	**Network Monitoring System**	Monitoring	At Saint Mary's University, the presence of **Sophos** as our centralized Network Monitoring System and Next-Generation Firewall acts as the primary digital shield for the university's network infrastructure. Sophos continuously monitors data traffic flowing across the campus-wide Wi-Fi and our dual-ISP setup, immediately identifying and blocking cyber threats, malware, and unauthorized access attempts. By providing real-time visibility into network health, it prevents bandwidth congestion and ensures maximum uptime for critical platforms like eSMIS and SMU CALMS. Ultimately, Sophos transforms cybersecurity policies into automated protection, maintaining absolute data privacy and network integrity across the entire virtual campus.	

Section C — Infrastructure reliability and security: backup/continuity summary, access control/security policy excerpt, monitoring snapshot.

No	Initiative	Function	Brief Description	Screenshot or link of evidence
1	**Data Backup & Disaster Recovery System**	Continuity	Daily backups and defined recovery procedures to ensure system availability	
2	**Developed a feature for monitoring the types of access made to employee information. (Audit logs)**	Monitoring	The feature for monitoring access to employee information (Audit Logs) was developed and modified by Wilbert Sadangsal to enhance data security, transparency, and accountability within the system. The update allows administrators to track, log, and categorize all types of access to employee records, including viewing, editing, and exporting activities. With real-time monitoring and detailed audit logs, the feature ensures compliance with data privacy policies, improves oversight, and provides a reliable tool for detecting unauthorized access and maintaining the	

Percentage of University Budget for Sustainability Efforts

SAINT MARY'S UNIVERSITY
Bayombong, Nueva Vizcaya

BUDGET FOR SUSTAINABILITY EFFORTS

	SUSTAINABILITY EFFORTS	AY 2023-2024	AY 2024-2025	AY 2025-2026	AVERAGE
Setting and Infrastructure					
1	Agency personnel costs for campus security	5,265,364	5,458,998	5,692,288	5,472,217
2	Maintenance, calibration of laboratory apparatus, equipment	700,000	900,000	1,000,000	866,667
3	Community Development (Partnerships)	285,388	350,000	640,000	425,129
4	Wellness Program	400,000	400,000	400,000	400,000
5	Salaries and benefits increase, promotions, awards	16,814,349	17,655,205	20,512,333	18,327,296
6	Property insurance	1,140,000	1,227,332	2,195,717	1,521,016
7	New facilities, restroom and facilities renovation	59,350,000	20,590,444	36,504,920	38,815,121
Energy and Climate Change					
1	LED bulbs	500,000	438,000	480,000	472,667
2	Solar lights (campus walkways, athletic field)	300,000	400,000	500,000	400,000
3	Solar panel (219.7 KWp rooftop photovoltaic solar panel)	2,330,900	2,330,900	2,330,900	2,330,900
4	Replacement of frequently-repaired assets:				
	- Airconditioning units	250,000	965,786	903,413	706,400
	- Orbit and exhaust fans	300,000	10,000	145,050	151,683
	- Vehicles	1,500,000	2,046,000	1,251,453	1,599,151
	- Computers, printers	1,400,000	4,537,783	2,091,452	2,676,412
5	Internet Subscription, Linode, Vultr, Zoom, Jotform, Network maintenance, personnel costs	6,417,960	2,867,220	2,417,735	3,900,972
6	Core switch, network cabling, server and peripherals	1,550,000	73,066	467,418	696,828
7	Google Workspace subscription for employees and students	1,053,360	1,050,431	1,194,270	1,099,354
8	Community Development (Partnerships)	285,388	350,000	640,000	425,129
Waste					
1	Agency personnel costs for campus housekeeping	4,485,000	4,397,138	4,448,585	4,443,574
2	Garbage bags, garbage collection fees	540,000	540,000	600,000	560,000
3	Waste bins for waste segregation	500,000	445,723	500,000	481,908
4	Communication (telephone, mobile phones)	1,211,522	1,105,123	755,898	1,024,181
Water					
1	Community Development (Partnerships)	285,388	350,000	640,000	425,129
2	Drinking fountains	150,000	126,900	175,000	150,633
Education and Research					
1	Researches on Sustainability	3,294,610	4,762,242	4,201,767	4,086,206
2	Community Development (Hunger Alleviation, Knowledge Transfe	285,388		85,000	185,194
TOTAL BUDGET FOR SUSTAINABILITY EFFORTS (in Php)		110,594,615	73,378,291	90,773,199	91,582,035
Exchange Rate as of July 31		54.73400	58.64500	61.65400	58.34433
A. TOTAL BUDGET FOR SUSTAINABILITY EFFORTS (in US Dollars)		**$2,020,583**	**$1,251,228**	**$1,472,300**	**$1,581,371**

The total budget for sustainability efforts in Academic Year 2023-2024 is $2,020,583, Academic Year 2024-2025 is $1,251,228 and **Academic Year 2025-2026 is$1,472,300**. At an average the budget for sustainability efforts $1,581,371.

The average percentage of budget for sustainability efforts to total budget is 25% for the past three years. The percentage of budget for sustainability efforts to total budget In Academic Year 2023-2024, Academic Year 2024-2025 and Academic Year 2025-2026 are 32%, 22% and 21% respectively.

Saint Mary's University's budget allocation for sustainability efforts for the past academic years. At an average 71%, 16%, 7%, 1% and 5% of the total budget are allocated.

STRATEGIC PLAN (aligned to SDG 13)

STRATEGIC PLAN 2025-2030

CENTURY OF MISSION, A FUTURE OF IMPACT



Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
e. Phase 2 of the Fr. Tanchoco building	IEGE	CUS	PPPDMO			Phase 2 completed			By the end of Year 5, Phase II of the Fr. Tanchoco building has been completed.	
f. Indoor firing range.	IEGE	CUS	PPPDMO	Indoor firing range repaired					By the end of Year 5, the indoor firing range has been 100% repaired	
g. Comfort rooms	IEGE	CUS	PPPDMO	1 renovated	1 renovated				By the end of Year 5, 2 old restrooms (1 college and 1 JHS) shall have been renovated.	
h. Rooftop photovoltaic solar panels	IEGE	CUS	PPPDMO	3 additional installed (1 GS, 1 JHS, 1 E)					By the end of Year 5, 3 99.00 KPW on-grid Solar PV system shall have been installed	
i. Centennial building	IEGE	CUS	PPPDMO					100% completed	By the end of Year 5, the Centennial building shall have been constructed.	
j. Basic Education Registrar's Office vaults	IEGE	CUS	PPPDMO	Registrar's vault constructed (GS)	Registrar's vault constructed (JHS)	Registrar's vault constructed (SHS)			By the end of Year 5, 3 fire-resistant vaults shall have been constructed for the basic education Registrar's Office.	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
k. Water tanks	IEGE	CUS	PPPDMO	10					By the end of Year 5, 10 small water tanks have been replaced with 4 bigger tanks.	
l. Airconditioning units at the School of Graduate Studies and college classrooms	IEGE	CUS	PPPDMO		24 classrooms in the JVD installed with aircon	44 classrooms installed with aircon		0	By the end of Year 5, 88 classrooms at the college campus have been installed with air conditioning units.	
m. Main gate façade.	IEGE	CUS	PPPDMO		Fascade improved				By the end of Year 5, the main gate entrance and façade in the college campus has been aesthetically improved.	
n. Car and motorcycle parking areas	IEGE	CUS	PPPDMO			Vehicles/ motorcycles parking constructed			By the end of Year 5, new parking space for vehicles/ motorcycles has been constructed.	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
o. Permanent building signages.	IEGE	CUS	PPPDMO			100%			By the end of Year 5, 100% of building signages have been replaced with permanent building markers.	
p. Bunkhouse in SMU's *Dinadiawan* property.	IEGE	CUS	PPPDMO		Bunkhouse constructed				By the end of Year 5, a bunkhouse in the Dinadiawan property shall have been constructed.	
q. Orbit fans	IEGE	CUS	PPPDMO IMO IAO Finance GSO	100	100	100	100	100	By the end of Year 5, 500 orbit fans shall have been replaced	
r. LED lights	IEGE	CUS	PPPDMO IMO Finance	100%	100%	100%	100%	100%	By the end of Year 5, 100% of the campuses shall have been using LED lighting.	
s. Feeder Lines	IEGE	CUS	PPPDMO GSO Finance SPCO IMO	UB, CL,	MV/CNS, CICM, TTBDO, E, H				By the end of Year 5, 7 buildings (MV, CICM, CNS, TTBDO, S, UB, CL and H) shall have been separated	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
									with new feeder lines.	
t. GenSet Purchase	IEGE	CUS	PPPDMO GSO SPCO Finance IMO	1					By the end of Year 5, 1 new (1000KVA) generator set shall have been purchased and installed at the SHS powerhouse	
u. Battery storage system	IEGE	CUS	PPPDMO GSO VPF IMO	1 battery for Hantson and Tanchoco installed	1 installed at the Sacred Heard Center	1 installed at the JVD	1 installed at the GDB and Apo Pilo		By the end of Year 5, 4 battery storage system shall have been purchased and installed	
v. MRU	IEGE	CUS	PPPDMO	MRU constructed					By the end of Year 5, the MRU shall have been constructed..	
w. PPPDMO Shop	IEGE	CUS	PPPDMO	PPPDMO shop constructed					By the end of Year 5, the PPPDMO shop shall have been constructed.	
x. Repainting of all buildings	IEGE	CUS	PPPDMO Finance GS JHS SHS Deans	2 buildings (D and J)- GS	3 buildings (E, B, C)-JHS	1 (H building) SHS, CL	Gym, Main Library,	S Extension Building, D building,)	By the end of Year 5, 11 buildings shall have been repainted 2 buildings (D and J)-GS	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
Compliance Program a. Inspection of major projects									conducted for major projects	
b. Compliance with building occupancy permits	IEGE	IBP	PPPDMO	5	5	5	5	4	By the end of Year 5, 24 buildings shall have been granted certificates of occupancy.	
c. Physical Facilities Preventive Maintenance c.1. Genset c.2. Fans c.3. Aircons c..4. CRs c.5. Ceilings c.6. Classrooms c.7. Tools c.8. Equipment	IEGE	IBP	PPPDMO GSO SPCO Finance	100%	100%	100%	100%	100%	By the end of Year 5, 100% of scheduled facilities preventive maintenance (including calibration) shall have been completed on time.	
`Services Development Program (RSDP) a. Admission	AA	CUS	OUR CICT	1	1	1	1	1	By the end of Year 5, at least 5 enhancements in admissions process	

									raised.	
Sustainable Resource Management Program	IEGE	IBP	PPPDMO	3	1	1			By the end of Year 5, 5, rainwater collection units	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
a. Rainwater Harvesting System Project									shall have been installed.	
b. Campus Energy Consumption Reduction Project	IEGE	IBP	PPPDMO GSO SPCO Finance IMO	Solar panel installation	5-10% energy reduction compared to previous year	5-10% energy reduction compared to previous year	5-10% energy reduction compared to previous year	5-10% energy reductioncompared to previous year	By the end of Year 5, a cumulative reduction in total campus energy consumption of at least 20% (based on Year 2 baseline level) shall have been achieved.	
c. Green Campus Project	IEGE	IBP	PPPDMO GSO	1	1	1	1	1	By the end of Year 5, 5 instagramable sites shall have been developed.	
Consolidation of SDG Initiatives	IEGE	CUS	PERIO	1	1	1	1	1	By the end of Year 5, 5 reports on SDG initiatives shall	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
									have been made and published.	
Waste and Emissions Management Program a. Waste Electrical and Electronic Equipment (WEEE) / e-waste Reduction	AD	IBP	SPCO CETSO	300kg reduction	300kg reduction	300kg reduction	300kg reduction	300kg reduction	By the end of Year 5, WEEE shall have been reduced to 1500kg	
b. Waste Segregation	AD	IBP	SPCO PPPMDO (GSO)	1000 bags segregated	1000 bags segregated	1000 bags segregated	1000 bags segregated	1000 bags segregated	By the end of Year 5, 5000 bags shall have been segregated.	
c. Recycling	AD	IBP	SPCO PPPDMO (GSO)	300 kg recycled	300 kg recycled	300 kg recycled	300 kg recycled	300 kg recycled	By the end of Year 5, 1500kg shall have been recycled.	
Enhanced CHSF Program	AD	IBP	ADSAS DSAS	2 meetings with PDEA or other government	100% provision of the legal requirement,	Completed and sustained	Completed and sustained	Completed and sustained	By the end of Year 5, the university is accredited by at	Php 10,000

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
				agencies to complete the documents	including inspection, was conducted				least one government agency as drug free school	
Safety and Compliance Program a. Safety Drills and Trainings	AD	IBP	SPCO CNS UHSO	1	1	1	1	1	By the end of Year 5, 5 laboratory safety trainings and drills shall have been conducted in all schools	Php 10,000
b. Zero-accident Record	AA	IBP	CNS	100%	100%	100%	100%	100%	By the end of Year 5, 100% of academic laboratories shall have maintained a zero-accident record annually	
c. Regulatory/ Statutory Compliance	AD	IBP	SPCO	100% compliance	100% compliance	100% compliance	100% compliance	100% compliance	By the end of Year 5, SMU shall have been compliant with all regulatory and statutory compliance requirements on	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
									safety and pollution control .	
d. Installation and upgrading of automated Fire Detection Alarm System (FDAS)	AD	IBP	SPCO CETSO	installation and testing the functionality of automated fire detection alarm system for the 11 buildings	installation and testing the functionality of automated fire detection alarm system for the 11 buildings	installation and testing the functionality of automated fire detection alarm system for the 11 buildings	Maintenance and monitoring of automated FDAS	Maintenance and monitoring of automated FDAS	By the end of Year 5, 100% of the buildings shall have been fully equipped with an automated fire detection alarm system (FDAS).	Php 1,000,000

GOAL 4:
Bolstered transformative engagement with the local and global communities (SOCIAL RESPONSIBILITY)

Strategic Objective 4.1: Transform communities by supporting CICM advocacies

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
Hunger Alleviation Program 1. Feed My Lambs Project	MI	CUS	CEIPSC HRDO NSTP GTO	5	5	5	5	5	By the end of Year 5, 25 recipients of the Feed My Lambs Project have been identified.	
2. Complementary Feeding Program	MI	CUS	CEIPSC NAP NSTP Basic Ed		1		1		By the end of Year 5, at least two complementary feeding projects with partner communities / schools shall have been conducted	
Ecological Protection and Sustainability Program (Integrity of Creation) 1. Ecological Education	MI	CUS	CEIPSC NSTP Basic Ed	1	1	1	1	1	By the end of Year 5, five ecological education activities shall have been conducted with partner communities/schools	
2. Adopt-a-River Project	AA	CUS	CNS CEIPSC NSTP SPCO	1	1	1	1	1	By the end of Year 5, at least five river conservation, monitoring, and	

Strategic Program/ Project	KRA	BSC	Partner Units	Y1	Y2	Y3	Y4	Y5	KPI	Budget
									community engagement activities shall have been implemented.	
3. Clean Water and Sanitation	MI	CUS	CEIPSC NSTP SPCO JHS	1	1	1	1	1	By the end of Year 5, at least 5 clean water and sanitation-related activities shall have been conducted.	
4. Tree-growing and site clearing activities	MI	CUS	CEIPSC NSTP PPPDMO SPCO GSD JHS	GSD=175 JHS=660 College=327	GSD=175 JHS=660 College=327	GSD=175 JHS=660 College=327	GSD=175 JHS=660 College=327	GSD=175 JHS=660 College=327	By the end of Year 5, 5,810 trees shall have been planted and sustained/maintained	
Disaster Risk Reduction Program	MI	CUS	CEIPSC SHS NSTP SPCO	1	1	1	1	1	By the end of Year 5, at least five extension activities on DRRM trainings/capacitation shall have been conducted	
Health and Wellbeing Promotion Program	MI	CUS	CEIPSC SHANS NSTP	1	1	1	1	1	By the end of Year 5, at least five extension activities on medical mission activities shall have been conducted	

DATE: JULY 30, 2024 – TESTING & COMMISSIONING
SMU INSPECTION TEAM – Engr. JOJO M., SHERWIN M., Engr. PHILLIP G. – POWERHOUSE 2

















SMU SR. HIGH – POWERHOUSE #2





DATE : JULY 26, 2024 TRANSMISSION LINES & PRIMARY METERING







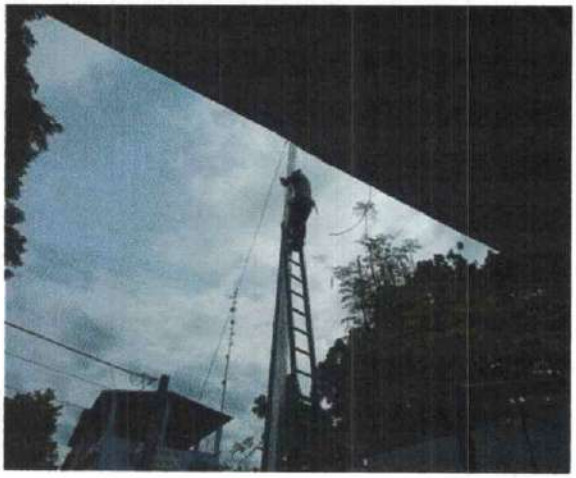


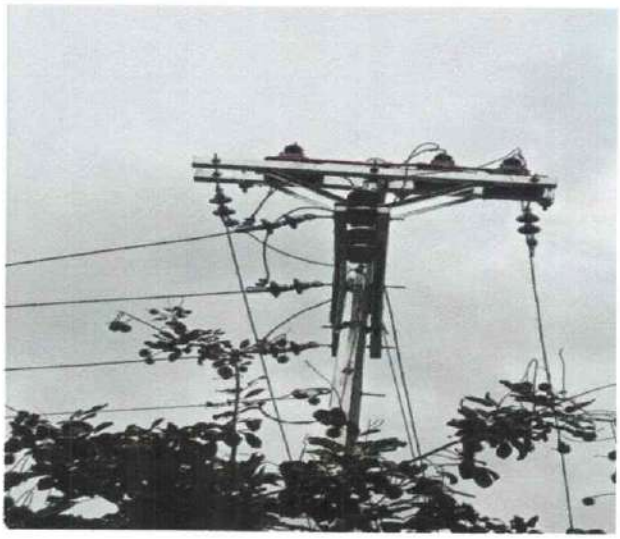




DATE: JULY 27, 2024 – NUVELCO PRIMARY METERING & TRANSMISSION LINES













DATE: JULY 28, 2024 - SMU SENIOR HIGH SCHOOL POWER TRANSFORMER 3 X 100KVA
ON GOING INSTALLATION – NUVELCO PERSONNEL













CGB Geotechnical Testing Services
Lot 38-C-2 #61 Kambal Road., Guitnang Bayan 1, San Mateo Rizal
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GEOTECHNICAL INVESTIGATION REPORT

CONSTRUCTION OF SAINT MARY'S UNIVERSITY

3700 Bayombong, Nueva Vizcaya

OWNER: SAINT MARY'S UNIVERSITY

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APPENDIX-A	A.1	Borehole Location and Site Location
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1.0 INTRODUCTION

This report pertains to the **CONSTRUCTION OF SAINT MARY'S UNIVERSITY** located at 3700 Bayombong, Nueva Vizcaya presents the evaluation of the results of the geotechnical investigation of the said area.

CGB Geotechnical Testing Services conducted the geotechnical investigation drilled **two (2) boreholes**, in order to assess the sub-soil condition and evaluate its characteristics, and for each site the soil samples recovered were then brought to **NDB Engineering Consultancy** the soil laboratory center for analysis and testing. Laboratory tests on selected soil samples include:

- Soil Classification of Soils for Engineering Purposes
  Unified Soil Classification System (ASTM D2487-93)
- Grain Size Analysis of Soils (ASTM D422-63)
- Liquid Limits of Soils (ASTM D4318-95)
- Plastic Limits of Soils (ASTM D4318-95)
- Determination of Moisture Content of Soils (ASTM D2216-92)
- Unconfined Compressive Strength of Cohesive Soil (ASTM D2166-91)

This report presents the field (Standard Penetration Test – SPT) by **CGB Geotechnical Testing Services** and laboratory procedures adopted in the investigation as well as the evaluation of the test results for the subsequent foundation analysis were made by **NDB Engineering Consultancy**.

Subsurface conditions are presented in the form of idealized soil profiles (See: Appendices) and borehole logs that include the results of the field and laboratory tests on soil samples were both coordinated by **CGB Geotechnical Testing Services** and **NDB Engineering Consultancy**.

2.0 FIELD INVESTIGATION

The field investigation within the site consisted of drilling of **two (2) boreholes**. The Borehole Location Plan is appended to this report (See Appendices). Table 1 presents the summary of the investigation conducted.

Table 1: Summary of Field Investigation

Borehole Designation	Final Depth of Borehole	Water Level	Date of Drilling
BH-1	**15.00 m**	**2.35 m**	**06-19-24 to 06-19-24**
BH-1	**15.00 m**	**2.15 m**	**06-19-24 to 06-19-24**

Washboring procedures were employed in order to advance the borehole and the Standard Penetration Test was done in order to get the penetration resistance profile of the underlying soils.

The Standard Penetration Test (SPT) was done in Accordance with ASTM specifications. For each test, a 2-inch (50.8mm) outside diameter Spoon Sampler is driven into soil a distance of 18 inches (460mm) by means of a 140lb. (63.5 kg.) driving mass falling free from a height of 30 inches (760mm). The number of blows needed to drive the sampler 18 inches (460mm) is recorded and the number of blows needed to drive the last 12 inches (305mm) is taken as the N-value.

Undisturbed Sample was done accordance with ASTMD-1587 procedure using thin-walled tube sampler to obtain intact specimens of fine-grained soils for laboratory tests to determine engineering properties of soils (strength, compressibility, permeability, and density).

Soil samples were recovered using the spoon sampler and were then taken to the laboratory for analysis and testing.

Complementing the field activities is the laboratory testing of the samples obtained. The results of the field works and laboratory investigation were then used to establish the parameters for determining the type of foundation, level of foundation and bearing capacities.

3.0 LABORATORY TESTING

Representative Soil Samples obtained during drilling / samplings were subjected to the following laboratory tests:

Soil Classification Tests per ASTM D2487
This standard describes a system for classifying mineral and organo-mineral soils for engineering purposes based on laboratory determination of particle size characteristics, liquid limit and plasticity index.

Grain Size Analysis per ASTM D422
This Method covers the quantities determination of the distribution of particle sizes of soils.

Soil was passed through a series of sieve, the weight of soil retained in each sieve determined and recorded. For each sample analyzed, a gradation curve was drawn based on the percent finer weight.

Determination Moisture Content per ASTM D2216
This method covers the laboratory determination of the water / moisture content of soil by weight.

The moisture content of a material is defined as the ratio, express as a percentage, of the mass of pore water in a given mass of material to the mass of the solid material particles.

Atterberg Limit Test per ASTM D4318
This test method covers the determination of the liquid limit, plastic limit and the plasticity index of soils.

Liquid Limit of Soil
The liquid limit of a soil is the water content, express as a percentage of the mass of the oven-dried soil after attaining the condition between the liquid and plastic states.

Plastic Limit and Plasticity Index of Soils
The plastic limit of the soil is the water content, express as a percentage of the mass of the oven oven-dried soil after attaining the condition between the plastic and semi-solid states.
Plasticity Index is defined as the difference of the liquid and plastic limits of the soil.

Unconfined Compressive Strength of Cohesive Soil ASTM D2166-91

This test method covers the determination of the unconfined compressive strength of cohesive soil in the intact, remolded, or reconstituted condition, using strain-controlled application of the axial load.

4.0 RESULTS OF FIELD AND LABORATORY TESTING

The result of field and laboratory testing are presented in table 2.

Table 2: Idealized subsurface profile at BH-1

Depth, m	USCS Classification / Description	SPT N-value	Consistency / Relative Condition
0.55 – 1.00	ML – Sandy SILT – brownish gray	13	Stiff
1.55 – 2.00	ML – Sandy SILT – brownish gray	15	Stiff
2.55 – 3.00	ML – Sandy SILT – brownish gray	32	Hard
3.55 – 4.00	SM – Silty SAND – gray	28	Medium Dense
4.55 – 5.00	SM – Silty Gravelly SAND – gray	53	Very Dense
5.55 – 6.00	SM – Silty Gravelly SAND – gray	50	Dense
7.05 – 7.50	GM – Silty Sandy GRAVEL – gray	55	Very Dense
8.55 – 9.00	GM – Silty Sandy GRAVEL – gray	58	Very Dense
10.05 – 10.50	GM – Silty Sandy GRAVEL – gray	42	Dense
11.55 – 12.00	GM – Silty Sandy GRAVEL – gray	55	Very Dense
13.05 – 13.50	GM – Silty Sandy GRAVEL – gray	58	Very Dense
14.55 – 15.00	GM – Silty Sandy GRAVEL – gray	58	Very Dense

Table 3: Idealized subsurface profile at BH-2

Depth, m	USCS Classification / Description	SPT N-value	Consistency / Relative Condition
0.55 – 1.00	GM – Silty Sandy GRAVEL – gray	13	Medium Dense
1.55 – 2.00	GM – Silty Sandy GRAVEL – gray	15	Medium Dense
2.55 – 3.00	SM – Silty Gravelly SAND – gray	46	Dense
3.55 – 4.00	SM – Silty Gravelly SAND – gray	41	Dense
4.55 – 5.00	SM – Silty Gravelly SAND – gray	38	Dense
5.55 – 6.00	GM – Silty Sandy GRAVEL – gray	52	Very Dense
7.05 – 7.50	GM – Silty Sandy GRAVEL – gray	58	Very Dense
8.55 – 9.00	SM – Silty Gravelly SAND – gray	62	Very Dense
10.05 – 10.50	SM – Silty Gravelly SAND – gray	49	Very Dense
11.55 – 12.00	SM – Silty Gravelly SAND – gray	62	Very Dense
13.05 – 13.50	SM – Silty Gravelly SAND – gray	70	Very Dense
14.55 – 15.00	SM – Silty Gravelly SAND – gray	64	Very Dense

5.0 REGIONAL GEOLOGY AND SEISMICITY

Surrounded by North Luzon's three large mountain ranges, Nueva Vizcaya is generally mountainous, varying from steep mountains to rolling hills, with some valleys and plains. It is bordered on the west by the Cordillera mountains, on the east by the Sierra Madre mountains, and on the south by the Caraballo Mountains. The province (and the entire Cagayan Valley) are separated from the Central Luzon plains by the Caraballo Mountains.

The province has a total land area of 3,975.67 square kilometres (1,535.01 sq mi). The southernmost province in the Cagayan Valley region, Nueva Vizcaya lies approximately 268 kilometres (167 mi) north of Metro Manila and can be reached by land via the Cagayan Valley Road (Maharlika Highway).

6.0 GEOTECHNICAL DESIGN / ENGINEERING CONSIDERATION

6.1 Seismic Design Criteria

The Philippine archipelago is a part of the Pacific Ring of Fire and considered as part of seismically active region globally, and locally classified under Seismic Zone IV where Z=0.4. The most probable seismic source that may affect the project site is the Approximately 2.3 km northwest of the Maddiangat Fault.

The following seismic design parameters are:

PARAMETER	VALUE
Peak Ground Acceleration	**0.60g**
Soil Profile Type	**S_C & S_D**
Seismic Zone	**4**
Seismic Source Type	**A**
Spectral Acceleration	**Ss = 1.61-3.00(0.2 seconds)** **S_1 = 0.71-1.60(1.0 seconds)**
Near-Source Factor	**N_a = 1.50** **N_v = 2.00**
Seismic Coefficient	**C_a = 0.40 N_a & 0.44 N_a** **C_v = 0.56 N_v & 0.64 N_v**

See Figure 1 and 2 of Acceleration Map of Region II and Figure 3 of Peak Ground Acceleration Map
**Table 6.1 – Seismic Design Parameters Other seismic parameters shall be determined by the Design Engineer using NSCP 2015 7th Edition.*

For concentrically loaded footings the required area is determined from

$$A_{req} = \frac{D+L}{q_a}$$

The allowable bearing pressure can be increased by 33% when aside from the service loads, wind and other lateral loads (transient loads) are considered.

$$A_{req} = \frac{(D+L+W)}{1.33q_a} \quad \text{or} \quad \frac{D+L+E}{1.33q_a}$$

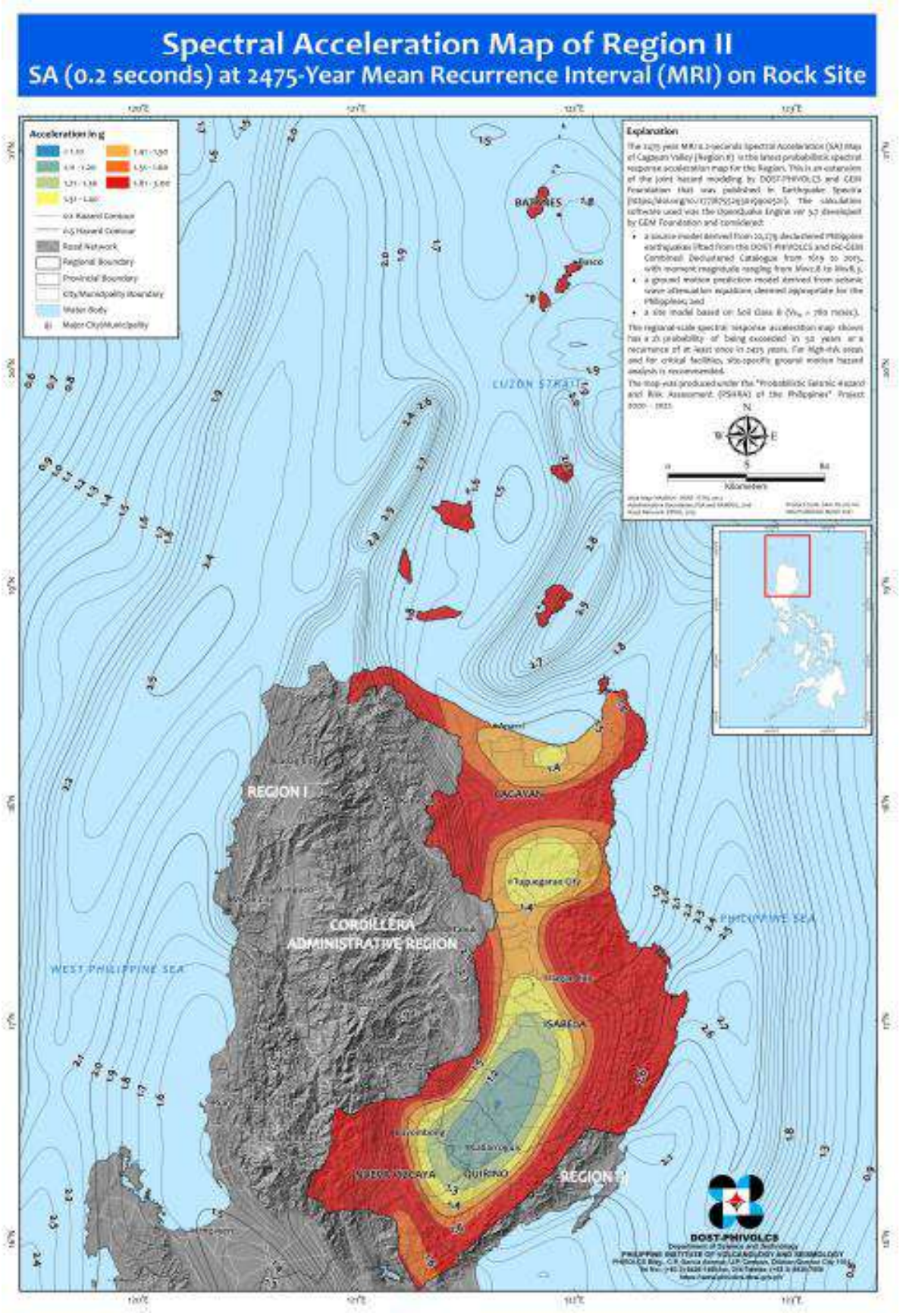

Spectral Acceleration Map of Region II
SA (0.2 seconds) at 2475-Year Mean Recurrence Interval (MRI) on Rock Site
Acceleration in g
Explanation
BABUYAN
LUZON STRAIT
REGION I
CORDILLERA ADMINISTRATIVE REGION
CAGAYAN
ISABELA
QUIRINO
REGION II
WEST PHILIPPINE SEA
PHILIPPINE SEA
DOST-PHIVOLCS

Figure 1.

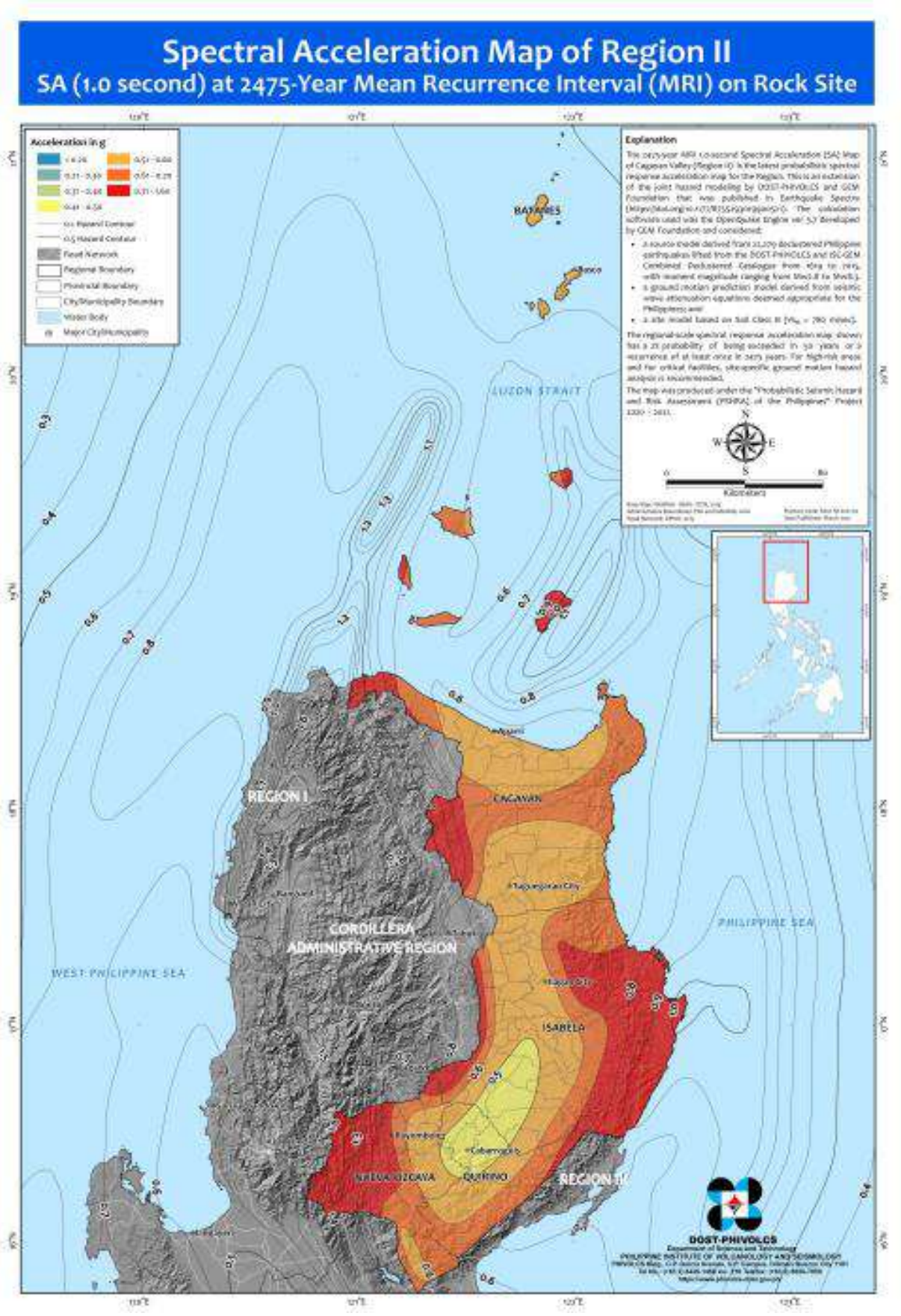

Spectral Acceleration Map of Region II
SA (1.0 second) at 2475-Year Mean Recurrence Interval (MRI) on Rock Site
Explanation
LUZON STRAIT
PHILIPPINE SEA
WEST PHILIPPINE SEA
REGION I
CAGAYAN
CORDILLERA ADMINISTRATIVE REGION
ISABELA
NUEVA VIZCAYA
QUIRINO
REGION III
DOST-PHIVOLCS

Figure 2

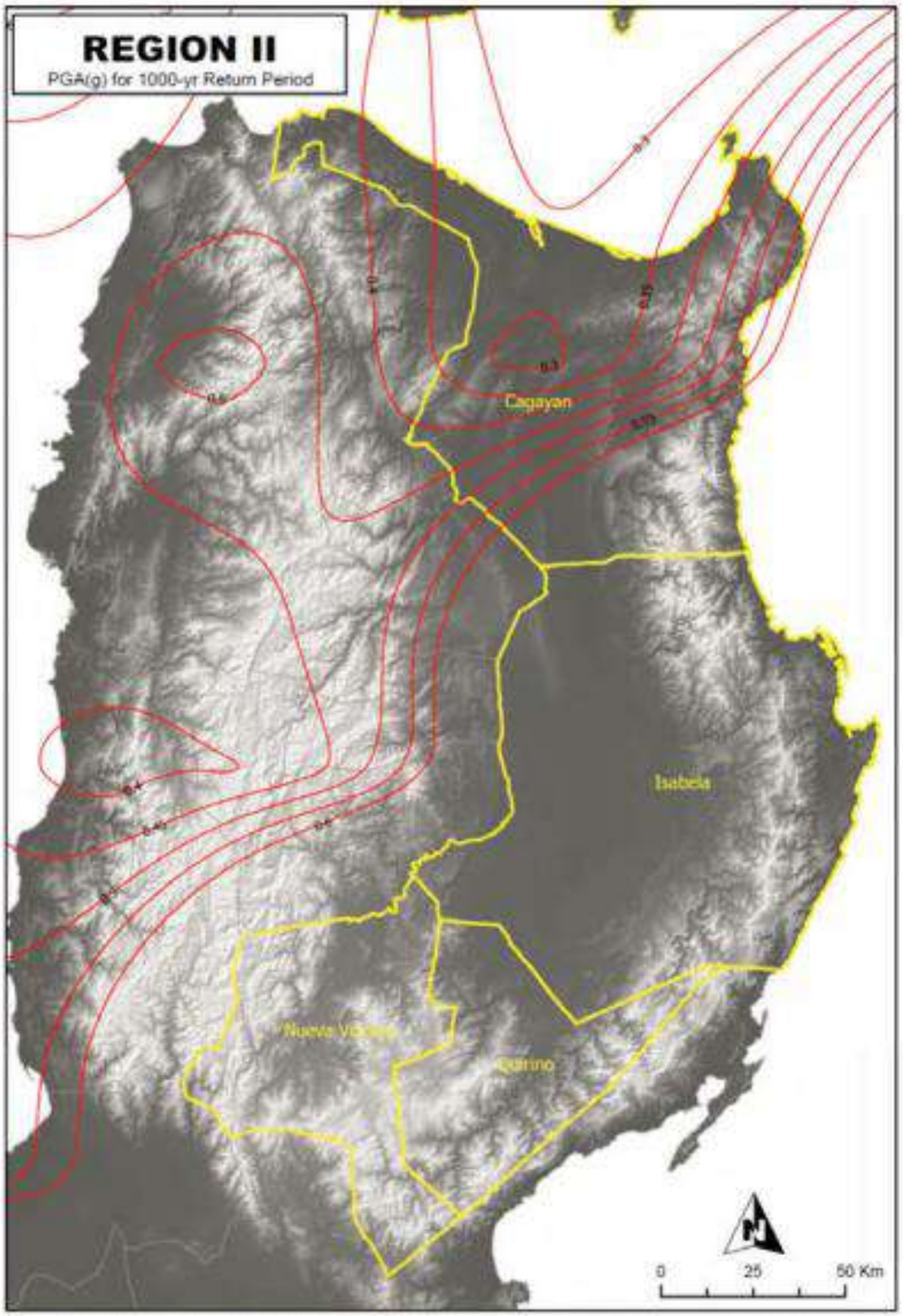


Figure 3B-3 Horizontal Peak Ground Acceleration Coefficient (*PGA*) for Level 1 Earthquake Ground Motion (Region II)

Figure 3.

6.2 Geotechnical Design Criteria

Soil conditions and local geological features affecting the site response for Borehole 1 are thick bedded of dense to very dense Silty Sandy GRAVEL OVERLAIN BY 3.00-meter thick (from natural grade line) of stiff to hard Sandy SILT, 1.00-meter lenses of medium dense of Silty SAND, 2.00-meter thick of dense to very dense Silty Gravelly SAND. And finally, 9.00-meter thick of very dense to dense to very dense Silty Sandy GRAVEL

The corresponding geotechnical design parameters are:

For Borehole 1:

PARAMETER	VALUE
Assumed founding depth for Shallow Footing	2.00 meters down from natural grade line
Adhesion between foundation base to soil materials (for lateral pressure)	C= 96 kpa
Poisson's Ratio, μ	0.30 to 0.35

Soil conditions and local geological features affecting the site response for Borehole 2 are thick bedded of very dense Silty Gravelly SAND OVERLAIN BY 2.00-meter thick (from natural grade line) of medium dense, 3.00-meter thick of dense Silty Gravelly SAND, 2.50-meter thick of dense to very dense Silty Sandy GRAVEL. And finally 7.50-meter thick of very dense Silty Gravelly SAND.

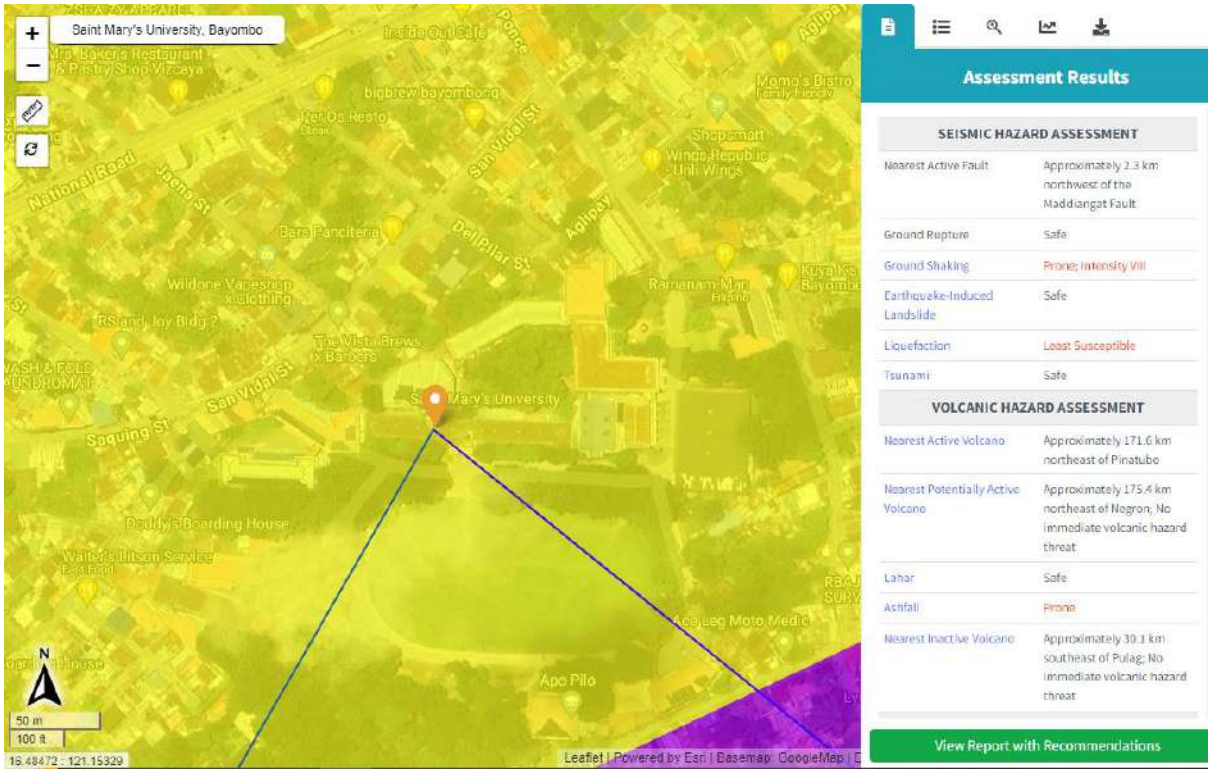
The corresponding geotechnical design parameters are:

For Borehole 2:

PARAMETER	VALUE
Assumed founding depth for Shallow Footing	2.00 meters down from natural grade line
Adhesion between foundation base to soil materials (for lateral pressure)	Ø = 36.25°
Poisson's Ratio, μ	-0.10 to 1.25

6.3 Potential Site Liquefaction

Based from the PHIVOLCS accredited site, HazardHunterPH, the site is LEAST SUSCEPTIBLE to site liquefaction.



6.4 Shallow Footing with NO SOIL REMEDIATION NEEDED AT THE SAID SITE, OPTION 1: USE ANY TYPE DEEP FOOTING is the most practical foundation options combined with robust grade beams.

Given the character of subsurface soil immediately underlain the proposed structure, the most economical and practical type of footing is a shallow footing with NO SOIL REMEDIATION NEEDED AT THE SAID, OPTION 1: USE ANY TYPE DEEP FOOTING combined with robust grade beams interconnecting the whole foundation system, but also depends on the following factors, re: structural configuration, gravitational & seismic loads, complexity of the soil profile, regional stratigraphy, structure and soil inter-action. See computation of allowable soil bearing pressure (asbp) and settlements at the Appendices.

6.5 For Eccentrically loaded Footing

If the supported column is not concentric with the footing area or if the column transmits at its juncture with the footing not only a vertical load but also a bending moment. In either case, the load effects at the footing base can be represented by the vertical load P and a bending moment M. The resulting bearing pressures are again assumed to be linearly distributed. As long as the eccentricity e = M/P does not exceed the kern distance k of the footing are, the usual flexure formula

$$Q_{max} = P/A +/- Mc/I$$
$$_{min}$$

permits the determination of the bearing pressures at the two extreme edges. The footing area is found by trial and error from the condition $q_{max} \leq q_a$.

6.6 For Eccentrically loaded Footing

If the supported column is not concentric with the footing area or if the column transmits at its juncture with the footing not only a vertical load but also a bending moment. In either case, the load effects at the footing base can be represented by the vertical load P and a bending moment M. The resulting bearing pressures are again assumed to be linearly distributed. As long as the eccentricity e = M/P does not exceed the kern distance k of the footing are, the usual flexure formula

6.7 Load Combinations using Strength Design or Load and Resistance Factor Design

6.7.1 Basic Load Combination

Structures and all portions thereof shall resist the most critical effects from the following combinations of factored loads:

1.4(D+F)
1.2(D+F+T)+1.6(L+H)+0.5($L_r$orR)
1.2D+1.6($L_r$orR)+(f_1Lor0.80W)
1.2D+1.6W+f_1L+0.5($L_r$orR)
1.2D+1.0E+f_1L
0.9D+1.6W+1.6H
0.9D+1.6E+1.6

6.7.2 Symbols and Notation

D=dead load
E=earthquake load
F=fluids load with well-defined pressures and maximum heights
H=lateral load from the combined soil & water pressures
L=live load
L_r=roof live load including any permitted live load reduction
P=ponding load
R=rain load on undefllected roof
T=self-straining force and effects arising from contraction and expansion resulting from temperature changes, shrinkage, moisture change, creep in component materials, movement due to differential settlement or combination thereof.
W=wind pressure load
F_1=1.0 for floors in places of pulic assembly, for live loads in excess of 4.8 kPa, and garage live load
=0.5 for other live loads

7.0 LIMITATION

The evaluation presented was generally based on the result of **the two boreholes** drilled at the site for the **CONSTRUCTION OF SAINT MARY'S UNIVERSITY** located at *3700 Bayombong, Nueva Vizcaya*.

The structural design of the sub-structure is beyond the scope of this report. The foregoing analyses, recommendations and conclusions have been based on the subsoil investigation data **AT or NEAR the two boreholes**, AND NOT TO BE INTERPRETED AS A WHOLE on the entire site lot, THUS, should any difference in the subsoil conditions be observed during construction, the undersigned shall be informed so that necessary corrections and changes in the recommendations can be made.

Extreme protection during excavation MUST BE EXERCISED to prevent soil softening due to high water level.

Correlated SPT Blow count for sand shear friction (ϕ) and clay cohesion value (c) were used in this computation.

ENGR. NOLI D. BANUA
PRC No.: 0045609
TIN No.: 154851714
PTR No.: 1547844
DATE: 01-12-24
PLACE: MANILA

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APPENDIX – 1.0

1.1 BOREHOLE LOCATION AND SITE LOCATION

1.2 SOIL STRATIFICATION

1.3 FINAL BORING LOG

1.4 LABORATORY TEST RESULTS

1.5 SOIL SAMPLE PICTURE & DRILL OPERATION

1.6 COMPUTATION OF ALLOWABLE SOIL BEARING CAPACITY AND TOTAL SETTLEMENTS

1.7 COMPUTATION OF ALLOWABLE PILE CAPACITY

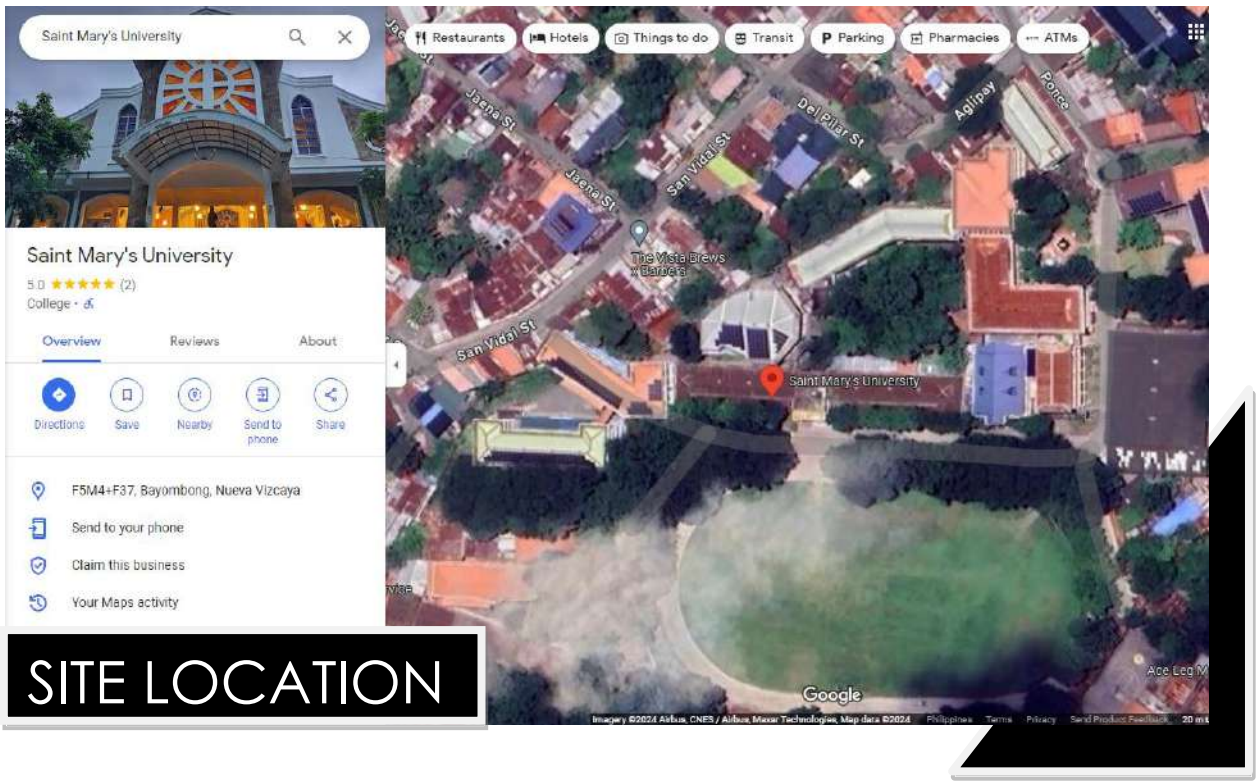
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APPENDIX – 1.1

BOREHOLE LOCATION AND SITE LOCATION



BOREHOLE LOCATION



SITE LOCATION

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APPENDIX – 1.2
SOIL STRATIFICATION

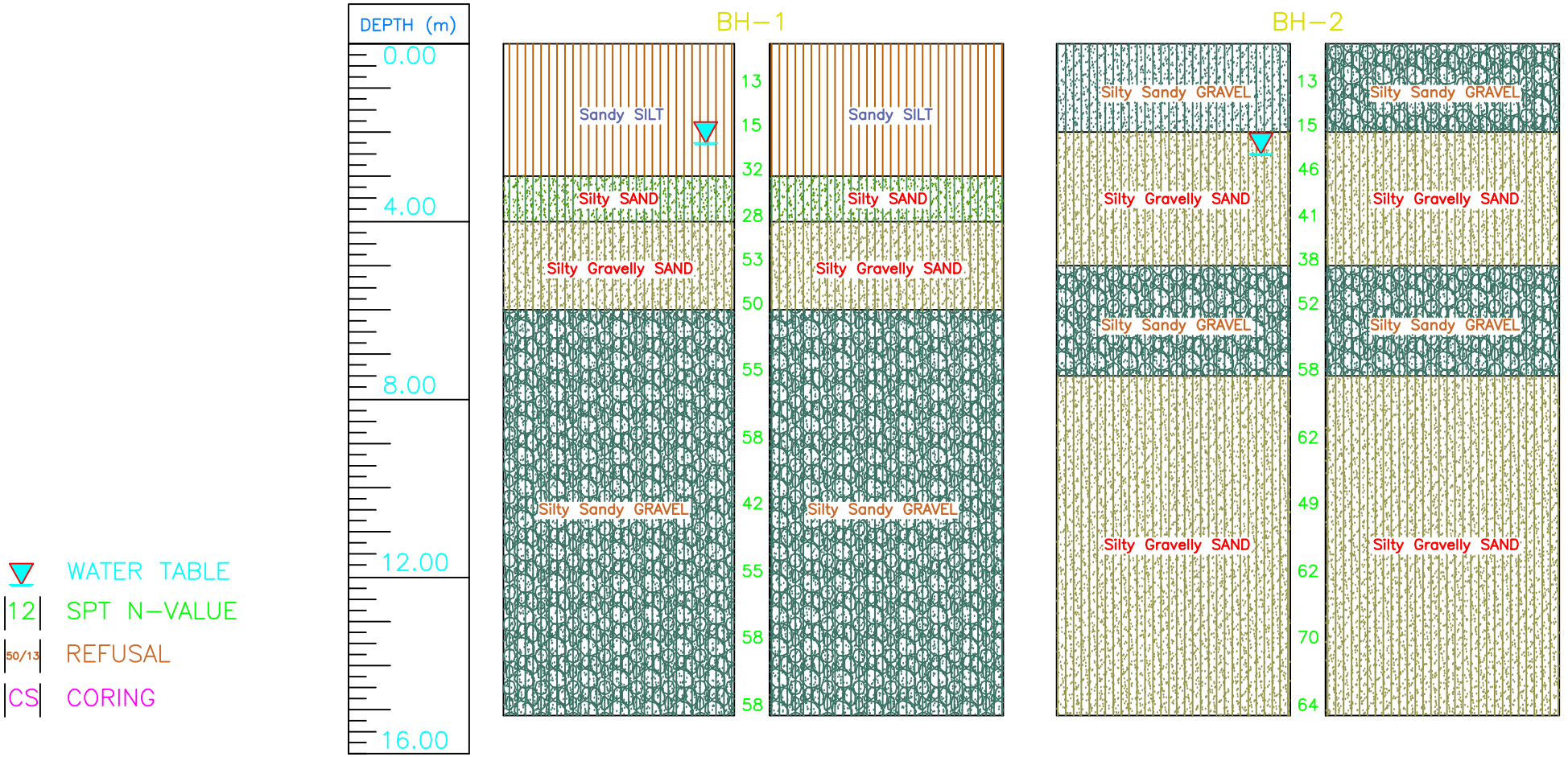


FIG. 02 SOIL STRATIFICATION

BAYOMBONG, NUEVA VISCAYA NTS

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APPENDIX – 1.3
FINAL BORING LOG

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT NAME: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

PROJECT LOCATION: 3700 Bayombong, Nueva Vizcaya

DATE DRILLED: JUNE 19, 2024
DATE FINISHED: JUNE 19, 2024
DRILL RIG TYPE: MANUAL DRILLING RIG

BOREHOLE NO.: 1
BOREHOLE DEPTH: 15.00 m
WATER TABLE: 2.35 m

DEPTH, m	SAMPLE NO.	% RECOVERY	R.Q.D	LOG SYMBOL	CLASSIFICATION	DESCRIPTION	SPT BLOWS 15	15	15	SPT N-VALUE	SPT GRAPH 10 20 30 40 50	MC	ATTERBERG LIMITS LL %	PI %	SIEVE ANALYSIS % PASSING SIEVE NO. 1	3/4	1/2	4	10	40	100	200
						GROUND SURFACE																
1	SS-1	100					5	6	7	**13**												
						GROUND WATER TABLE																
2	SS-2	95			ML	Sandy SILT, brownish gray; very fine to fine sand; traces of fine sub-angular to sub-rounded gravel; low plasticity; stiff to hard.	5	7	8	**15**		24.9	38	11	100	100	100	99	97	88	63	49
3	SS-3	82					14	15	17	**32**		21.8	42	13	100	100	95	90	84	79	62	51
4	SS-4	70			SM	Silty SAND, gray; medium to fine grained; traces of fine sub-angular to sub-rounded gravel; non-plastic fines; medium dense.	16	13	15	**28**		9.6		NP	100	100	100	90	85	57	19	12
5	SS-5	70				Silty Gravelly SAND, gray; fine to medium grained; medium to coarse sub-angular to sub-rounded gravel; non-plastic fines; dense to very dense.	13	29	24	**53**												
6	SS-6	100					15	27	23	**50**		8.0		NP	100	81	68	63	55	33	15	10
7																						
	SS-7	65			GM	Silty Sandy GRAVEL, gray; fine to medium sub-angular to sub-rounded gravel; medium to coarse sand; non-plastic fines; very dense.	13	28	27	**55**												
8																						
9	SS-8	89					21	29	29	**58**		4.9		NP	100	88	58	37	26	16	12	11

*** CONTINUATION OF BH-1 AT NEXT PAGE ***

LEGEND	TYPE OF SAMPLING	CBG GEOTECHNICAL TESTING SERVICES
LL-Liquid Limit PL-Plastic Limit RQD-Rock Quality Designation MC-Moisture Content WT-Water Table NP-No Plasticity * -Insufficient for Test	Split-Spoon Sample Core Sample Wash Sample Water Table	Encoded by: G. P. Panigo-os, Technical Manager Approved by: Engr. Noel D. Banua, Head of Engineering Department

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT NAME: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

PROJECT LOCATION: 3700 Bayombong, Nueva Vizcaya

DATE DRILLED: JUNE 19, 2024
DATE FINISHED: JUNE 19, 2024
DRILL RIG TYPE: MANUAL DRILLING RIG

BOREHOLE NO.: 1
BOREHOLE DEPTH: 15.00 m
WATER TABLE: 2.35 m

DEPTH, m	SAMPLE NO.	% RECOVERY	R.Q.D	LOG SYMBOL	CLASSIFICATION	DESCRIPTION	SPT BLOWS 15	15	15	SPT N-VALUE	SPT GRAPH 10	20	30	40	50	MC	ATTERBERG LIMITS LL %	PI %	SIEVE ANALYSIS % PASSING SIEVE NO. 1	3/4	1/2	4	10	40	100	200
						GROUND SURFACE																				
10	SS-9	85				Silty Sandy GRAVEL, gray; fine to coarse sub-angular to sub-rounded gravel; coarse to medium sand; non-plastic fines; dense to very dense.	16	18	24	**42**																
11																										
12	SS-10	67			GM		17	23	32	**55**						6.5		NP	100	71	67	50	39	21	13	10
13	SS-11	62				Silty Sandy GRAVEL, gray; medium to coarse sub-angular to sub-rounded gravel; fine to medium sand; non-plastic fines; dense to very dense.	16	27	31	**58**																
14																										
15	SS-12	71					25	25	33	**58**						9.8		NP	100	83	67	61	53	34	20	13
16																										
17																										
18																										

END OF BH-1 @ 15.00 m

LEGEND	TYPE OF SAMPLING	CBG GEOTECHNICAL TESTING SERVICES
LL-Liquid Limit PL-Plastic Limit RQD-Rock Quality Designation MC-Moisture Content WT-Water Table NP-No Plasticity * -Insufficient for Test	Split-Spoon Sample Core Sample Wash Sample Water Table	Encoded by: G. P. Panigo-os, Technical Manager Approved by: Engr. Noel D. Banua, Head of Engineering Department

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT NAME: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

PROJECT LOCATION: 3700 Bayombong, Nueva Vizcaya

DATE DRILLED: JUNE 19, 2024
DATE FINISHED: JUNE 19, 2024
DRILL RIG TYPE: MANUAL DRILLING RIG

BOREHOLE NO.: 2
BOREHOLE DEPTH: 15.00 m
WATER TABLE: 2.15 m

DEPTH, m	SAMPLE NO.	% RECOVERY	R.Q.D	LOG SYMBOL	CLASSIFICATION	DESCRIPTION	SPT BLOWS 15	15	15	SPT N-VALUE	SPT GRAPH 10 20 30 40 50	MC	ATTERBERG LIMITS LL %	PI %	SIEVE ANALYSIS % PASSING SIEVE NO. 1	3/4	1/2	4	10	40	100	200
						GROUND SURFACE																
1	SS-1	100			GM	Silty Sandy GRAVEL, gray; medium to coarse sub-angular to sub-rounded gravel; coarse to fine sand; non-plastic fines; medium dense.	5	6	7	**13**												
						GROUND WATER TABLE																
2	SS-2	100					5	7	8	**15**		5.4		NP	100	83	77	55	38	25	17	14
3	SS-3	92			SM	Silty Gravelly SAND, gray; fine to medium grained; medium to fine sub-angular to sub-rounded gravel; non-plastic fines; dense.	19	21	25	**46**		7.6		NP	100	100	89	58	32	20	13	10
4	SS-4	84					21	18	23	**41**		8.6		NP	100	100	88	68	39	23	14	11
5	SS-5	67					11	16	22	**38**												
6	SS-6	100			GM	Silty Sandy GRAVEL, gray; coarse to fine sub-angular to sub-rounded gravel; medium to coarse sand; non-plastic fines; dense to very dense.	22	25	27	**52**		6.6		NP	100	83	75	50	32	19	13	11
7	SS-7	100					19	27	31	**58**												
8					SM	Silty Gravelly SAND, gray; medium to coarse grained; medium to fine sub-angular to sub-rounded gravel; non-plastic fines; very dense.																
9	SS-8	80					28	30	32	**62**		10.0		NP	100	100	92	69	42	24	15	11

*** CONTINUATION OF BH-2 AT NEXT PAGE ***

LEGEND	TYPE OF SAMPLING	CBG GEOTECHNICAL TESTING SERVICES
LL-Liquid Limit PL-Plastic Limit RQD-Rock Quality Designation MC-Moisture Content WT-Water Table NP-No Plasticity * -Insufficient for Test	Split-Spoon Sample Core Sample Wash Sample Water Table	Encoded by: G. P. Panigo-os, Technical Manager Approved by: Engr. Noel D. Banua, Head of Engineering Department

FINAL BOREHOLE LOG AND SUMMARY OF TEST RESULTS

PROJECT NAME: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

PROJECT LOCATION: 3700 Bayombong, Nueva Vizcaya

DATE DRILLED: JUNE 19, 2024
DATE FINISHED: JUNE 19, 2024
DRILL RIG TYPE: MANUAL DRILLING RIG

BOREHOLE NO.: 2
BOREHOLE DEPTH: 15.00 m
WATER TABLE: 2.15 m

DEPTH, m	SAMPLE NO.	% RECOVERY	R.Q.D	LOG SYMBOL	CLASSIFICATION	DESCRIPTION	SPT BLOWS 15	15	15	SPT N-VALUE	SPT GRAPH 10	20	30	40	50	MC	ATTERBERG LIMITS LL %	PI %	SIEVE ANALYSIS % PASSING SIEVE NO. 1	3/4	1/2	4	10	40	100	200
						GROUND SURFACE																				
10	SS-9	64				Silty Gravelly SAND, gray; fine to medium grained; medium to fine sub-angular to sub-rounded gravel; non-plastic fines; dense to very dense.	36	26	23	**49**																
11																										
12	SS-10	71			SM		19	27	35	**62**						15.3		NP	100	100	94	84	78	56	35	24
13	SS-11	55				Silty Gravelly SAND, gray; medium to coarse grained; medium to fine sub-angular to sub-rounded gravel; non-plastic fines; very dense.	28	33	37	**70**																
14																										
15	SS-12	60					32	26	38	**64**						8.0		NP	100	100	89	71	41	22	13	10
16																										
17																										
18																										

END OF BH-2 @ 15.00 m

LEGEND	TYPE OF SAMPLING	CBG GEOTECHNICAL TESTING SERVICES
LL-Liquid Limit PL-Plastic Limit RQD-Rock Quality Designation MC-Moisture Content WT-Water Table NP-No Plasticity * -Insufficient for Test	Split-Spoon Sample Core Sample Wash Sample Water Table	Encoded by: G. P. Panigo-os, Technical Manager Approved by: Engr. Mark D. Banua, Head of Engineering Department

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APPENDIX – 1.4
LABORATORY TEST RESULTS

NDB ENGINEERING CONSULTANCY

CIVIL - STRUCTURAL - GEOTECHNICAL - PLUMBING - SANITARY

242 Pahati Street,Balut, Tondo, Manila

DPWH/BRS Accredited Testing Laboratory

PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

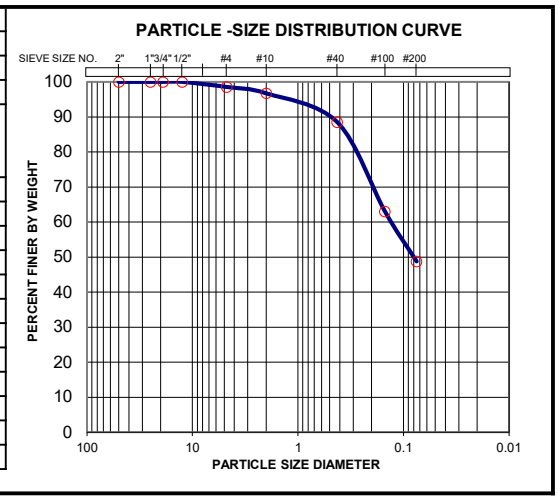
LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-2 **DEPTH:** 1.55 - 2.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare	155.32	Original Wt		138.70
Dry Soil + Wt. Of Tare	127.70	Oven-Dry Wt.		111.08
Wt. Of Tare	16.62	Dry Washed Weight		56.92
		Moisture Content		24.86

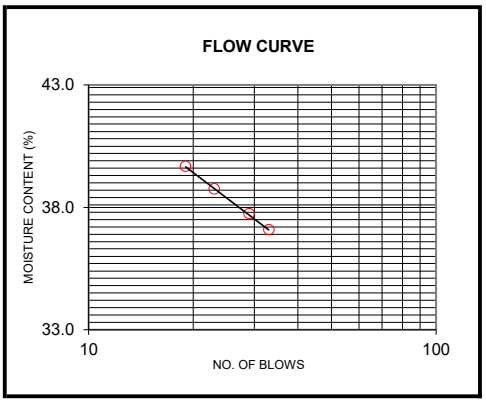
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	0.00	0.00	100.00	100
#4	4.75	1.60	1.44	98.56	99
#10	2.0	1.99	1.79	96.77	97
#40	0.425	9.21	8.29	88.48	88
#100	0.15	28.30	25.48	63.00	63
#200	0.075	15.82	14.24	48.76	49
PAN					
WASH LOSS		54.16	48.76		
TOTAL		111.08			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

	LIQUID LIMIT				PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE	20.98	21.29	20.00	20.27	18.21	19.54
WT. OF DRY SOIL + TARE	17.03	17.24	16.40	16.35	15.75	16.74
WATER CONTENT	3.95	4.05	3.60	3.92	2.46	2.80
TARE NO.	J14	A1	W13	E7	O3	W8
TARE WT.	6.38	6.51	7.11	6.47	6.71	6.71
WT. OF DRY SOIL	10.65	10.73	9.29	9.88	9.04	10.03
MOISTURE CONTENT, %	37.1	37.7	38.8	39.7	27.2	27.9
NO. OF BLOWS	33	29	23	19	AVERAGE	27.6
LIQUID LIMIT	38.4					

LIQUID LIMIT:	38.4
PLASTIC LIMIT:	27.6
PLASTICITY INDEX:	10.8
SOIL DESCRIPTION:	Sandy SILT
GROUP SYMBOL	ML
COLOR	brownish gray
TESTED BY:	J. B. Quiboy Jr.
CERTIFIED BY:	G. P. Banigo-os



NDB ENGINEERING CONSULTANCY

CIVIL - STRUCTURAL - GEOTECHNICAL - PLUMBING - SANITARY

242 Pahati Street,Balut, Tondo, Manila

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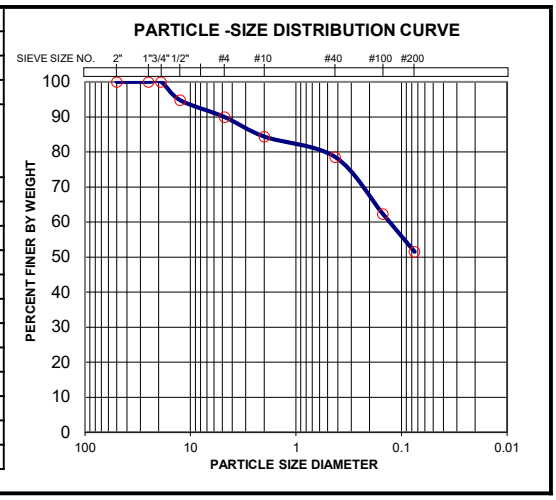
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-3 **DEPTH:** 2.55 - 3.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

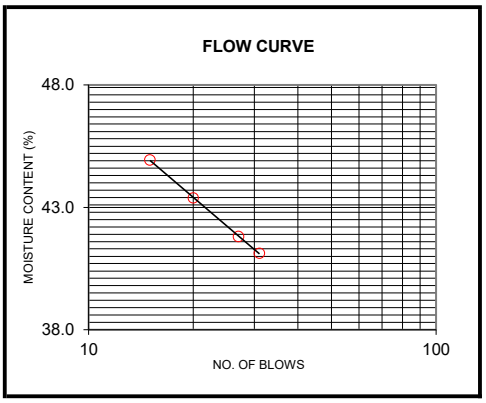
Wet Soil + Wt. Of Tare		124.36	Original Wt		107.39
Dry Soil + Wt. Of Tare		105.13	Oven-Dry Wt.		88.16
Wt. Of Tare		16.97	Dry Washed Weight		42.76
			Moisture Content		21.81
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	4.61	5.23	94.77	95
#4	4.75	4.25	4.82	89.95	90
#10	2.0	4.89	5.55	84.40	84
#40	0.425	5.17	5.86	78.54	79
#100	0.15	14.30	16.22	62.32	62
#200	0.075	9.54	10.82	51.50	51
PAN					
WASH LOSS		45.40	51.50		
TOTAL		88.16			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE	19.93	20.86	19.78	19.92	17.72	18.39
WT. OF DRY SOIL + TARE	16.04	16.70	15.75	15.84	15.13	15.91
WATER CONTENT	3.89	4.16	4.03	4.08	2.59	2.48
TARE NO.	C11	L4	U1	T10	F3	O12
TARE WT.	6.58	6.75	6.46	6.76	6.37	7.30
WT. OF DRY SOIL	9.46	9.95	9.29	9.08	8.76	8.61
MOISTURE CONTENT, %	41.1	41.8	43.4	44.9	29.6	28.8
NO. OF BLOWS	31	27	20	15	AVERAGE	29.2
LIQUID LIMIT	42.2					

LIQUID LIMIT:	42.2
PLASTIC LIMIT:	29.2
PLASTICITY INDEX:	13.0
SOIL DESCRIPTION:	Sandy SILT
GROUP SYMBOL	ML
COLOR	brownish gray
TESTED BY:	J. B. Quiboy Jr.
CERTIFIED BY:	G. P. Banigo-os



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PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

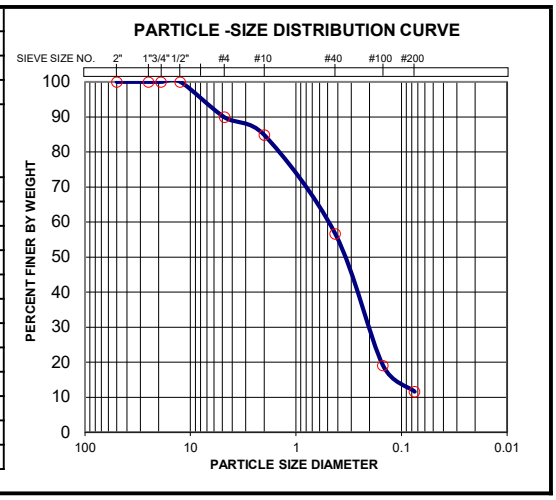
LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-4 **DEPTH:** 3.55 - 4.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare	112.76	Original Wt		96.24
Dry Soil + Wt. Of Tare	104.32	Oven-Dry Wt.		87.80
Wt. Of Tare	16.52	Dry Washed Weight		77.63
		Moisture Content		9.61

SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	0.00	0.00	100.00	100
#4	4.75	8.86	10.09	89.91	90
#10	2.0	4.43	5.05	84.86	85
#40	0.425	24.76	28.20	56.66	57
#100	0.15	33.00	37.59	19.08	19
#200	0.075	6.58	7.49	11.58	12
PAN					
WASH LOSS		10.17	11.58		
TOTAL		87.80			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

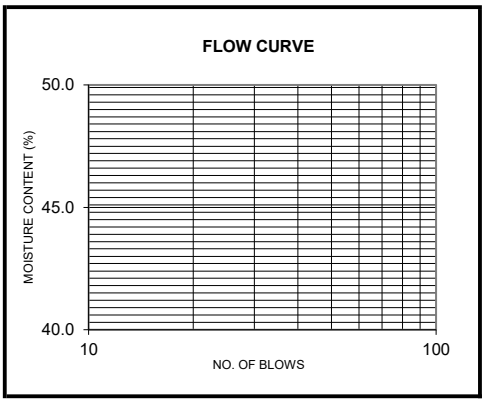
SOIL DESCRIPTION: Silty SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



NDB ENGINEERING CONSULTANCY

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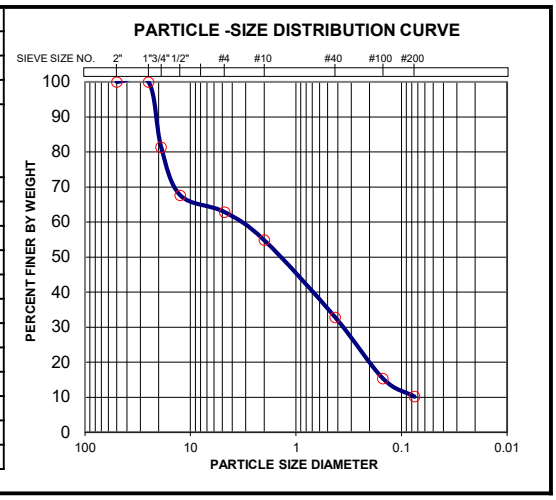
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-6 **DEPTH:** 5.55 - 6.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		138.95	Original Wt		121.78
Dry Soil + Wt. Of Tare		129.95	Oven-Dry Wt.		112.78
Wt. Of Tare		17.17	Dry Washed Weight		101.30
			Moisture Content		7.98
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	20.96	18.58	81.42	81
1/2"	12.50	15.53	13.77	67.64	68
#4	4.75	5.37	4.76	62.88	63
#10	2.0	9.05	8.02	54.86	55
#40	0.425	24.92	22.10	32.76	33
#100	0.15	19.67	17.44	15.32	15
#200	0.075	5.80	5.14	10.18	10
PAN					
WASH LOSS		11.48	10.18		
TOTAL		112.78			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

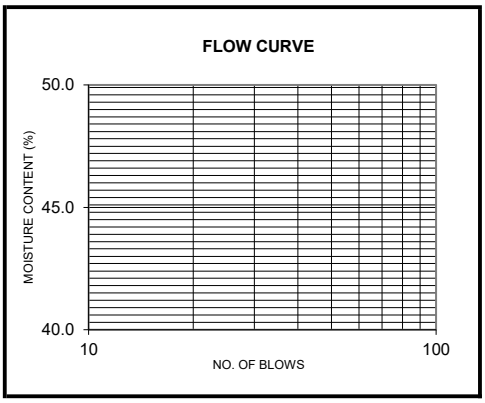
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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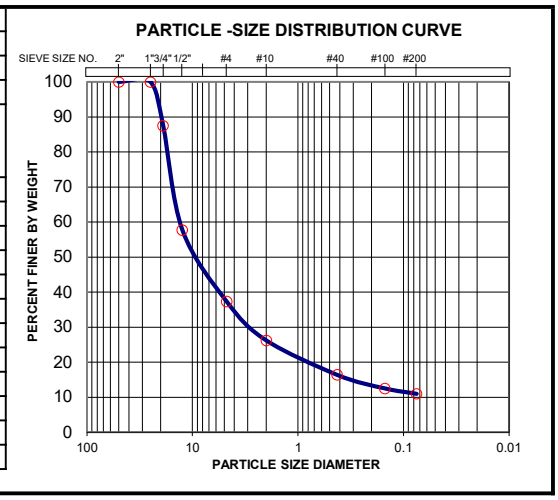
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-8 **DEPTH:** 8.55 - 9.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		199.51	Original Wt		182.86
Dry Soil + Wt. Of Tare		191.03	Oven-Dry Wt.		174.38
Wt. Of Tare		16.65	Dry Washed Weight		155.18
			Moisture Content		4.86
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	21.75	12.47	87.53	88
1/2"	12.50	52.02	29.83	57.70	58
#4	4.75	35.52	20.37	37.33	37
#10	2.0	19.32	11.08	26.25	26
#40	0.425	17.17	9.85	16.40	16
#100	0.15	6.83	3.92	12.48	12
#200	0.075	2.57	1.47	11.01	11
PAN					
WASH LOSS		19.20	11.01		
TOTAL		174.38			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

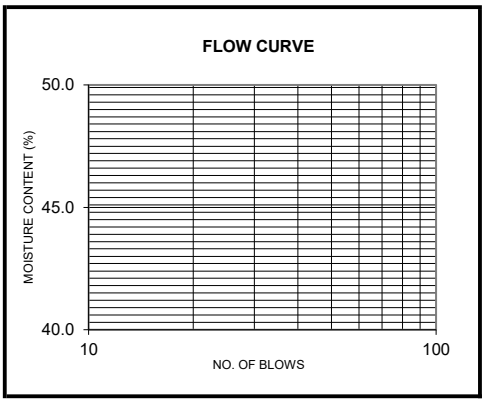
SOIL DESCRIPTION: Silty Sandy GRAVEL

GROUP SYMBOL GM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

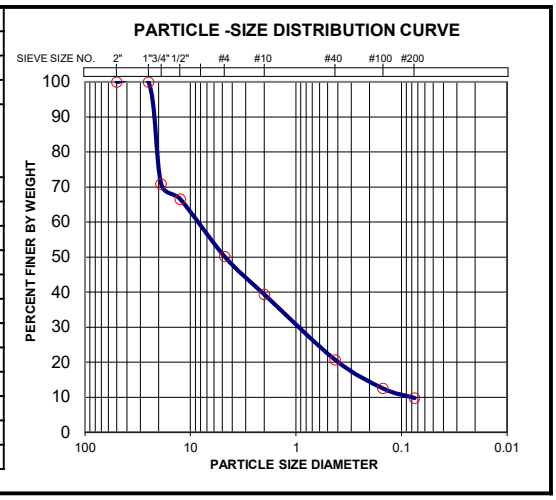
LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-10 **DEPTH:** 11.55 - 12.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare	165.21	Original Wt		148.79
Dry Soil + Wt. Of Tare	156.10	Oven-Dry Wt.		139.68
Wt. Of Tare	16.42	Dry Washed Weight		126.04
		Moisture Content		6.52

SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	40.65	29.10	70.90	71
1/2"	12.50	6.07	4.35	66.55	67
#4	4.75	22.86	16.37	50.19	50
#10	2.0	15.15	10.85	39.34	39
#40	0.425	26.07	18.66	20.68	21
#100	0.15	11.35	8.13	12.55	13
#200	0.075	3.89	2.78	9.77	10
PAN					
WASH LOSS		13.64	9.77		
TOTAL		139.68			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

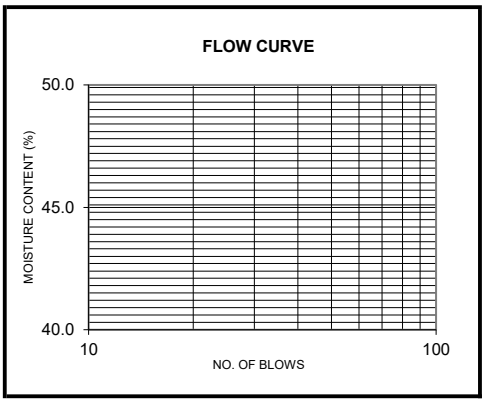
SOIL DESCRIPTION: Silty Sandy GRAVEL

GROUP SYMBOL GM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



NDB ENGINEERING CONSULTANCY

CIVIL - STRUCTURAL - GEOTECHNICAL - PLUMBING - SANITARY

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PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

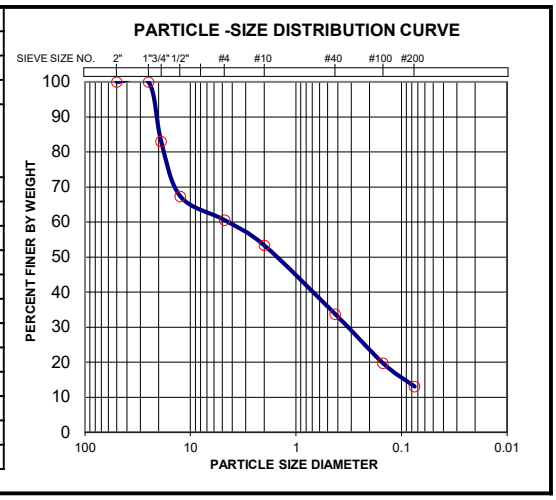
LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-1 SS-12 **DEPTH:** 14.55 - 15.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare	156.54	Original Wt		139.43
Dry Soil + Wt. Of Tare	144.12	Oven-Dry Wt.		127.01
Wt. Of Tare	17.11	Dry Washed Weight		110.41
		Moisture Content		9.78

SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	21.56	16.98	83.02	83
1/2"	12.50	19.88	15.65	67.37	67
#4	4.75	8.65	6.81	60.56	61
#10	2.0	9.10	7.16	53.40	53
#40	0.425	24.99	19.68	33.72	34
#100	0.15	17.77	13.99	19.73	20
#200	0.075	8.46	6.66	13.07	13
PAN					
WASH LOSS		16.60	13.07		
TOTAL		127.01			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

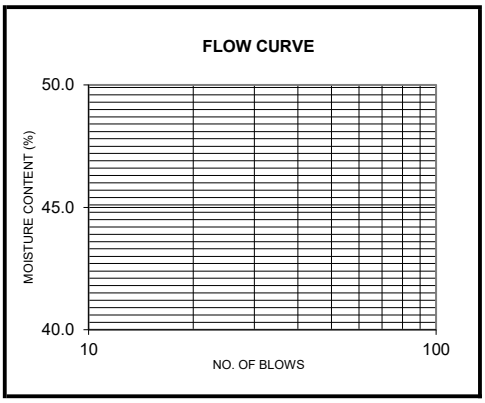
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



NDB ENGINEERING CONSULTANCY

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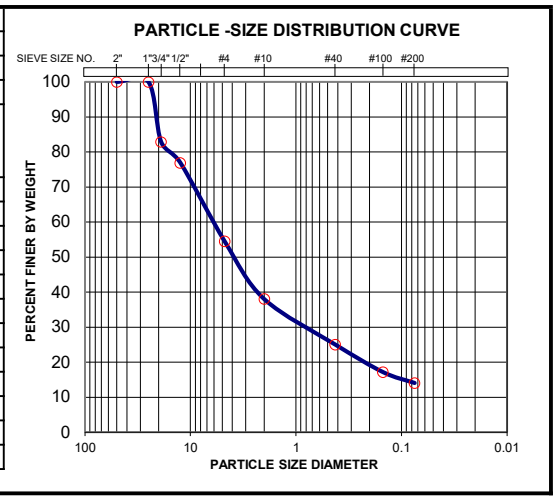
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-2 **DEPTH:** 1.55 - 2.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		178.12	Original Wt		161.05
Dry Soil + Wt. Of Tare		169.88	Oven-Dry Wt.		152.81
Wt. Of Tare		17.07	Dry Washed Weight		131.31
			Moisture Content		5.39
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	26.16	17.12	82.88	83
1/2"	12.50	9.17	6.00	76.88	77
#4	4.75	34.13	22.33	54.54	55
#10	2.0	25.20	16.49	38.05	38
#40	0.425	19.93	13.04	25.01	25
#100	0.15	11.90	7.79	17.22	17
#200	0.075	4.82	3.15	14.07	14
PAN					
WASH LOSS		21.50	14.07		
TOTAL		152.81			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

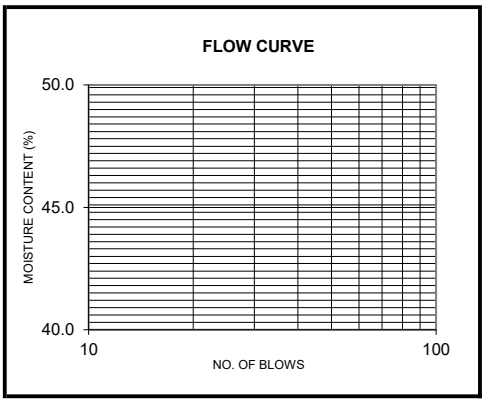
SOIL DESCRIPTION: Silty Sandy GRAVEL

GROUP SYMBOL GM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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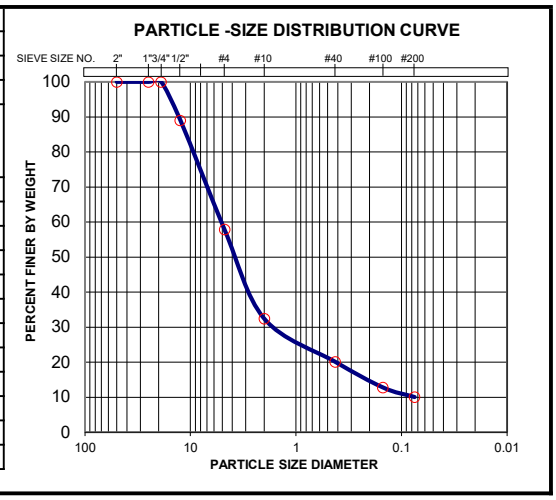
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-3 **DEPTH:** 2.55 - 3.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		166.49	Original Wt		149.29
Dry Soil + Wt. Of Tare		155.91	Oven-Dry Wt.		138.71
Wt. Of Tare		17.20	Dry Washed Weight		124.78
			Moisture Content		7.63
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	15.22	10.97	89.03	89
#4	4.75	43.25	31.18	57.85	58
#10	2.0	35.26	25.42	32.43	32
#40	0.425	17.11	12.34	20.09	20
#100	0.15	10.15	7.32	12.77	13
#200	0.075	3.79	2.73	10.04	10
PAN					
WASH LOSS		13.93	10.04		
TOTAL		138.71			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

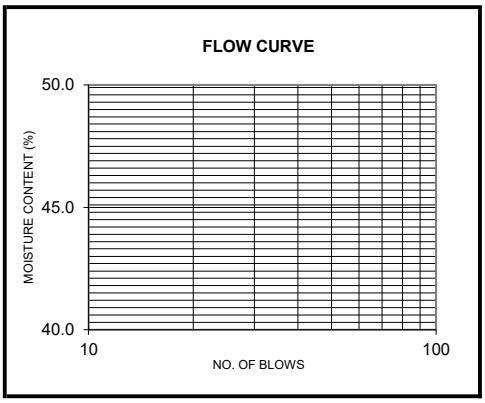
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



NDB ENGINEERING CONSULTANCY

CIVIL - STRUCTURAL - GEOTECHNICAL - PLUMBING - SANITARY

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PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

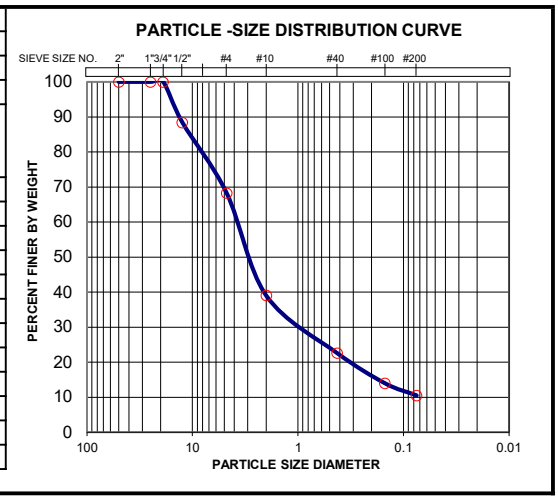
LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-4 **DEPTH:** 3.55 - 4.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare	160.22	Original Wt		143.18
Dry Soil + Wt. Of Tare	148.86	Oven-Dry Wt.		131.82
Wt. Of Tare	17.04	Dry Washed Weight		117.95
		Moisture Content		8.62

SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	15.22	11.55	88.45	88
#4	4.75	26.58	20.16	68.29	68
#10	2.0	38.57	29.26	39.03	39
#40	0.425	21.65	16.42	22.61	23
#100	0.15	11.37	8.63	13.98	14
#200	0.075	4.56	3.46	10.52	11
PAN					
WASH LOSS		13.87	10.52		
TOTAL		131.82			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

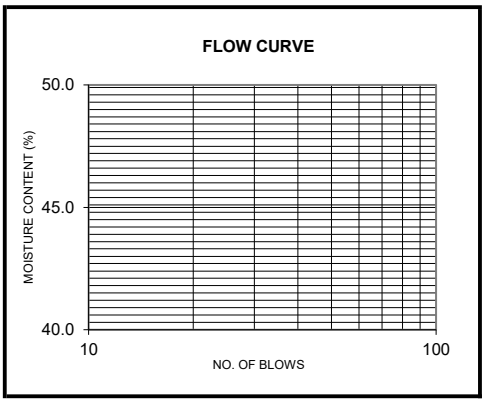
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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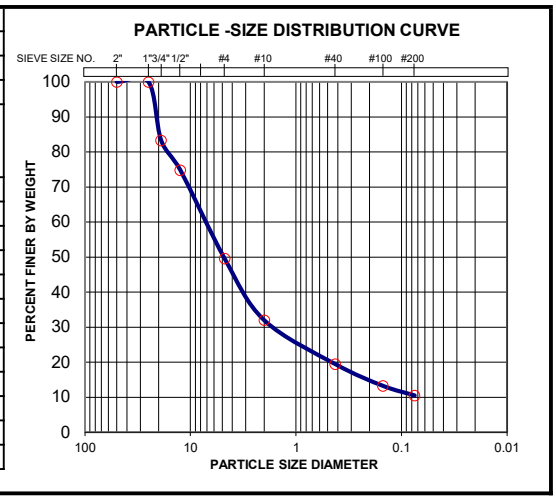
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-6 **DEPTH:** 5.55 - 6.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		177.61	Original Wt		160.77
Dry Soil + Wt. Of Tare		167.62	Oven-Dry Wt.		150.78
Wt. Of Tare		16.84	Dry Washed Weight		134.92
			Moisture Content		6.63
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	25.19	16.71	83.29	83
1/2"	12.50	12.81	8.50	74.80	75
#4	4.75	37.97	25.18	49.62	50
#10	2.0	26.55	17.61	32.01	32
#40	0.425	18.90	12.53	19.47	19
#100	0.15	9.35	6.20	13.27	13
#200	0.075	4.15	2.75	10.52	11
PAN					
WASH LOSS		15.86	10.52		
TOTAL		150.78			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

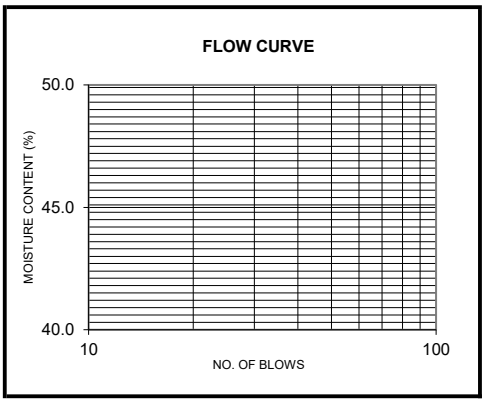
SOIL DESCRIPTION: Silty Sandy GRAVEL

GROUP SYMBOL GM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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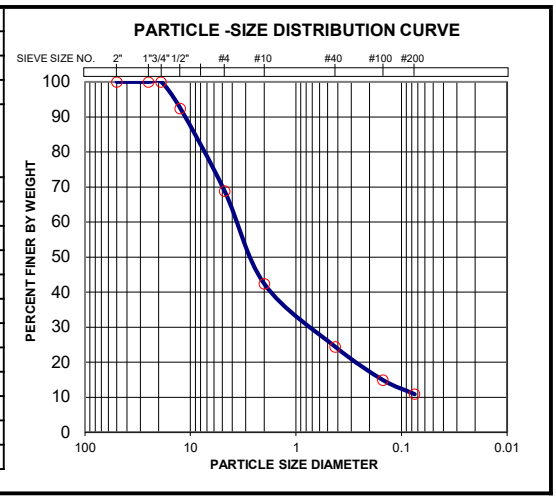
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-8 **DEPTH:** 8.55 - 9.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		162.29	Original Wt		145.59
Dry Soil + Wt. Of Tare		149.04	Oven-Dry Wt.		132.34
Wt. Of Tare		16.70	Dry Washed Weight		117.88
			Moisture Content		10.01
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	10.03	7.58	92.42	92
#4	4.75	31.21	23.58	68.84	69
#10	2.0	34.98	26.43	42.41	42
#40	0.425	23.80	17.98	24.42	24
#100	0.15	12.56	9.49	14.93	15
#200	0.075	5.30	4.00	10.93	11
PAN					
WASH LOSS		14.46	10.93		
TOTAL		132.34			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

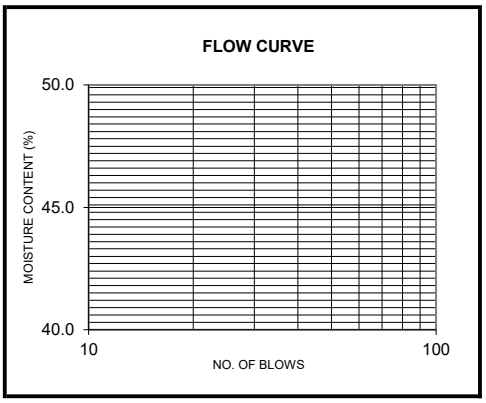
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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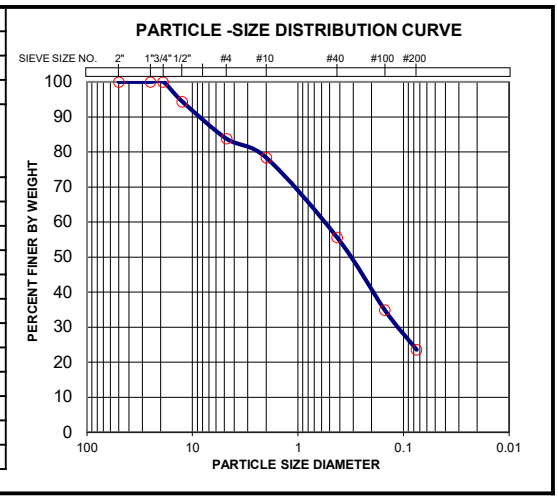
LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-10 **DEPTH:** 11.55 - 12.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare	156.42	Original Wt		139.99
Dry Soil + Wt. Of Tare	137.88	Oven-Dry Wt.		121.45
Wt. Of Tare	16.43	Dry Washed Weight		92.84
		Moisture Content		15.27

SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	6.83	5.62	94.38	94
#4	4.75	12.84	10.57	83.80	84
#10	2.0	6.54	5.38	78.42	78
#40	0.425	27.74	22.84	55.58	56
#100	0.15	25.19	20.74	34.84	35
#200	0.075	13.70	11.28	23.56	24
PAN					
WASH LOSS		28.61	23.56		
TOTAL		121.45			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

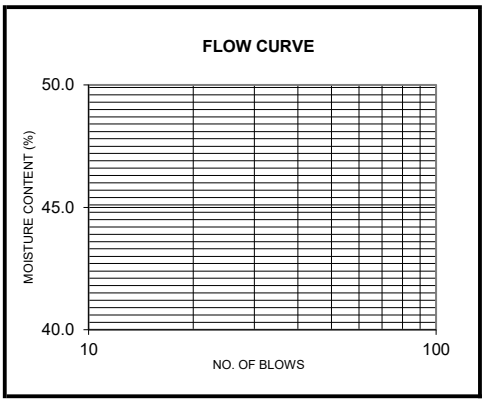
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



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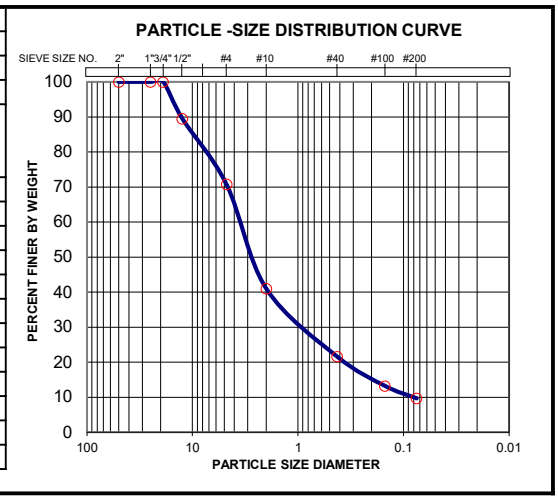
PROJECT: CONSTRUCTION OF SAINT MARY'S UNIVERSITY

LOCATION: 3700 Bayombong, Nueva Viscaya

SAMPLE NO.: BH-2 SS-12 **DEPTH:** 14.55 - 15.00 m **DATE:** June 22, 2024

SIEVE ANALYSIS (ASTM D 422)

Wet Soil + Wt. Of Tare		155.54	Original Wt		138.73
Dry Soil + Wt. Of Tare		145.22	Oven-Dry Wt.		128.41
Wt. Of Tare		16.81	Dry Washed Weight		115.93
			Moisture Content		8.04
SIEVE SIZE		WT. RETAINED (gm)	PERCENT RETAINED	PERCENT PASSING 10TH	PERCENT PASSING (%)
INCH / NO.	DIAMETER (mm)				
2"	50.0	0.00	0.00	100.00	100
1"	25.0	0.00	0.00	100.00	100
3/4	19.0	0.00	0.00	100.00	100
1/2"	12.50	13.49	10.51	89.49	89
#4	4.75	24.07	18.74	70.75	71
#10	2.0	38.20	29.75	41.00	41
#40	0.425	24.93	19.41	21.59	22
#100	0.15	10.72	8.35	13.24	13
#200	0.075	4.52	3.52	9.72	10
PAN					
WASH LOSS		12.48	9.72		
TOTAL		128.41			



LIQUID LIMIT & PLASTIC LIMIT (ASTM D 4318-05)

LIQUID LIMIT					PLASTIC LIMIT	
TRIAL NO.	1	2	3	4	1	2
WT. OF WET SOIL + TARE						
WT. OF DRY SOIL + TARE						
WATER CONTENT						
TARE NO.						
TARE WT.						
WT. OF DRY SOIL						
MOISTURE CONTENT, %						
NO. OF BLOWS					AVERAGE	
LIQUID LIMIT						

LIQUID LIMIT:

PLASTIC LIMIT: NP

PLASTICITY INDEX:

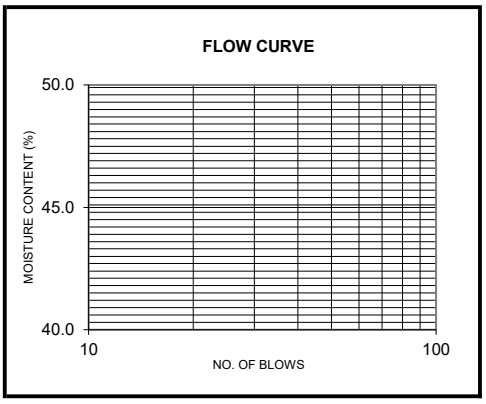
SOIL DESCRIPTION: Silty Gravelly SAND

GROUP SYMBOL SM

COLOR gray

TESTED BY: J. B. Quiboy Jr.

CERTIFIED BY: G. P. Banigo-os



CGB Geotechnical Testing Services
Lot 38-C-2 #61 Kambal Road., Guitnang Bayan 1, San Mateo Rizal
Mobile: 0936-0864365 Email: cgbgeotechnical2022@gmail.com

APPENDIX – 1.5

SOIL SAMPLE PICTURE & DRILL OPERATION



Drilling at BH-1



Drilling at BH-1



Drilling at BH-2



Drilling at BH-2

CGB Geotechnical Testing Services
Lot 38-C-2 #61 Kambal Road., Guitnang Bayan 1, San Mateo Rizal
Mobile: 0936-0864365 Email: cgbgeotechnical2022@gmail.com

APPENDIX – 1.6

COMPUTATION OF ALLOWABLE SOIL BEARING CAPACITY

DESIGN OF SHALLOW FOOTING (For CONSTRUCTION OF SAIN MARY'S UNIVESITY)...square & combined footings (with breadth,B)

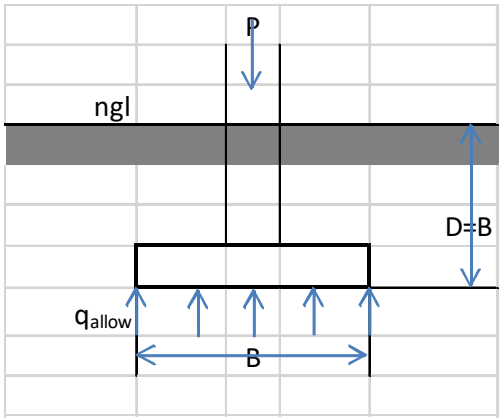


Figure 1 Dimension of Footing

DESIGN PARAMETERS AT DEPTH OF 2.00 meters

Cohesion value, (C):

Strength of Clay		
Penetration Resistance N (Blows/305 mm)	**Unconfined Compressive Strength (kN/m^2)**	**Consistency**
0-2	<12	Very soft
2-4	12 - 24	Soft
4-8	24 - 48	Medium
8-15	48 - 96	Stiff
15-30	96 - 190	Very stiff
>30	>190	Hard

Table 1: Approximate relation between SPT N-value (n) and Cohesion value c)

Angle of Friction, (Ø):

Value of N	Relative Condition of Soil	Approximate Value of Angle of Friction, φ
0 to 4	Very poor	< 28
4 to 10	Poor	28 - 30
10 to 30	Fair	30 - 36
30 to 50	Good	36 - 41
above 50	Very good	> 41

Table 2: Approximate relation between SPT N-value (n) and Cohesionless value Ø)

Void Ratio, (e) :

$$S \cdot e := w \cdot G_s$$ **Eq. 1**

where:
- e = Void ratio
- w = Water/Moisture content
- G_s = Specic Gravity of Soil
- γ_w = Unit Weight of Water

Unit Weight of Soil, (γ):

$$:= \frac{(G_s + e) \cdot \gamma_w}{1 + e}$$ **Eq. 2**

Effective Unit Weight of Soil, (γ_{sat}):

$$\gamma_{eff} := \gamma - \gamma_w$$ **Eq. 3**

ULTIMATE BEARING CAPACITY:

$$q_u := 1.3c'\cdot N_c + q\cdot N_q + 0.4\cdot \gamma \cdot B\cdot N_\gamma$$ =Square Foundation

*Terzaghi, (1943)

where:

q_u	=ultimate bearing pressure, kN per s.m.
c'	= Cohesion of Soil (Since the soil profile is cohesionless, c = 0)
γ	= Unit weight of Soil
q	= γ^*D_f (Equivalent surcharge)
D_f	= Foundation Depth
N_c,N_q,N_γ	= Bearing capacity factors that are nondimensional and are only functions of the soil friction angle, ϕ
B	= Base of the foundation

Bearing Capacity Factors:

Table 1.b Terzaghi's Bearing Capacity Factors - Nc, Nq and Ny

ϕ (deg)	Nc	Nq	Ny	ϕ (deg)	Nc	Nq	Ny
0	5.70	1.00	0.00	26	27.09	14.21	9.84
1	6.00	1.10	0.01	27	29.24	15.90	11.60
2	6.30	1.22	0.04	28	31.61	17.81	13.70
3	6.62	1.35	0.06	29	34.24	19.98	16.18
4	6.97	1.49	0.10	30	37.16	22.46	19.13
5	7.34	1.64	0.14	31	40.41	25.28	22.65
6	7.73	1.81	0.20	32	44.04	28.52	26.87
7	8.15	2.00	0.27	33	48.09	32.23	31.94
8	8.60	2.21	0.35	34	52.64	36.50	38.04
9	9.09	2.44	0.44	35	57.75	41.44	45.41
10	9.61	2.69	0.56	36	63.53	47.16	54.36
11	10.16	2.98	0.69	37	70.01	53.80	65.27
12	10.76	3.29	0.85	38	77.50	61.55	78.61
13	11.41	3.63	1.04	39	85.97	70.61	95.03
14	12.11	4.02	1.26	40	95.66	81.27	115.31
15	12.86	4.45	1.52	41	106.81	93.85	140.51
16	13.68	4.92	1.82	42	119.67	108.75	171.99
17	14.60	5.45	2.18	43	134.58	126.50	211.56
18	15.12	6.04	2.59	44	151.95	147.74	261.60
19	16.56	6.70	3.07	45	172.28	173.28	325.34
20	17.69	7.44	3.64	46	196.22	204.19	407.11
21	18.92	8.26	4.31	47	224.55	241.80	512.84
22	20.27	9.19	5.09	48	258.28	287.85	650.67
23	21.75	10.23	6.00	49	298.71	344.63	831.99
24	23.36	11.40	7.08	50	347.50	415.40	1072.80
25	25.13	12.72	8.34				

If the soil is cohesionless

*Kumbojkar, (1993)

Therefore, $N_c = 0$

Ultimate Bearing Capacity:

if the soil profile is cohesionless, c = 0.

Therefore,

$$qu_s := q \cdot N_q + 0.4 \cdot \cdot B \cdot N$$ =Square Foundation

*Terzaghi, (1943)

Allowable Bearing Capacity

Factor of safety:

$$q_{all} := \frac{qu}{FS}$$

where:

q_{all} = Net stress increase in soil

qu = Ultimate bearig capacity

FS = Factor of safety

BH-1

SUMMARY FOR BASE 2.00 meters

Table 1.1 Design Parameters of Soil

Base x Length B x L (m)	SPT N-value, Nave	Water content, w	Void ratio, e	Cohesion, c', (kN/m^2)	Unit Weight, γ (kN/m^3)
1.50 x 1.50	28.200	24.90%	0.660	178.720	9.752
2.00 x 2.00	31.833			201.487	
2.50 x 2.50	31.833			201.487	
3.00 x 3.00	35.143			222.230	
3.50 x 3.50	38.000			240.133	
4.00 x 4.00	38.000			240.133	

Table 1.2 Bearing Capacity Factor & Ultimate Bearing Cap

Base, (m)	Bearing Capacity Factc			Unit Weight, γ (kN/m^3)	Equivalent Surcharge, q (kPa)	Ultimate Bearing Capacity, qus (kPa)	Allowable Bearing Capacity, qall (kPa)
	Nc	Nq	Nγ				
1.50	5.7	1.000	0.000	9.752	19.504	1324.315	441.438
2.00	5.7	1.000	0.000			1493.017	497.672
2.50	5.7	1.000	0.000			1493.017	497.672
3.00	5.7	1.000	0.000			1646.721	548.907
3.50	5.7	1.000	0.000			1779.388	593.129
4.00	5.7	1.000	0.000			1779.388	593.129

Table 1.3 Allowable Bearing Capacity from N-value using 25.4mm settlement			
Base, (m)	SPT N-value, N_{ave}	Tolerable Settlement, s (mm)	**Allowable Bearing Capacity, q_a (kPa)**
1.50	28.20	25.400	**375.391**
2.00	31.83	25.400	**386.411**
2.50	31.83	25.400	**364.830**
3.00	35.14	25.400	**387.256**
3.50	38.00	25.400	**406.968**
4.00	38.00	25.400	**398.249**

BH-2

SUMMARY FOR DEPTH 2.00meters

Table 1.1 Design Parameters of Soil					
Base x Length B x L (m)	SPT N-value, N_{ave}	Water content, w	Void ratio, e	Angle of Friction, ϕ	Unit Weight, γ_{eff} (kN/m^3)
1.50 x 1.50	30.600	5.40%	0.146	38.210	14.555
2.00 x 2.00	34.167	5.40%	0.146	39.458	14.555
2.50 x 2.50	34.167	5.40%	0.146	39.458	14.555
3.00 x 3.00	37.571	5.40%	0.146	40.649	14.555
3.50 x 3.50	40.625	5.40%	0.146	41.718	14.555
4.00 x 4.00	40.625	5.40%	0.146	41.718	14.555

Table 1.2 Bearing Capacity Factor & Ultimate Bearing Capacity							
Base, (m)	Bearing Capacity Factor			Unit Weight, γeff (kN/m^3)	Equivalent Surcharge, q (kPa)	Ultimate Bearing Capacity, q_{us} (kPa)	Allowable Bearing Capacity, q_{all} (kPa)
	Nc	Nq	Nγ				
1.50	77.50	61.55	78.61	14.555	29.110	2478.204	**826.068**
2.00	85.97	70.61	95.03	14.555	29.110	3161.964	**1053.988**
2.50	85.97	70.61	95.03	14.555	29.110	3438.594	**1146.198**
3.00	106.81	93.85	140.51	14.555	29.110	5186.084	**1728.695**
3.50	119.67	108.75	171.99	14.555	29.110	6670.305	**2223.435**
4.00	119.67	108.75	171.99	14.555	29.110	7170.964	**2390.321**

Table 1.3 Allowable Bearing Capacity from N-value using 25.4mm settlement			
Base, (m)	SPT N-value, N_{ave}	Tolerable Settlement, s (mm)	**Allowable Bearing Capacity, q_a (kPa)**
1.50	30.60	25.400	**203.670**
2.00	34.17	25.400	**207.367**
2.50	34.17	25.400	**195.786**
3.00	37.57	25.400	**207.009**
3.50	40.63	25.400	**217.541**
4.00	40.63	25.400	**212.880**

CONCLUSION : Based from the above matrix, **ALL the computed ALLOWABLE SOIL BEARING PRESSURE (ASBP) ARE EXCEEDED the specified allowable soil bearing pressure (ASBP) of 96 kPa (based from the DPWH and Dep-Ed shallow footing for 3-to 4-sty school bldg.) for the *CONSTRUCTION OF SAIN MARY'S UNIVERSITY.***

RECOMMENDATION:

NO SOIL REMEDIATION IS NEEDED AT THE SAID SITE,

OPTION 1: USE ANY TYPE DEEP FOOTING.

REFERENCES :

a : A Short Course in Foundation Engineering by N.E. Simons and B.K. Menzies, c. Butterworth & Co. Ltd., 1977

** : Principles of Geotechnical Engineering. 4th Ed. by Braja M. Das*

***: Foundation Design Principles and Practices, 2nd Ed. by Donald P. Coduto*

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APPENDIX – 1.7

COMPUTATION OF ALLOWABLE PILE CAPACITY

OPTION 1. DEEP PILE FOOTING: Based from the critical data near o at BH-01

I. BOREPILE FOOTING:

FOR PILE DIAMETER OF D1= 0.60 METER & DEPTH OF 15.00 METERS

A. Side Friction in Sand (Qs) & Clay (Qc):

Beta factor (β): empirical factor that incorporates of both friction angle and lateral stress:

	Depth (D)	Depth (d)	z	L	ysat/yeff	c	σ	qs	qc	D1	S	n-value	qb	Shaft Resistance (kN)	Bearing Resitance (kN)
1	**3.000**	**1.500**	2.250	1.500	**0.000**	**149.267**	0.000	0.000	82.097	**0.600**	2.827	**0.000**	0.000	**232.123**	**0.000**
2	**4.500**	**3.000**	3.750	1.500	**13.479**	**0.000**	50.546	12.637	0.000	**0.600**	2.827	**28.000**	1.680	**35.729**	**0.000**
3	**6.000**	**4.500**	5.250	1.500	**13.715**	**0.000**	72.004	18.001	0.000	**0.600**	2.827	**51.000**	3.060	**50.896**	**0.000**
4	**7.500**	**6.000**	6.750	1.500	**14.728**	**0.000**	99.414	24.854	0.000	**0.600**	2.827	**55.000**	3.300	**70.272**	**933.053**
5	**9.000**	**7.500**	8.250	1.500	**14.728**	**0.000**	121.506	30.377	0.000	**0.600**	2.827	**58.000**	3.480	**85.888**	**983.947**
6	**10.500**	**9.000**	9.750	1.500	**14.187**	**0.000**	138.323	34.581	0.000	**0.600**	2.827	**42.000**	2.520	**97.775**	**712.513**
7	**12.000**	**10.500**	11.250	1.500	**14.187**	**0.000**	159.604	39.901	0.000	**0.600**	2.827	**55.000**	3.300	**112.817**	**933.053**
8	**13.500**	**12.000**	12.750	1.500	**13.188**	**0.000**	168.147	42.037	0.000	**0.600**	2.827	**58.000**	3.480	**118.856**	**983.947**
9	**15.000**	**13.500**	14.250	1.500	**13.188**	**0.000**	187.929	46.982	0.000	**0.600**	2.827	**58.000**	3.480	**132.839**	**983.947**

OPTION 1. DEEP PILE FOOTING: Based from the critical data near o at BH-01

I. BOREPILE FOOTING:

FOR PILE DIAMETER OF D2= 0.70 METER & DEPTH OF 15.00 METERS

A. Side Friction in Sand (Qs) & Clay (Qc):

Beta factor (β): empirical factor that incorporates of both friction angle and lateral stress:

	Depth (D)	Depth (d)	z	L	ysat/yeff	c	σ	qs	qc	D2	S	n-value	qb	Shaft Resistance (kN)	Bearing Resitance (kN)
1	**3.000**	**1.500**	2.250	1.500	**0.000**	**149.267**	0.000	0.000	82.097	**0.700**	3.299	**0.000**	0.000	**270.810**	**0.000**
2	**4.500**	**3.000**	3.750	1.500	**13.479**	**0.000**	50.546	12.637	0.000	**0.700**	3.299	**28.000**	1.680	**41.684**	**0.000**
3	**6.000**	**4.500**	5.250	1.500	**13.715**	**0.000**	72.004	18.001	0.000	**0.700**	3.299	**51.000**	3.060	**59.379**	**0.000**
4	**7.500**	**6.000**	6.750	1.500	**14.728**	**0.000**	99.414	24.854	0.000	**0.700**	3.299	**55.000**	3.300	**81.984**	**1269.989**
5	**9.000**	**7.500**	8.250	1.500	**14.728**	**0.000**	121.506	30.377	0.000	**0.700**	3.299	**58.000**	3.480	**100.202**	**1339.261**
6	**10.500**	**9.000**	9.750	1.500	**14.187**	**0.000**	138.323	34.581	0.000	**0.700**	3.299	**42.000**	2.520	**114.071**	**969.810**
7	**12.000**	**10.500**	11.250	1.500	**14.187**	**0.000**	159.604	39.901	0.000	**0.700**	3.299	**55.000**	3.300	**131.620**	**1269.989**
8	**13.500**	**12.000**	12.750	1.500	**13.188**	**0.000**	168.147	42.037	0.000	**0.700**	3.299	**58.000**	3.480	**138.665**	**1339.261**
9	**15.000**	**13.500**	14.250	1.500	**13.188**	**0.000**	187.929	46.982	0.000	**0.700**	3.299	**58.000**	3.480	**154.979**	**1339.261**

OPTION 1. DEEP PILE FOOTING: Based from the critical data near o at BH-01

I. BOREPILE FOOTING:

FOR PILE DIAMETER OF D3= 0.80 METER & DEPTH OF 15.00 METERS

A. Side Friction in Sand (Qs) & Clay (Qc):

Beta factor (β): empirical factor that incorporates of both friction angle and lateral stress:

	Depth (D)	Depth (d)	z	L	ysat/yeff	c	σ	qs	qc	D3	S	n-value	qb	Shaft Resistance (kN)	Bearing Resitance (kN)
1	**3.000**	**1.500**	2.250	1.500	**0.000**	**149.267**	0.000	0.000	82.097	**0.800**	3.770	**0.000**	0.000	**309.497**	**0.000**
2	**4.500**	**3.000**	3.750	1.500	**13.479**	**0.000**	50.546	12.637	0.000	**0.800**	3.770	**28.000**	1.680	**47.639**	**0.000**
3	**6.000**	**4.500**	5.250	1.500	**13.715**	**0.000**	72.004	18.001	0.000	**0.800**	3.770	**51.000**	3.060	**67.862**	**0.000**
4	**7.500**	**6.000**	6.750	1.500	**14.728**	**0.000**	99.414	24.854	0.000	**0.800**	3.770	**55.000**	3.300	**93.695**	**1658.761**
5	**9.000**	**7.500**	8.250	1.500	**14.728**	**0.000**	121.506	30.377	0.000	**0.800**	3.770	**58.000**	3.480	**114.517**	**1749.239**
6	**10.500**	**9.000**	9.750	1.500	**14.187**	**0.000**	138.323	34.581	0.000	**0.800**	3.770	**42.000**	2.520	**130.367**	**1266.690**
7	**12.000**	**10.500**	11.250	1.500	**14.187**	**0.000**	159.604	39.901	0.000	**0.800**	3.770	**55.000**	3.300	**150.423**	**1658.761**
8	**13.500**	**12.000**	12.750	1.500	**13.188**	**0.000**	168.147	42.037	0.000	**0.800**	3.770	**58.000**	3.480	**158.475**	**1749.239**
9	**15.000**	**13.500**	14.250	1.500	**13.188**	**0.000**	187.929	46.982	0.000	**0.800**	3.770	**58.000**	3.480	**177.119**	**1749.239**

OPTION 1. DEEP PILE FOOTING: Based from the critical data near o at BH-02

I. BOREPILE FOOTING:

FOR PILE DIAMETER OF D1= 0.60 METER & DEPTH OF 15.00 METERS

A. Side Friction in Sand (Qs):

Beta factor (β): empirical factor that incorporates of both friction angle and lateral stress:

	Depth (D)	Depth (d)	z	L	ysat/yeff	c	σ	qs	qc	D1	S	n-value	qb	Shaft Resistance (kN)	Bearing Resitance (kN)
1	**3.000**	**1.500**	2.250	1.500	**14.196**	**0.000**	31.941	7.985	0.000	**0.600**	2.827	**46.000**	2.760	**22.578**	**0.000**
2	**4.500**	**3.000**	3.750	1.500	**13.534**	**0.000**	50.753	12.688	0.000	**0.600**	2.827	**41.000**	2.460	**35.875**	**0.000**
3	**6.000**	**4.500**	5.250	1.500	**14.155**	**0.000**	74.314	18.578	0.000	**0.600**	2.827	**52.000**	3.120	**52.529**	**0.000**
4	**7.500**	**6.000**	6.750	1.500	**13.131**	**0.000**	88.634	22.159	0.000	**0.600**	2.827	**58.000**	3.480	**62.652**	**983.947**
5	**9.000**	**7.500**	8.250	1.500	**13.131**	**0.000**	108.331	27.083	0.000	**0.600**	2.827	**62.000**	3.720	**76.574**	**1051.805**
6	**10.500**	**9.000**	9.750	1.500	**11.803**	**0.000**	115.079	28.770	0.000	**0.600**	2.827	**49.000**	2.940	**81.345**	**831.265**
7	**12.000**	**10.500**	11.250	1.500	**11.803**	**0.000**	132.784	33.196	0.000	**0.600**	2.827	**62.000**	3.720	**93.859**	**1051.805**
8	**13.500**	**12.000**	12.750	1.500	**13.715**	**0.000**	174.866	43.717	0.000	**0.600**	2.827	**70.000**	4.200	**123.606**	**1187.522**
9	**15.000**	**13.500**	14.250	1.500	**13.715**	**0.000**	195.439	48.860	0.000	**0.600**	2.827	**64.000**	3.840	**138.148**	**1085.734**

OPTION 1. DEEP PILE FOOTING: Based from the critical data near o at BH-02

I. BOREPILE FOOTING:

FOR PILE DIAMETER OF D2= 0.70 METER & DEPTH OF 15.00 METERS

A. Side Friction in Sand (Qs):

Beta factor (β): empirical factor that incorporates of both friction angle and lateral stress:

	Depth (D)	Depth (d)	z	L	ysat/yeff	c	σ	qs	qc	D2	S	n-value	qb	Shaft Resistance (kN)	Bearing Resitance (kN)
1	**3.000**	**1.500**	2.250	1.500	**14.196**	**0.000**	31.941	7.985	0.000	**0.700**	3.299	**46.000**	2.760	**26.341**	**0.000**
2	**4.500**	**3.000**	3.750	1.500	**13.534**	**0.000**	50.753	12.688	0.000	**0.700**	3.299	**41.000**	2.460	**41.854**	**0.000**
3	**6.000**	**4.500**	5.250	1.500	**14.155**	**0.000**	74.314	18.578	0.000	**0.700**	3.299	**52.000**	3.120	**61.284**	**0.000**
4	**7.500**	**6.000**	6.750	1.500	**13.131**	**0.000**	88.634	22.159	0.000	**0.700**	3.299	**58.000**	3.480	**73.094**	**1339.261**
5	**9.000**	**7.500**	8.250	1.500	**13.131**	**0.000**	108.331	27.083	0.000	**0.700**	3.299	**62.000**	3.720	**89.337**	**1431.624**
6	**10.500**	**9.000**	9.750	1.500	**11.803**	**0.000**	115.079	28.770	0.000	**0.700**	3.299	**49.000**	2.940	**94.902**	**1131.445**
7	**12.000**	**10.500**	11.250	1.500	**11.803**	**0.000**	132.784	33.196	0.000	**0.700**	3.299	**62.000**	3.720	**109.503**	**1431.624**
8	**13.500**	**12.000**	12.750	1.500	**13.715**	**0.000**	174.866	43.717	0.000	**0.700**	3.299	**70.000**	4.200	**144.207**	**1616.349**
9	**15.000**	**13.500**	14.250	1.500	**13.715**	**0.000**	195.439	48.860	0.000	**0.700**	3.299	**64.000**	3.840	**161.172**	**1477.805**

OPTION 1. DEEP PILE FOOTING: Based from the critical data near o at BH-02

I. BOREPILE FOOTING:

FOR PILE DIAMETER OF D3= 0.80 METER & DEPTH OF 15.00 METERS

A. Side Friction in Sand (Qs):

Beta factor (β): empirical factor that incorporates of both friction angle and lateral stress:

	Depth (D)	Depth (d)	z	L	ysat/yeff	c	σ	qs	qc	D3	S	n-value	qb	Shaft Resistance (kN)	Bearing Resitance (kN)
1	**3.000**	**1.500**	2.250	1.500	**14.196**	**0.000**	31.941	7.985	0.000	**0.800**	3.770	**46.000**	2.760	**30.104**	**0.000**
2	**4.500**	**3.000**	3.750	1.500	**13.534**	**0.000**	50.753	12.688	0.000	**0.800**	3.770	**41.000**	2.460	**47.833**	**0.000**
3	**6.000**	**4.500**	5.250	1.500	**14.155**	**0.000**	74.314	18.578	0.000	**0.800**	3.770	**52.000**	3.120	**70.039**	**0.000**
4	**7.500**	**6.000**	6.750	1.500	**13.131**	**0.000**	88.634	22.159	0.000	**0.800**	3.770	**58.000**	3.480	**83.536**	**1749.239**
5	**9.000**	**7.500**	8.250	1.500	**13.131**	**0.000**	108.331	27.083	0.000	**0.800**	3.770	**62.000**	3.720	**102.099**	**1869.876**
6	**10.500**	**9.000**	9.750	1.500	**11.803**	**0.000**	115.079	28.770	0.000	**0.800**	3.770	**49.000**	2.940	**108.460**	**1477.805**
7	**12.000**	**10.500**	11.250	1.500	**11.803**	**0.000**	132.784	33.196	0.000	**0.800**	3.770	**62.000**	3.720	**125.146**	**1869.876**
8	**13.500**	**12.000**	12.750	1.500	**13.715**	**0.000**	174.866	43.717	0.000	**0.800**	3.770	**70.000**	4.200	**164.808**	**2111.150**
9	**15.000**	**13.500**	14.250	1.500	**13.715**	**0.000**	195.439	48.860	0.000	**0.800**	3.770	**64.000**	3.840	**184.197**	**1930.195**

SUMMARY FOR BOREHOLE 1

Diameter 0.60 meter						
	Soil Type	Depth, m	Skin Friction, fs (kN)	Total Skin Friction, Fs	Bearing Reaction, fb (kN)	Support Reaction, Rx (kN)
1	CLAY	from 1.50 down to 3.00	232.123	232.123	0.000	77.374
2	SAND	4.500	35.729	267.852	0.000	89.284
3	SAND	6.000	50.896	318.748	0.000	106.249
4	SAND	7.500	70.272	389.020	933.053	440.691
5	SAND	9.000	85.888	474.908	983.947	486.285
6	SAND	10.500	97.775	572.682	712.513	428.399
7	SAND	12.000	112.817	685.500	933.053	539.518
8	SAND	13.500	118.856	804.356	983.947	596.101
9	SAND	15.000	132.839	937.195	983.947	640.381

Diameter 0.70 meter						
	Soil Type	Depth, m	Skin Friction, fs (kN)	Total Skin Friction, Fs	Bearing Reaction, fb (kN)	Support Reaction, Rx (kN)
1	CLAY	from 1.50 down to 3.00	270.810	270.810	0.000	90.270
2	SAND	4.500	41.684	312.494	0.000	104.165
3	SAND	6.000	59.379	371.873	0.000	123.958
4	SAND	7.500	81.984	453.857	1269.989	574.615
5	SAND	9.000	100.202	554.059	1339.261	631.107
6	SAND	10.500	114.071	668.130	969.810	545.980
7	SAND	12.000	131.620	799.750	1269.989	689.913
8	SAND	13.500	138.665	938.415	1339.261	759.225
9	SAND	15.000	154.979	1093.394	1339.261	810.885

Diameter 0.80 meter						
	Soil Type	Depth, m	Skin Friction, fs (kN)	Total Skin Friction, Fs	Bearing Reaction, fb (kN)	Support Reaction, Rx (kN)
1	CLAY	from 1.50 down to 3.00	309.497	309.497	0.000	103.166
2	SAND	4.500	47.639	357.136	0.000	119.045
3	SAND	6.000	67.862	424.998	0.000	141.666
4	SAND	7.500	93.695	518.693	1658.761	725.818
5	SAND	9.000	114.517	633.210	1749.239	794.150
6	SAND	10.500	130.367	763.577	1266.690	676.756
7	SAND	12.000	150.423	914.000	1658.761	857.587
8	SAND	13.500	158.475	1072.474	1749.239	940.571
9	SAND	15.000	177.119	1249.593	1749.239	999.611

SUMMARY FOR BOREHOLE 2

Diameter 0.60 meter						
	Soil Type	Depth, m	Skin Friction, fs (kN)	Total Skin Friction, Fs	Bearing Reaction, fb (kN)	Support Reaction, Rx (kN)
1	SAND	from 1.50 down to 3.00	22.578	22.578	0.000	7.526
2	SAND	4.500	35.875	58.453	0.000	19.484
3	SAND	6.000	52.529	110.982	0.000	36.994
4	SAND	7.500	62.652	173.634	983.947	385.860
5	SAND	9.000	76.574	250.208	1051.805	434.004
6	SAND	10.500	81.345	331.553	831.265	387.606
7	SAND	12.000	93.859	425.412	1051.805	492.406
8	SAND	13.500	123.606	549.018	1187.522	578.847
9	SAND	15.000	138.148	687.165	1085.734	590.967

Diameter 0.70 meter						
	Soil Type	Depth, m	Skin Friction, fs (kN)	Total Skin Friction, Fs	Bearing Reaction, fb (kN)	Support Reaction, Rx (kN)
1	SAND	from 1.50 down to 3.00	26.341	26.341	0.000	8.780
2	SAND	4.500	41.854	68.195	0.000	22.732
3	SAND	6.000	61.284	129.479	0.000	43.160
4	SAND	7.500	73.094	202.573	1339.261	513.945
5	SAND	9.000	89.337	291.910	1431.624	574.511
6	SAND	10.500	94.902	386.812	1131.445	506.085
7	SAND	12.000	109.503	496.314	1431.624	642.646
8	SAND	13.500	144.207	640.521	1616.349	752.290
9	SAND	15.000	161.172	801.693	1477.805	759.833

Diameter 0.80 meter						
	Soil Type	Depth, m	Skin Friction, fs (kN)	Total Skin Friction, Fs	Bearing Reaction, fb (kN)	Support Reaction, Rx (kN)
1	SAND	from 1.50 down to 3.00	30.104	30.104	0.000	10.035
2	SAND	4.500	47.833	77.937	0.000	25.979
3	SAND	6.000	70.039	147.976	0.000	49.325
4	SAND	7.500	83.536	231.512	1749.239	660.250
5	SAND	9.000	102.099	333.611	1869.876	734.496
6	SAND	10.500	108.460	442.071	1477.805	639.959
7	SAND	12.000	125.146	567.216	1869.876	812.364
8	SAND	13.500	164.808	732.024	2111.150	947.725
9	SAND	15.000	184.197	916.221	1930.195	948.805

CONCLUSION : Based from the above matrix, the **computed allowable pile capacity can be used at or near the two boreholes** for the ***CONSTRUCTION OF SAINT MARY'S UNIVERSITY.***

RECOMMENDATION:

IF THE COMPUTED ALLOWABLE PILE CAPACITY IS LESS THAN THE REACTION LOADS FROM THE SUPERSTRUCTURE OF THE STRUCTURAL ANALYSIS MADE BY THE STRUCTURAL ENGINEER, THE FOLLOWING OPTIONS CAN BE MADE: (1) INCREASE THE DEPTH OF THE PILE WITH CORRESPONDING DIAMETER, (2) OR, USED GROUPED PILE.

REFERENCES :

a : A Short Course in Foundation Engineering by N.E. Simons and B.K. Menzies, c. Butterworth & Co. Ltd., 1977

** : Principles of Geotechnical Engineering. 4th Ed. by Braja M. Das*

***: Foundation Design Principles and Practices, 2nd Ed. by Donald P. Coduto*