MARIANO MARCOS STATE UNIVERSITY

Bids and Awards Committee

INVITATION TO MAKE AN OFFER: Negotiated Procurement

2022-031

THE PROJECT: Refurbishment of Supply and property Management Office
Project Location – MMSU FEM Hall, City of Batac
Number of Working Days: 50 calendar days
ABC: P838,871.84

1. The Mariano Marcos State University (MMSU), with offices at Quiling Sur, City of Batac, Ilocos Norte, invites the public to make an offer to furnish all labor, materials, tools and equipment necessary and proper for the implementation of the above Project as per approved designs, plans and drawings.

2. This process is in accordance with Section 53 of R.A. 9184, the Government Procurement reform Act and Section 53.9 of the Implementing Rules and Regulations where interested and qualified contractors are to submit proposals.

4. The offer must be in writing submitted at the address below not later than **5 days** together with the following documents:

   a) The amount of the offer in writing duly signed by the person making the offer, indicated in numbers and figures.
   b) The particulars of the offer as to labor, materials, tools, equipment and other work details.
   c) Documents in support of the legal, technical and financial capability of the person making the offer, which documents shall be confirmed and verified **(3 copies)**.

5. It is understood that any offer may be accepted or rejected, or the process invalidated, at any time prior to contract award, without liability to anyone.

6. Documents for this procurement may be secured from the MMSU BAC Secretariat at the address below or downloaded from the MMSU website or from the Philippine Government Electronic Procurement System (PhilGEPS) website.

7. For questions and inquiries, please write or email the University President, thru the BAC Chair, at the address indicated below.

Mariano Marcos State University
Quiling Sur, City of Batac
www.mmsu.edu.ph

November 23, 2022

NATHANIEL R. ALIBUYOG
BAC CHAIR

Received: _____ Received: _____ Received: _____

Republic of the Philippines
MARIANO MARCOS STATE UNIVERSITY
Batac, Ilocos Norte

PROJECT INFORMATION DOCUMENT

Project Title : Refurbishment of Supply and Property Management Office
Project Location : MMSU FEM Hall– City of Batac, Ilocos Norte

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GENERAL INSTRUCTIONS

The project calls for the furnishing of all materials, labor, tools and equipment needed for the refurbishment of Supply and Property Management Office. The proposed project is located at the MMSU FEM Hall, City of Batac, Ilocos Norte. The said project shall be done in strict conformity with the designs, plans, drawings and other details, as well as the specifications, this Project Information Document and other related contract documents prepared and approved for this project. It is highly recommended that the contractor shall conduct site inspection for them to have an idea on the existing condition of the building.

It also calls for the employment of men power with the appropriate skills and expertise to undertake the specific items of work and to enable the contractor to produce and deliver to the satisfaction of the owner the needed services and output required of this undertaking. The contractor shall provide a site engineer, electrical practitioner and shall have adequate and readily available construction equipment to be utilized during the construction activities.

General Instructions

The contractor shall ensure that the construction activities must not interfere, obstruct and disturb any on-going operation of the building and other facilities; hence, the contractor shall isolate the working area from the other portions of the building. In addition, the contractor shall be required to provide its own water and power supply system needed in the proper execution of the various works for the duration of the contract.

I. PAINTING WORKS

This item shall consist of furnishing all paints, enamels and other products to be used including labor, tools and equipment required for painting of walls, ceiling, and baseboard. The contractor prior to commencement of the work shall examine the surfaces to be applied with paints, enamels, lacquers and other related products in order not to jeopardize the quality and appearance of painting or finishing work. All surfaces to receive paint should be cleaned and in proper condition. Hairline cracks and unevenness shall be patch and sealed with approved putty or patching compound. Woodwork shall be hand-sanded smooth and dusted clean, apply putty on joints and uneven portions. For all

paintworks, colors shall be approved first before application. Provide color samples for better visual and appreciation of end user.

II. CEILING WORKS

1. This scope of work includes replacement of existing ceiling boards of the supply office and additional cove lighting.
2. Damage ceiling joist and hangers shall be replaced by the contractor.
3. Design of ceiling shall be based on the approved reflected ceiling plan.
4. Prior to installation of boards, electrical lines and connections shall be checked by the project in charge.

III. TILEWORKS

1. This item of work includes replacement of existing tiles with 600mmx600mm Polished granite tiles.
2. Upon removal of existing tiles, the substrate shall be prepared and ready to receive the new finishing material.
3. All materials shall be subject for approval prior to purchasing.
4. Bulging tiles or tiles with poor adhesion shall be rectified by the contractor.

IV. DEMOLITION WORKS

1. Before demolition, the project site shall be inspected by proper authorities for documentation.
2. Removal of existing ceiling boards.
3. Removal of all existing tiles.
4. Removal of existing drywall partition.
5. The contractor shall be responsible for the disposal of waste material and debris.
6. Before disposal, all items shall be check by the university inspector.

V. MILLWORKS

This scope of work consist installation of aluminum partition with 3/8" thk clear glass. It also includes installation of frameless glass door as indicated in the approved plan and program of work. Aluminum partition shall be anchored and properly connected to the ceiling joist, wall, and flooring. The contractor shall check the stability of partition upon installation. Materials to be used shall be of high quality and made by reputable manufacturers. Door handle, glass, aluminum frame and frosted sticker design shall be approved by the end user.

ELECTRICAL DESIGN PARAMETERS

I. Codes and Standards

The Electrical System design Parameters shall be in accordance with the following Codes and Standards.

- **Codes:**
    1. Philippine Electrical Code
    2. New Fire Code of the Philippines
    3. Existing Local Codes and Ordinances
- **Standards:**
    1. National Fire Protection Association
    2. National Electrical Manufacturer's Association (NEMA)
    3. IEC Standards

II. SCOPE OF WORKS

- Based on the existing Supply and Property Management Office, the Site Works shall provide complete layout of the following:

    1. All existing branch circuits' home run must be traced to allot the loads to be removed which will accommodate the additional loads.

    2. Wiring from the panel board within the Supply and Property Management Office to the tapping point, which is situated at the left side of the left wing comfort room on the ground floor of the FEM Hall, must pass over the existing cable tray at the back of the FEM Hall.

    2. Service Conductors and Conduit Layout including fittings
    3. Grounding System
    4. Supply and Installation of Lighting Fixtures

III. Building Facilities Electrical System

1. Lighting System
    - Provide and install adequate normal branch circuits for Lighting System to all areas as per plan.
2. Power System
    - Provide and install adequate main and normal branch circuits for the Power System as per plan.

IV. Provide Details of the following for approval:

1. Lighting Fixtures/Luminaires
2. Panel board and Circuit Breakers
3. Convenience Outlet, Floor Mount, switches
4. Others as may be required

V. Summary of Materials

1. General Lighting Luminaires: Fixtures type shall be as indicated on the Lighting Layout Plan.

- 10 Watts LED Recessed Circular Downlight, 6500K Daylight, 850 Lumens, Ø 90mm
- 40 Watts, LED Panel Light, 6500K Daylight, 3200 Lumens, 600mm X 60mm
- 8 Watts / Meter LED Strip Light, 2700K Warm White, 450 Lumens / Meter
- Rechargeable Twin head LED Emergency Lamp,220V, 60Hz, 2 Heads (24 X 0.06 Watts)

2. Wiring Devices:

    - Switches shall be of 15A, 240V except as otherwise noted and approved. Terminals shall be screw-type or quick-connected type.
    - General use receptacle shall be 15A, 240V grounding type unless otherwise indicated on the drawings.
    - Special purpose receptacles shall be as called for on the drawings. Matching plugs shall be supplied.

3. Panel boards and Circuit Breakers: The Panel board and Circuit Breakers shall be IEC standards.
    - Provide circuit breakers of frame, trip rating and interrupting capacity as shown on the drawings. The circuit breakers shall be quick-make, quick break, thermal-magnetic, trip-indicating and shall have common trip on all multiple breakers with internal trip mechanism.
    - All current-carrying parts of the panel boards shall be plated. The assembly shall isolate from the enclosure.

4. Electrical Conduits, Boxes and Fittings: All conduits, boxes and fittings shall be standard rigid steel, zinc coated or galvanized.

   - Plasticized Polyvinyl Chloride (uPVC) if required shall be schedule 40

5. Conductors: All wires shall be copper 99%, plastic insulated for 600V type THHN, lead free, stranded, except for the feeder lines, transformer wirings, ECB wirings, THW must be use or approved brand by the end-user. AND USED ONLY 1 TYPE WIRES AND BRAND.

   - All conduits of convenience outlets and wireways for lighting branch circuit homeruns shall be wired with a minimum of 3.5 mm square in size.

VI. INSTALLATIONS

- Electrical works of the project shall be done by duly accredited electricians under the direct supervision of a licensed electrical practitioner, i.e. PEE/REE/RME with PCAB license specializing and/or with experience in the installation of ECB , FEEDER LINES , TRANSFORMER, INCLUDING METERING ACCESSORIES.

- The contractor shall provide a licensed electrical practitioner PEE/REE/RME in the construction site to regularly supervise the implementation of the electrical works or as resident project supervisor during this stage of the electrical works until the said system is satisfactorily completed and tested. The testing process shall be done in the presence of University Inspection team and other designated technical personnel of the University.

- Sample of each fixtures, wires, wiring devices, circuit breaker panels shall be submitted for approval by the technical committee or inspection committee of the University prior to their installation. No installation of materials shall be made without the prior approval by the technical committee or the designated personnel of MMSU.

- Provision of manhole shall be referred for verification to the designer and all RSC conduits must be painted with gray epoxy primer or as specified by the architect.

- Conduit run in walls for Convenience Outlets and lightings shall be concealed and all conduits shall be the thick wall type as specified by the end-user.

- Grounding system - All exposed non-current-carrying metallic parts of electrical equipment, metallic raceway system, grounding conductor and neutral conductor or wiring system shall be grounded. The ground connection shall be made at the main service equipment and shall be made to the driven rods on the exterior of the building.

- The electrical contractor shall furnished all necessary labor, materials and equipment for satisfactory completion of the entire electrical installation as shown on the drawings and described in the specifications

- All wirings shall be tested for circuit continuity and shall be tested to assure that the wiring system is free of short-circuit, accidental grounding or other defects prior to normal system operation.

- Tests shall be performed after all wiring is completed and connected ready for the attachment of the fixtures and equipment and again after fixture and equipment are connected ready for use. Tests shall be made with an instrument capable of measuring accurately the resistance involved and having a voltage rating of 500 volts. Reading shall be taken after the voltage has been applied continuously for one minute. The insulation resistance between the conductors and between each conductor and ground shall be measured.

- Tests shall be such that each item of control equipment will function not less than five times. All tests shall be performed in the presence of the university inspection or technical committee. All tests results shall be submitted in triplicate.

- Energizing the systems - After the Contractor is assured that the wiring systems are free of faults, the Contractor shall energize the systems from their normal power sources and confirm that all systems are operational as required by the contract documents, prior to final inspection.

- In case that conflicts arise among specifications and quality of materials, installation procedure and in the plans and drawings as well as in the other contract documents before and during the implementation stage, the same should be referred to the end-user for proper resolution of the said conflicts

VII. TEST RESULTS

Test results must be provided with a witness from the PPDO/PMS.

- Current Reading during Lean and Peak Load (Main and Branches)

- Insulation Resistance Test (Megger Testing) prior to energization (Main and Branches)
- Voltage Reading (line to line and line to ground) of all phases.
- Tagging/Labelling of loads using dymo machine (embossing)

VIII. Miscellaneous

All other electrical related design and details shall be approved by the owner and its authorized representatives or consultants.

After all the works have been completed, the surrounding immediate areas affected in the prosecution of the project shall be cleaned and cleared of all excess materials and debris, temporary structures, facilities and utilities used during the construction period. All spillages and scattered caused by the painting works, grouts, adhesives, as well as markings and signage shall likewise be removed to the full satisfaction of the Owner.

A. Time is a very important factor in the implementation of this project and as such, all works indicated in the plans, specifications and in this document shall be fully completed within **50 calendar days** from receipt of the Notice to Proceed.

B. Before final acceptance by the end-user, the Contractor shall post a warranty security in accordance with the following schedule as prescribe in Section 62.2.3.3 of RA 9184

Form of Warranty Security	Amount of Warranty Security (Equal to percentage of the Total Contract Price)
a) Cash or Letter of Credit issued by a Universal or Commercial Bank: Provided, however, that the LC shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	Five percent (5%)
b) Bank guarantee confirmed by a Universal or Commercial Bank.	Ten percent (10%)
c) Surety bond callable upon demand issue by GSIS or a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.	Thirty percent (30%)

to cover warranty against structural defects to cover the following periods as follows in accordance with Section 62.2.3.2

C. Permanent Structures (15 years)
D. Semi-Permanent Structures (5 years)
E. Other Structures (2 years)

C. The Approved Budget for the Project to be bid is **Eight Hundred Thirty Eight Thousand Eight Hundred Seventy One Pesos Only (Php. 838,871.84)**

Prepared by:

ARSENIO P. GUILLERMO
Architect I

LAARNI GAIL T. CALAUSTRO
Engineer I, EE

Checked by:

AIDA V. CABANG
Architect IV, Chief Planning

Noted by:

ROMEO R. DULDULAO
Director, PPDO

Republic of the Philippines
MARIANO MARCOS STATE UNIVERSITY
City of Batac, 2906, Ilocos Norte

BILL OF QUANTITIES

Project Title:Refurbishment of Supply and property Management Office

Item No.	Description	Quantity	Unit
1.0	**Painting Works** Painting of walls, doors, ceiling and window grills	597.96	sq. mtrs.
2.0	**Ceiling Works** Replacement of ceiling boards and additional cove lighting	135.23	sq. mtrs.
3.0	**Tileworks** Replacement of existing tiles	135.23	sq. mtrs.
4.0	**Demolition Works** Removal of existing ceiling boards, tiles, and partition	1.00	lot
5.0	**Millworks** Installation of aluminum partition and frameless glass door	352.00	sq. mtrs.
6.0	**Conduits, Boxes & fittings** Electrical roughing in	1.00	lot
7.0	**Wires and Wiring Devices** Electrical wiring and installation of devices	1.00	lot
8.0	**Panelboard with Main & Branch Breakers** Installation of panelboards and breakers.	1.00	lot
9.0	**Lighting Fixtures and Lamps** Installation of lightings	1.00	lot

Prepared By:

ARSENIO P. GUILLERMO
Architect I

LAARNI GAIL T. CALAUSTRO
Engineer I, EE

Checked by:

AIDA V. CABANG
Architect IV, Chief Planning

Recommending Approval:

ROMEO R. DULDULAO
Director, PPDO

Republic of the Philippines
MARIANO MARCOS STATE UNIVERSITY
City of Batac, Ilocos Norte

Refurbisment of Supply and Property Management Office

ITEM NO.	DESCRIPTION
I.	***PAINTING WORKS*** Coverage: 1. Surface preparation for painting. 2. Painting of walls, doors, ceiling and window grills **Materials:** Semi Gloss Latex (baseboard), *boysen, davies or approved equal* Semi Gloss Latex (wall) boysen, davies or approved equal Flat Latex White (ceiling) boysen, davies or approved equal Flat Latex (covelight) boysen, davies or approved equal Quick dry Enamel (window and door) boysen, davies or approved equal Sandpaper #100 (oakey) Sandpaper #120 (oakey) Patching Compound Masonry Putty All Purpose Epoxy A&B, *pioneer or approved equal* Roller Brush 9" with paint pan Paint Brush 4" Paint Brush 2" Putty Knife
II.	***CEILING WORKS*** Coverage: 1. Replacement of existing ceiling boards and damage celing joist 2. Additional coveligting **Materials:** Furring Channel 19mmx50mmx5.0m Carrying Channel 12mmx38mmx5.0m Blind Rivet5/32" x 1/2 Blind Rivet5/32" x 3/4 Wall Angle 25mmx25mmx2.4m Hardiflex Board (4ftx8ftx4.5mm) 15 pcs. 2"x2"x12' Lumber Common Wire Nail 3" Concrete Nail 1" Hardiflex Nail
III.	***TILEWORKS*** Coverage: 1. Replacement of existing tiles. **Materials:** 60cmx60cm Polished Granite Tiles Tile Adhesive, *Novtek Premium, ABC or approved equal* Portland Cement (40kgs.) *holcim or approved equal* Fine Sand S-1

	Tile Grout (2kgs.), *ABC or approved equal* Diamond cutting disk
IV.	***DEMOLITION WORKS*** Coverage: 1. Removal of existing tiles. 2. Removal of existing ceiling boards 3. Removal of existing drywall partition
V.	***MILLWORKS*** Coverage: 1. Installation of aluminum partition with 3/8" thk. glass 2. Installation of frameless glass door with heavy duty overhead concealed door closer and SUS-304 stainless handle. 3. Provide heavy duty lockset for frameless door
VI.	***CONDUITS, BOXES AND FITTINGS*** **Coverage:** 1. Supply and installation of conduits, boxes and fittings **Materials:** Neltex, Atlanta or approved equal 20 mmØ, PVC Adapter with Locknut 20 mmØ, PVC Flexible Conduit, 2.2 mm Thick 20 mmØ, PVC Conduit, 2.2 mm Thick 20 mmØ, PVC Elbow, Long, Thick Wall 20 mmØ, PVC Short Elbow, Long, Thick Wall 32 mmØ, PVC Conduit, Long, Thick Wall 32 mmØ, Rigid Pipe Strap, 2 holes Junction Box, 4" x 4" Utility Box, 2" x 4"
VII.	***WIRES AND WIRING DEVICES*** **Coverage:** 1. Supply and installation of wires and wiring devices. **Materials:** Phelps Dodge Wire or any approved equal 8.0 mm^2, THHN/ THWN- 2 5.5 mm^2, THHN/THWN-2 3.5 mm^2, THHN/THWN-2 Duplex Universal Outlet, with Cover Plate, with Grounding and Safety Shutter, Wide Series, 20A Floor Mounted Duplex Convenience Outlet Wide Series 20A Switches, Wide Series, with Cover Plate, Panasonic or approved equal 2 Gang, 3 Way 3 Gang, 3 Way 2 Gang 3 Gang
VIII.	***PANELBOARD WITH MAIN AND BREAKERS*** Coverage: 1. Supply and installation of panel board and circuit breakers. **Materials:** Three Phase, 3-Wire, 240V with ground in NEMA 1, Wall Mounted Enclosure, Powerbox or approved equal Schneider Electric or approved equal 50AT, 3P, 25KAIC, 240V, MCCB 20AT, 2P, 10KAIC, 240V, MCB 30 AT, 2P, 10 KAIC, 240V, MCCB

IX	***LIGHTING FIXTURES AND LAMPS*** Coverage: 1. Supply and installation of lighting fixtures **Materials:** LED PANEL 600mm x 600mm, 40watts, 3200 lumens, 6500k daylight include hangers and consumables to complete the system LED Recessed Circular Downlight 110mmØ, 10watts , 850 lumens, 6500k daylight Twinhead Emergency Light, 24 x 0.06 LED, 230 V, 60 Hz Strip Light 8W/meter, 2700k warm white, 450 lumens/meter

Prepared By:

ARSENIO P. GUILLERMO
Architect I

LAARNI GAIL T. CALAUSTRO
Engineer I, EE

Checked by:

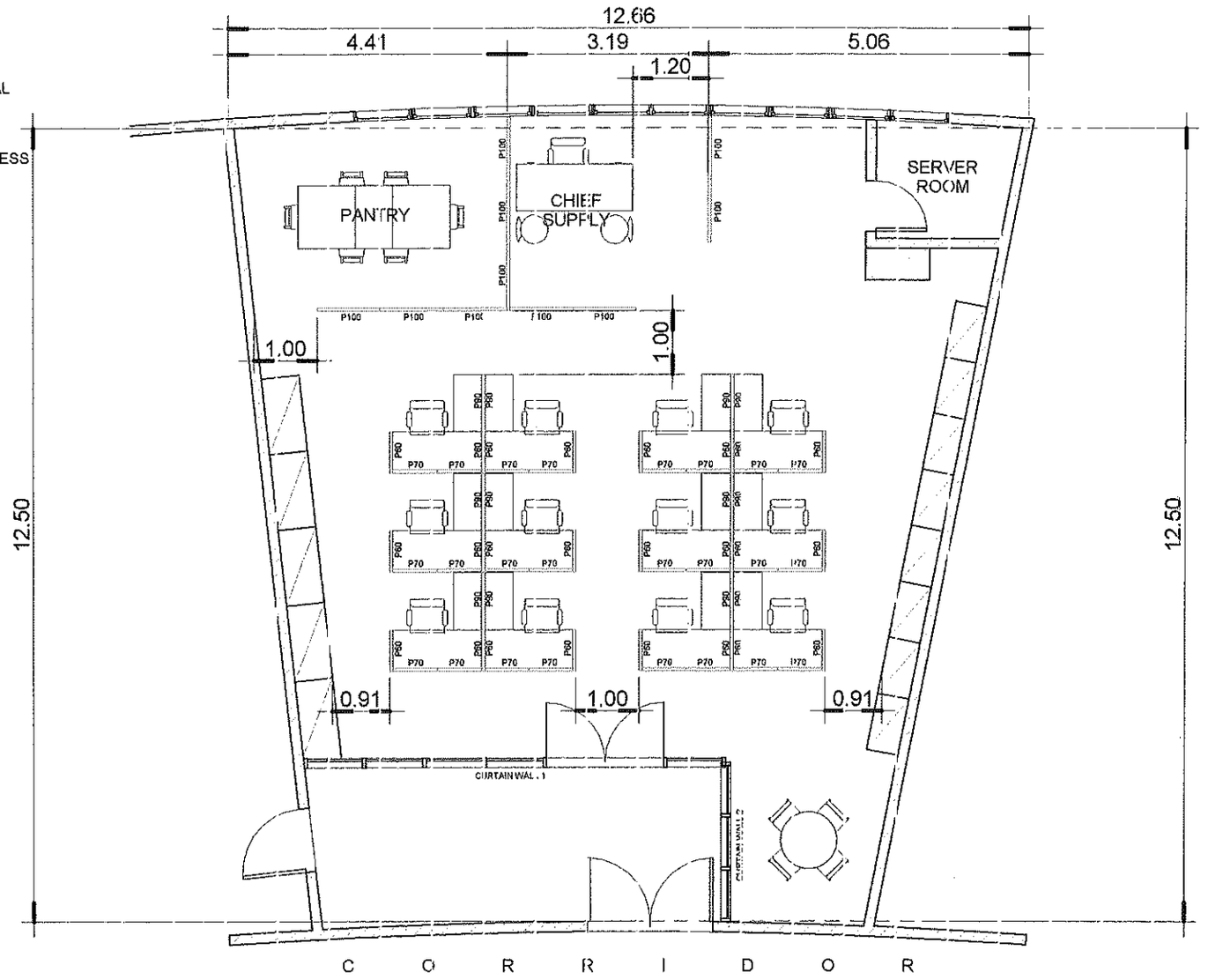
AIDA V. CABANG
Architect IV, Chief Planning

Recommending Approval:

ROMEO R. DULDULAO
Director, PPDO

SCOPE OF WORK:

1. REPLACEMENT OF CEILING BOARDS.
2. ADDITIONAL COVE LIGHTING.
3. ELECTRICAL ROUHING-INS AND WIRING.
4. SUPPLY AND INSTALLATION OF ELECTRICAL FIXTURES.
5. REPLACEMENT OF TILES.
6. REPAINTING OF INTERIOR WALLS.
7. ALUMINUM WALL PARTITION WITH FRAMELESS GLASS DOOR



FLOOR PLAN

SCALE 1:30 MTRS.

DRAWN BY:

ARSENIO P. GUILLERMO
ARCHITECT

CHECKED/REVIEWED BY:

AIDA V. CABANGS
ARCHITECT IV

PROJECT TITLE:

REFURBISHMENT OF SUPPLY AND PROPERTY MANAGEMENT OFFICE

LOCATION: MMSU-FEM HALL, CITY OF BATAC, ILOCOS NORTE

CONFORME

PHEBE M. PASION
Chief, Supply and Property Management

RECOMMENDING APPROVAL:

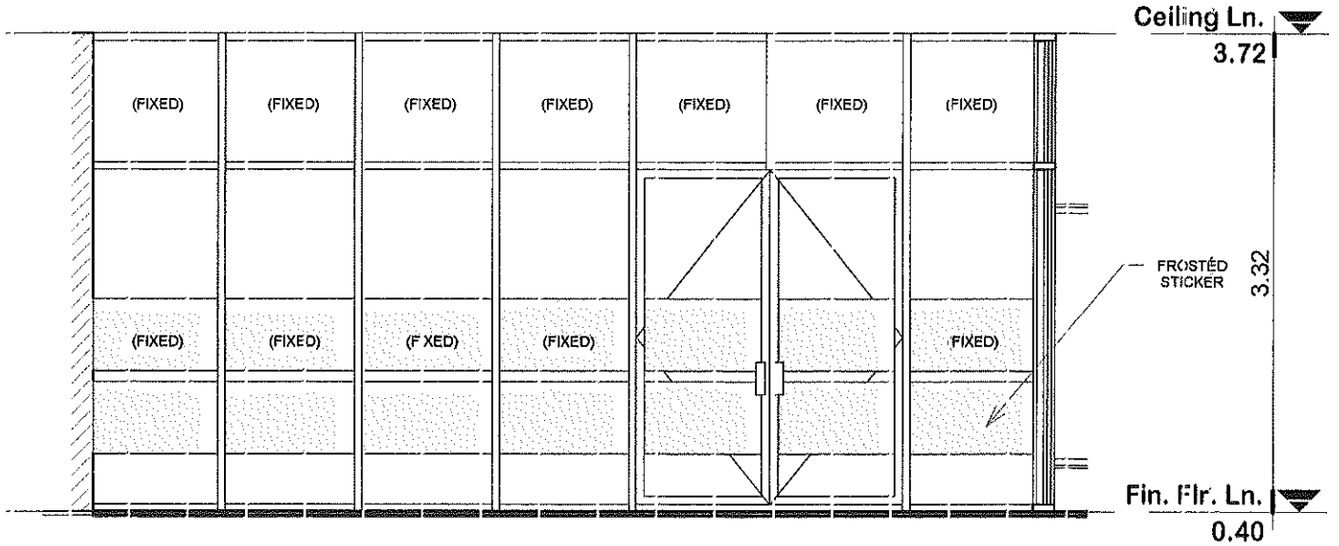
ROMEO R. DULDULAO
DIRECTOR,PPDO

APPROVED BY:

SHIRLEY C. AGRUPIS
PRESIDENT

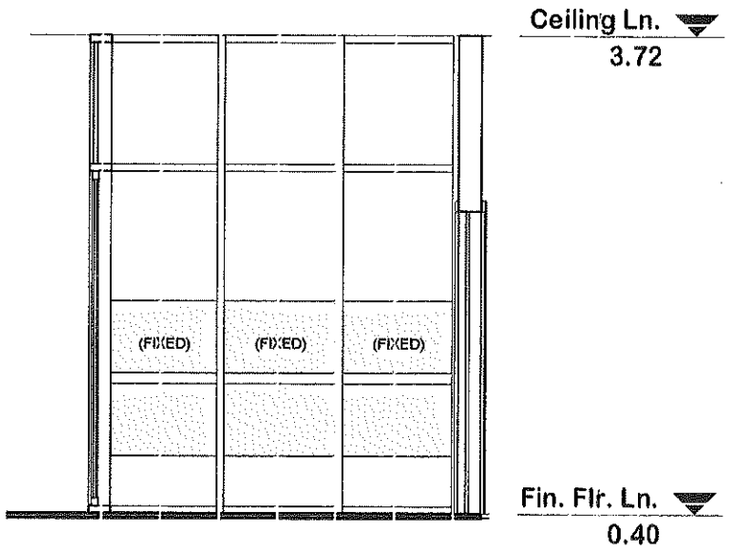
SHEET CONTENT:

SHEET NO:



CURTAIN WALL 1

SCALE 1:50 MTRS.



CURTAIN WALL 2

SCALE 1:50 MTRS.

DRAWN BY:

ARSENIO P. GUILLERMO
ARCHITECT

CHECKED/REVIEWED BY:

AIDA V. CABANG
ARCHITECT IV

PROJECT TITLE:

REFURBISHMENT OF SUPPLY AND PROPERTY MANAGEMENT OFFICE

LOCATION: MMSU -FEM HALL, CITY OF BATAC, ILOCOS NORTE

CONFORME:

PHEBE M. PASION
Chief, Supply and Property Management

RECOMMENDING APPROVAL:

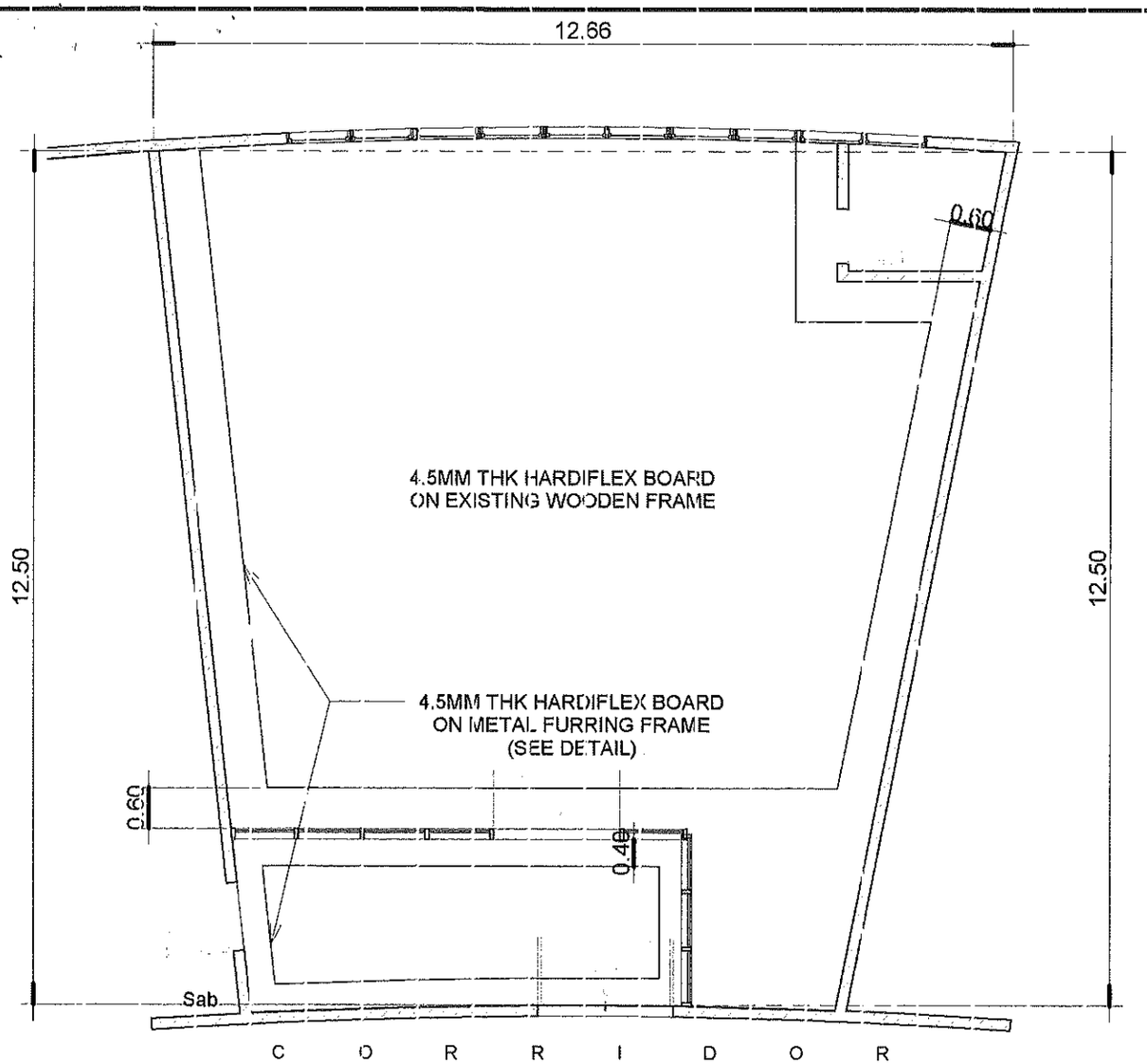
ROMEO R. DULDULAO
DIRECTOR PPDO

APPROVED BY:

SHIRLEY C. AGRUPIS
PRESIDENT

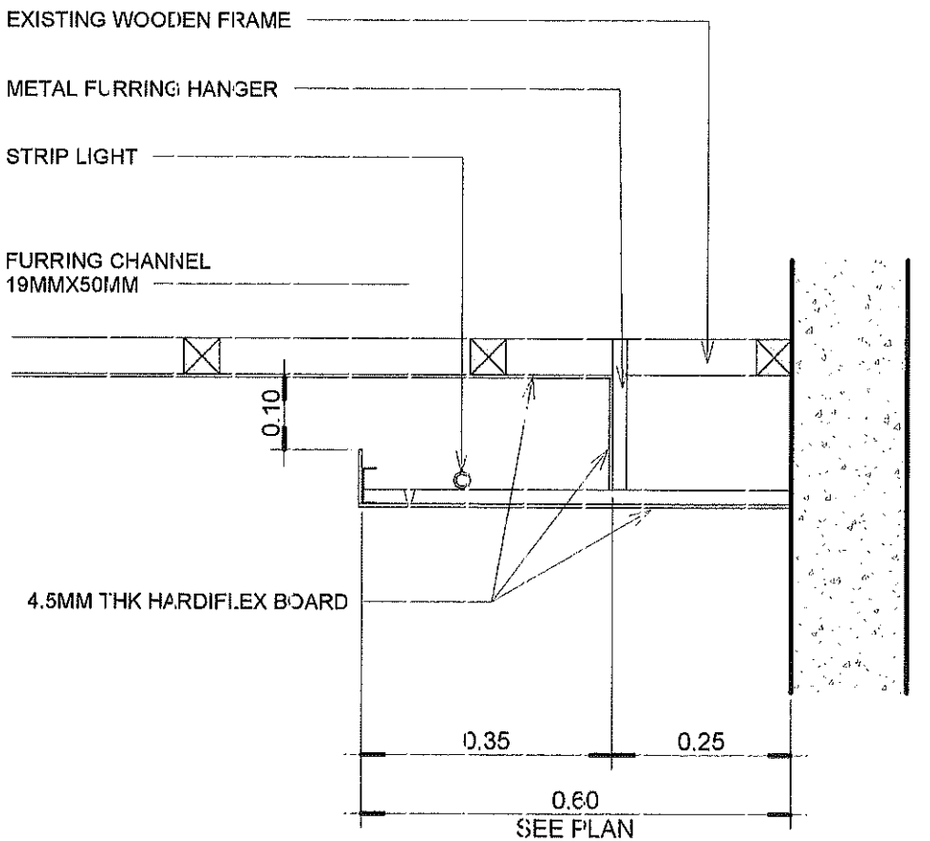
SHEET CONTENT:

SHEET NO:



REFLECTED CEILING PLAN

SCALE 1:100 MTRS.



DETAILED SECTION OF COVELIGHT

SCALE 1:10 MTRS.

DRAWN BY:
ARSENIO P. GUILLERMO
ARCHITECT

CHECKED/REVIEWED BY:
AIDA V. CABANG
ARCHITECT IV

PROJECT TITLE:
REFURBISHMENT OF SUPPLY AND PROPERTY MANAGEMENT OFFICE

LOCATION: MMSL-FEM HALL, CITY OF BATAC, ILOCOS NORTE

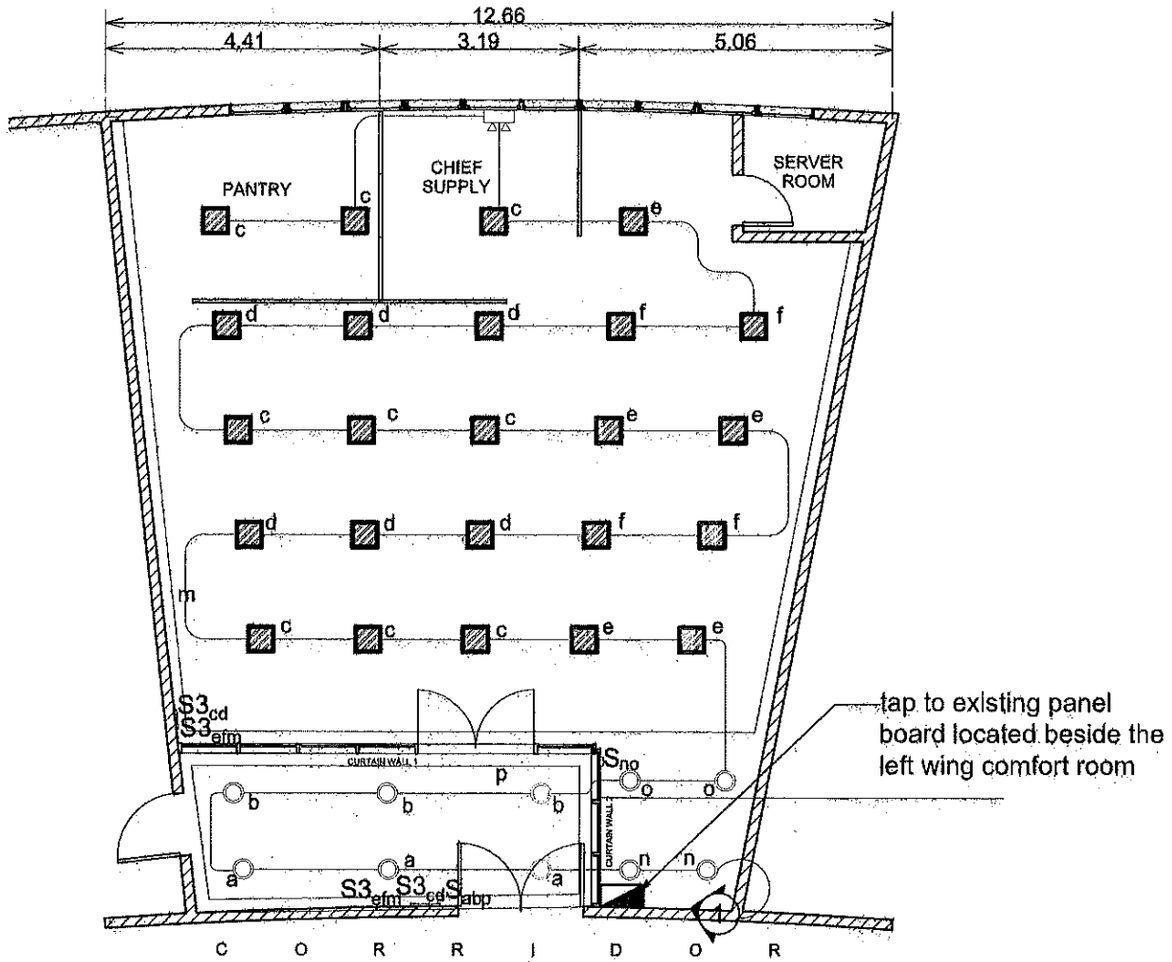
CONFORME:
PHEBE M. PASION
Chief, Supply and Property Management

RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR PPDO

SHEET CONTENT:

APPROVED BY:
SHIRLEY C. AGRUPIS
PRESIDENT

SHEET NO:



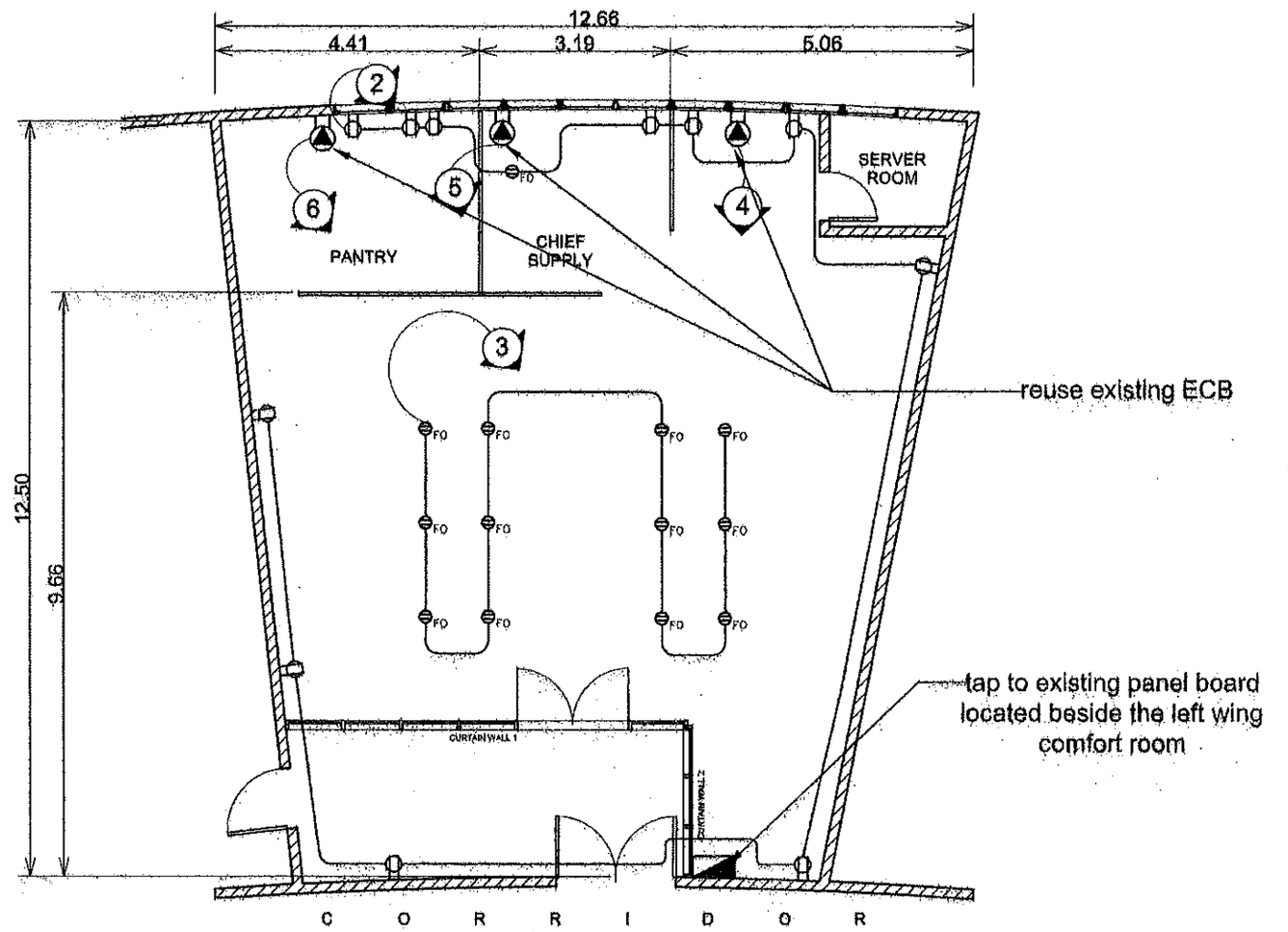
LIGHTING LAYOUT PLAN

SCALE 1:100 MTRS.

- 10WATTS LED RECESSED CIRCULAR DOWNLIGHT, 6500K DAYLIGHT, 850 LUMENS, 110ømm
- 40WATTS LED PANEL LIGHT, 6500K DAYLIGHT, 3200 LUMENS, 600mmx600mm
- 8WATTS/METER LED STRIP LIGHT, 2700K WARM WHITE, 450 LUMENS/METER
- CIRCUIT HOMERUN
- DUPLEX CONVENIENCE OUTLET
- $\ominus_{FO}$ – FLOOR MOUNTED OUTLET
- RECHARGEABLE TWINHEAD EMERGENCY LAMP, TWO HEADS (24 X 0.06 WATTS)
- S – SWITCH
- S3 – SWITCH

LEGEND / SYMBOLS

DRAWN BY: LAARNI GAIL T. CALAUSTRO, ENGINEER / EE CHECKED/REVIEWED BY: AIDA V. CABANG, ARCHITECT IV	PROJECT TITLE: REFURBISHMENT OF SUPPLY AND PROPERTY MANAGEMENT OFFICE LOCATION: MMSU-FEM HALL, CITY OF BATAC, ILOCOS NORTE	CONFORME: PHEBE M. PASION, Chief, Supply and Property Management RECOMMENDING APPROVAL: ROMEO R. DULDULAO, DIRECTOR, PPDO	SHEET CONTENT: LIGHTING LAYOUT APPROVED BY: SHIRLEY C. AGRUPIS, PRESIDENT	SHEET NO: E-1



POWER LAYOUT PLAN

SCALE 1:100 MTRS.

- 10WATTS LED RECESSED CIRCULAR DOWNLIGHT, 6500K DAYLIGHT, 850 LUMENS, 110mm
- 40WATTS LED PANEL LIGHT, 6500K DAYLIGHT, 3200 LUMENS, 600mmx600mm
- 8WATTS/METER LED STRIP LIGHT, 2700K WARM WHITE, 450 LUMENS/METER
- CIRCUIT HOMERUN
- DUPLEX CONVENIENCE OUTLET
- FLOOR MOUNTED OUTLET
- RECHARGEABLE TWINHEAD EMERGENCY LAMP, TWO HEADS (24 X 0.06 WATTS)
- SWITCH
- SWITCH

LEGEND / SYMBOLS

DRAWN BY:
LAARNI GAIL T. CALAUSTRO
ENGINEER I, EE

CHECKED/REVIEWED BY:
AIDA V. OABANG
ARCHITECT IV

PROJECT TITLE:
REFURBISHMENT OF SUPPLY AND PROPERTY MANAGEMENT OFFICE

LOCATION: MMSU-PEM HALL, CITY OF BATAC, ILOCOS NORTE

CONFORME:
PHEBE M. PASION
Chief, Supply and Property Management

RECOMMENDING APPROVAL:
ROMEO R. DULOULAO
DIRECTOR, PEBD

SHEET CONTENT:
POWER LAYOUT

APPROVED BY:
SHIRLEY C. AGRUPIS
PRESIDENT

SHEET NO:
E-2

PANELBOARD 1

CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø LOAD	AB	CA	BC	CIRCUIT BREAKER POLE	CIRCUIT BREAKER AF	CIRCUIT BREAKER AT	CONDUCTOR SIZE	CONDUCTOR TYPE	CONDUIT DIAMETER	CONDUIT TYPE
1	10 sets of 10W LED Recessed Circular Downlight 80 meters of 8W/meter Strip Light 20 sets of 40W LED Panel Light 1 Twinhead Emergency Light	1,400.00		6.09			2	63	20	2 - 3.5mm²	THHN	20MM	PVC
2	11 sets of Duplex Convenience Outlet 1 set of floor mounted outlet	2,160.00			9.39		2	63	20	2 - 3.5mm2 + 1 - 3.5mm2	THHN	20MM	PVC
3	12 sets of floor mounted outlet	2,160.00				9.39			20	2 - 3.5mm2 + 1 - 3.5mm2	THNN	20MM	PVC
4	ACU	2,760.00		12.00			2	63	30	2 - 5.5mm2 + 1 - 5.5mm2	THHN	20MM	PVC
5	ACU	2,760.00			12.00		2	63	30	2 - 5.5mm2 + 1 - 5.5mm2	THHN	20MM	PVC
6	ACU	2,760.00				12.00			30	2 - 5.5mm2 + 1 - 5.5mm2	THNN	20MM	PVC
TOTAL		11,240.00		18.09	21.39	21.39							

COMPUTATION:

CONNECTED LOAD = 11240 VA

DEMAND LOAD @100% DEMAND FACTOR = 11240 VA

IFL = 11240/(230*1.732)+ (.25*12) = 31.216 A

I =31.216 x 1.25 = 39.02 A

KAIC RATING

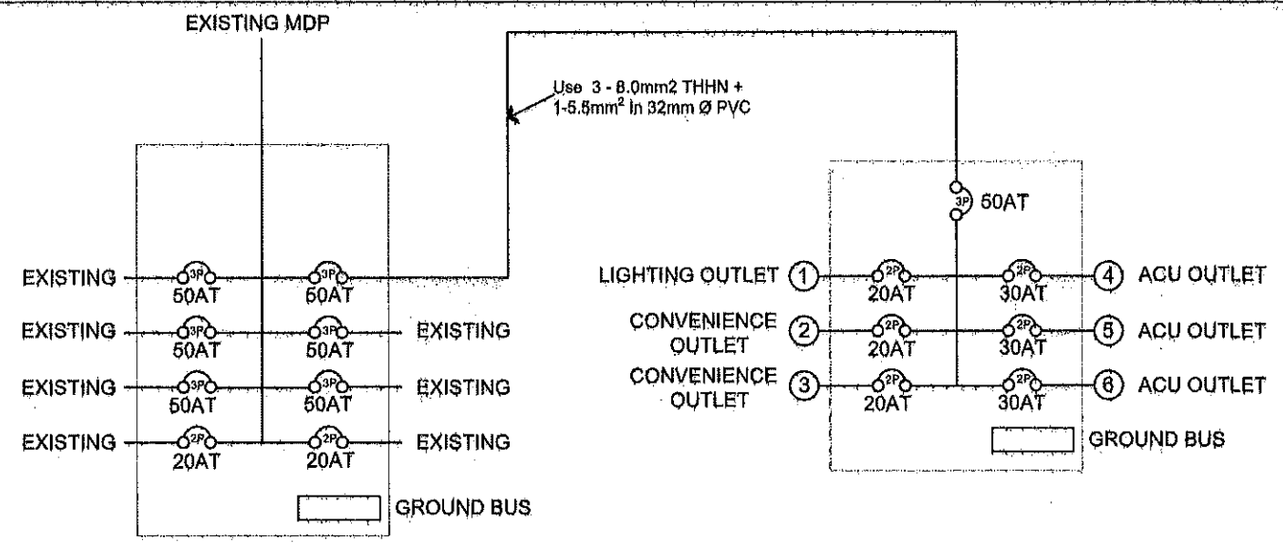
MAIN: 25KAIC

BRANCHES: 10KAIC

FEEDER CONDUCTOR: 3 - 8.0mm2 THHN & 1 - 5.5mm2 THHN in 32mm Ø PVC

NOTE: For motor loads, use MCCB.

SCHEDULE OF LOADS



SINGLE LINE DIAGRAM

GENERAL NOTES AND SPECIFICATIONS

1. ALL WORKS HEREIN SHALL BE DONE WITH THE PLANS AND SPECIFICATIONS. THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE PHILLIPINE ELECTRICAL CODE, THE RULES AND REGULATION OF THE LOCAL ENFORCING AUTHORITY, AND THE REQUIREMENTS OF THE LOCAL POWER, THE ELECTRICAL WORKS SHALL BE UNDER THE IMMEDIATE SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER/REGISTER ELECTRICAL MASTER ELECTRICIAN.
2. THE CONTRAQTOR SHALL BE VERIFY AND ORIENT THE ACTUAL LOCATION OF SERVICE ENTRANCE FOR CONNECTION TO THE POWER SUPPLY.
3. ALL SERVICE ENTRANCE EQUIPMENT, SWITCHES, PANEL BOARD, LIGHTING FIXTURES AND ALL NON-CURRENT CARRYING METAL PARTS SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE.
4. ALL HOMERUNS TO PANEL BOARDS MORE THAN 30 METERS IN LENGTH SHALL BE ONE STEP LARGER OTHERWISE SPECIFIED,
5. ALL FEEDERS SHALL BE INSTALLED AS INDICATED ON PLANS AND BRANCH CIRCUIT WIRES SHALL BE INSTALLED IN INDIVIDUAL HOMERUN CONDUITS.
6. ANY DISCREPANCY IN LOCATION AND RATING OF EQUIPMENT AND APPARATUS SHALL BE VERIFIED WITH THE PROPER AUTHORITY AND CHANGES SHALL BE MADE ACCORDINGLY,
7. ALL MATERIALS TO BE USED AND THE EQUIPMENT TO BE INSTALLED SHALL BE BRAND NEW AND MUST BE OF THE APPROVED TYPE FOR THE PARTICULAR LOCATION AND PURPOSE INSTEAD.
8. THE MOUNTING HEIGHTS OF WIRING DEVICES SHALL BE AS FOLLOWS:
   LIGHT SWITCHES - 1.4 METERS ABOVE FINISHED FLOOR
   CONVENIENCE OUTLETS - 0.3 METER ABOVE FINISHED FLOOR OR AS REQUIRED
   CONVENIENCE OUTLETS/SPO - 0.3 METER ABOVE FINISHED COUNTER TAPS OR AS REQUIRED
   ACU AND SPO - NOT LESS THAN 0.4 METER ABOVE FINISHED FLOOR OR AS REQUIRED
   PANELBOARDS - 1.8 METERS ABOVE FINISHED FLOOR TO CENTER
9. ALL SWITCHES SHOULD BE LOCATED IN A VERY STRATEGIC LOCATION.
10. REFER TO THE ACCOMPANYING NOTES AND SPECIFICATIONS FOR MORE COMPLETE DESCRIPTION/REQUIREMENTS OF THIS PROJECT.

GENERAL NOTES

DRAWN BY:
LAARNI GAIL T. CALAUSTRO
ENGINEER I, EE

CHECKED/REVIEWED BY:
AIDA V. CABANG
ARCHITECT IV

PROJECT TITLE:
REFURBISHMENT OF SUPPLY AND PROPERTY MANAGEMENT OFFICE

LOCATION: MMSU-FEM HALL, CITY OF BATAC, ILOCOS NORTE

CONFORME:
PHEBE M. PASION
Chief, Supply and Property Management

RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR, PPDO

SHEET CONTENT:
SCHEDULE OF LOADS, SINGLE LINE DIAGRAM AND GENERAL NOTES

SHEET NO:
E-3

APPROVED BY:
SHIRLEY C. AGRUPIS
PRESIDENT