	<b>MARIANO MARCOS STATE UNIVERSITY</b> Procurement Division		Document Code	PD-FRM-002
	Request for Quotation (RFQ) (Goods and Services)		Revision No.	5
			Effectivity Date	April 20, 2022
				Page 1 of 2

**REQUEST FOR QUOTATION (RFQ)**

Date: June 3, 2021

Sir/Madam:

Please quote your lowest price on the item/s listed below, and submit your quotation duly signed by you or your duly authorized representative not later than **3 days** subject to the Terms and Conditions provided at the last page of this RFQ.

Delivery period must be at least within **14 days** upon receipt of the Notice to Proceed or Purchase Order.

For any clarification, you may email us at [bac@mmsu.edu.ph](mailto:bac@mmsu.edu.ph).

  
**NATHANIEL R. ALIBUYOG**  
 BAC Chair

ITEM	QTY	Unit	ITEM DESCRIPTION	ABC	UNIT PRICE
	1	lot	Provision of Split Type Air-Conditioning (Kindly see attached documents for your reference)	P898,054.00	

**TOTAL ESTIMATED BUDGET: P898,054.00**

**REMARKS/NOTE:** \_\_\_\_\_

After having carefully read and accepted your Terms and Conditions, I/we submit our quotation/s on the item/s at prices indicated above.

Business Name: \_\_\_\_\_  
 Business Address: \_\_\_\_\_  
 Printed Name of the Owner: \_\_\_\_\_  
 TIN: \_\_\_\_\_  
 PhilGEPS Registration Number: \_\_\_\_\_  
 Business Permit: \_\_\_\_\_  
 Omnibus Sworn Statement: \_\_\_\_\_  
 Annual Income Tax Return: \_\_\_\_\_

Signature over Printed Name  
 \_\_\_\_\_  
 Tel. No./Cellphone No./e-mail address  
 \_\_\_\_\_  
 Date  
 \_\_\_\_\_

Canvassed by: \_\_\_\_\_

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MARIANO MARCOS STATE UNIVERSITY  
Procurement Division

Request for Quotation (RFQ)  
(Goods and Services)

Document Code PD-FRM-002

Revision No. 5 Page 2 of 2

Effectivity Date April 20, 2022

**TERMS AND CONDITIONS:**

1. Bidders shall provide correct and accurate information required in this form.
2. Bidders may quote for any or all of the items.

3. Bidders shall submit a copy of the following documents along with the

Quotation:

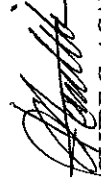
- a. PhilGEPS Registration Number
  - b. Mayor's Permit / Business Permit
  - c. Omnibus Sworn Statement (for ABC's above P 500,000.00)
  - d. Income/Business Tax Return (for ABC's above P 500,000.00)
  - e. Certificate of Public Conveyance (CPC) for vehicle rentals and truckings
4. Price quotation/s, to be denominated in Philippine peso, shall include all taxes, duties and/or levies payable.
  5. Quotations exceeding the Approved Budget for the Contract shall be rejected.
  6. Award of contract shall be made to the lowest quotation which complies with the minimum technical specifications and other terms and conditions stated herein.
  7. Any interlineations, erasures or overwriting shall be valid only if they are signed or initialed by you or any of your duly authorized representative/s.
  8. The item/s shall be delivered according to the requirements specified in the Technical Specifications.
  9. The University has the right to inspect and/or test the goods to confirm their conformity to the technical specifications.
  10. Liquidated damages equivalent to one tenth of one percent (0.1%) of the value of the goods not delivered within the prescribed delivery period shall be imposed per day of delay.

Republic of the Philippines  
**MARIANO MARCOS STATE UNIVERSITY**  
 PHYSICAL PLANNING AND DEVELOPMENT OFFICE  
 City of Batac, 2906, Ilocos Norte

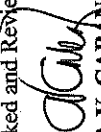
Provision of Air-Conditioning Unit  
 MMSU Swimming Pool Function Hall and Rooms

<b>SPECIFICATIONS</b>	
Building Part/ Material	Specifications
<b>MECHANICAL</b>	
Floor Mounted / Standing Air Conditioning Unit	Variable Frequency Drive (VFD) - Inverter Type Power Supply - Three Phase, 220V, 60 Hz [3ph-220V-60Hz] Cooling Capacity : 5.0 TR, 58,500 btuh (19,507 - 60,489 btuh) Refrigerant = Eco-Friendly R32 or R410A Fast Cooling Type or Jet Cool Type Energy Saver with High EER > 10.0
Wall Mounted Air conditioning Unit	Variable Frequency Drive (VFD) - Full DC Inverter Type Power Supply - Single Phase, 220V, 60 Hz [1ph-220V-60Hz] Rated Cooling Capacity : 19,543 btuh Refrigerant = Eco Friendly R32 or R410A Fast Cooling Type or Jet Cool Type Energy Saver with High EER > 10.0
Wall Mounted Air conditioning Unit	Variable Frequency Drive (VFD) - Full DC Inverter Type Power Supply - Single Phase, 220V, 60 Hz [1ph-220V-60Hz] Rated Cooling Capacity : 8,751 btuh Refrigerant = Eco Friendly R32 or R410A Fast Cooling Type or Jet Cool Type Energy Saver with High EER > 10.0
<b>ELECTRICAL</b>	
Panel Board	NEMA 1 Enclosure, Powder Coated Finished
Conduit	for PVC - Thick Wall (2.2mm for 20mmØ, 2.4mm for 50mmØ), unplasticized polyvinyl chloride (uPVC) RSC - Galvanized, Painted
Wires	Rated 600V, THW, THHN, Lead Free

Prepared by:

  
**DENNIS CLYDE G. ACANTILLADO**  
 Mechanical Engineer / Master Plumber

Checked and Reviewed by:

  
**AIDA Y. CABANG**  
 Chief, Physical Planning Section

  
**JACOB H. SANTILLAN**  
 Electrical Engineer

  
**ROMEO R. DULDULAO**  
 Director, Physical Planning and Development Office

DETAILED ESTIMATES

Item No. Description	Quantity Unit	Unit Price	Sub-Total	1	
				Quantity	Unit Price
<b>ELECTRICAL SUPPLY</b>					
<b>I. Panelsboards, Enclosures, Circuit Breakers and Metering</b>					
PP-ACU Three Phase, 3-Wire, 240Volts with ground in NEMA 1 Surface Mounted Enclosure (Ca. 16 Galvanized Materials, Powder Coated Finish, Bolted Type, Complete Ground Lugs, Tin Plated Copper Bus Bar) Circuit Breaker, All Bolt-on Type and Shall be One Toggle and Must Have Highly Visible Trip Indicator Mfr: 100AT, 3-pole, 50KAIC @ 240 V MCCB Branches: 2 - 40 AT, 2-pole, 22KAIC @ 240 V, Bolt - on Type 2 - 30 AT, 2-pole, 22KAIC @ 240 V, Bolt - on Type 2 - 20 AT, 2-pole, 22KAIC @ 240 V, Bolt - on Type 2 - Spaces w/ Bus Bar		assy			
40AT, 2-pole, 22KAIC @ 240 V, Bolt-on Type		pcs			
30AT, 2-pole, 22KAIC @ 240 V, Bolt-on Type		pcs			
20AT, 2-pole, 22KAIC @ 240 V, Bolt-on Type		pcs			
KVAHR METER CL-100 Meter base, 1" (SQUARE), 20mmØ x 3m grounding rod		set			
SOLDERLESS WIRE CONNECTOR (for AWG #2)		pcs			
SOLDERLESS WIRE CONNECTOR (for AWG #8)		pcs			
<b>SUB-TOTAL I. (Panelboards, Circuit Breakers, and Metering)</b>					
<b>II. Pipes, Conduits and Fittings (Thick Wall)</b>					
PVC PVC Adapter with Locknut (Orange) 50 mm Ø		pcs			
20 mm Ø		pcs			
PVC Pipe (Orange) Thick Wall 50 mm Ø		pcs			
20 mm Ø		pcs			
PVC Long Elbow (Orange) Thick Wall 50 mm Ø		pcs			
20 mm Ø		pcs			
RSC Adapter w/ Locknut and Bushing, 40mmØ		pcs			
RSC Pipe, 40mmØ		pcs			
RSC Elbow, 40mmØ		pcs			
RSC Coupling, 40mmØ		pcs			
Clamp w/ Top and Metal Screw, 40mmØ		pcs			
Service Entrance Cap, 40mmØ, Weatherproof		pcs			
Secondary Rack, 4 Wire w/ Spool Insulator, Heavy Duty		PCS			
<b>SUB-TOTAL II. (Pipes, Conduits and Fittings)</b>					
<b>III. Conductors, Lead Free</b>					
30 mm² THW		m			
8.0 mm² THHN		m			
8.0 mm² THHN		m			
5.5 mm² THHN		m			
3.5 mm² THHN		m			
<b>SUB-TOTAL III. (Conductors, Lead Free)</b>					
<b>IV. Consumables</b>					
Butane Gas		PCS			
PVC Solvent Cement (400cc)		can			
Dust Sealant		Kil			
Electrical Tape, Big		rolls			
<b>SUB-TOTAL IV. (Consumables)</b>					
<b>V. Installation Cost</b>					
Installation Cost (includes Chipping Works, Finishing and Furnishing of Walls and Ceilings)					
<b>SUB-TOTAL IV. (Others)</b>					
Total Material Cost		Sub-Total Unit Cost			
Equipment Cost		Unit Price			
<b>SUB-TOTAL V. (Equipment Cost)</b>					
<b>LABOR COST</b>					
REER/ME/FEE @ /day		Quantity	Unit	Sub-Total	
Accredited Electrician @ /day		days	days		
Skilled Laborer @ /day		days	days		
<b>SUB-TOTAL VI. (Labor Cost)</b>					

DIRECT COST:  
 DIRECT UNIT COST:

Plus Indirect Cost:

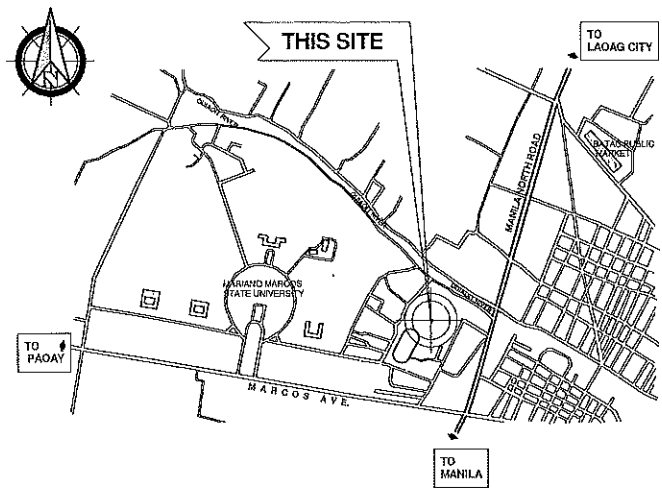
CP

WAT

Indirect Unit Cost

Total Direct and Indirect Cost:





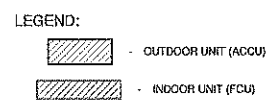
1 LOCATION MAP

Designation	Description	Location	Qty	Rated Cooling Capacity				HP	Vtuhph	I (Amps)	Rated Power Input (KW)	Full Load Current (Amps)	Amperity, W (Amps)
				KW	Btuh	TJ/h	TR						
ACU 1	Floor Mounted Split Type Variable Frequency Drive Type - (Inverter)	Pavilion As shown	2	17.8	61,029	64,690	5.1	6.0	19.6	4.55	27.5	10.14	
ACU 2	Wall Mounted Split Type Variable Frequency Drive Type - (Inverter)	Suite 1 As shown	1	5.7	19,543	20,715	1.5	2.0	5.8	1.34	6.1	10.14	
ACU 3	Wall Mounted Split Type Variable Frequency Drive Type - (Inverter)	Suite 2 As shown	1	5.4	18,514	19,625	1.5	2.0	6.5	1.49	9.0	11.26	
ACU 4	Wall Mounted Split Type Variable Frequency Drive Type - (Inverter)	Suite 3 As shown	1	2.2	7,543	7,995	0.7	1.0	2.90601	0.2	0.75	5.63	
ACU 5	Wall Mounted Split Type Variable Frequency Drive Type - (Inverter)	Suite 4 As shown	1	2.5	8,571	9,005	0.7	1.0	2.90601	0.2	0.75	5.63	

Item	Description	Zone or Space	Qty	Air Volume, (CFM)	Air Volume, (M3HR)	Fan Speed, (RPM)	Static Pressure, in WC	Fan HP	Motor HP	Watts	Vtuhph	Weight, (KG)
EF 1	Air Exhaust fan ceiling mounted type	SECOND FLOOR: Corridor Rooms and Toilet & Bath As shown	8	59	85		1	0.005	0.008	4.6	230/501	3
EF 2	Air Exhaust fan ceiling mounted type	GROUND FLOOR: Corridor Rooms As shown	4	150	255		1	0.015	0.019	14.3	230/501	3

2 SCHEDULE OF EQUIPMENT

FIRE EXTINGUISHER SCHEDULE		
Description	Quantity	Location
10 lbs Fire Extinguisher, ABC	11	As shown (see installation detail)



ABBREVIATION AND UNIT TAG

ACU AIRCON UNIT  
FCU FAN COIL UNIT  
ACCU AIR-COLLED CONDENSING UNIT  
EF EXHAUST FAN

- NOTES
- UNIT INSTALLATION MUST CONFORM TO THE MANUFACTURERS RECOMMENDATION AND ALL ENGINEERING/ARCHITECTURAL DESIGN REQUIRED BY MMSU.
  - REFRIGERANT AND CONDENSATE DRAINS THRU WALL MUST BE PROVIDED WITH SLEEVE OR SILICONRUBBER PROTECTION.
  - CONDENSATE LINES FROM THE INDOOR UNITS MUST BE PROVIDED WITH MAIN DRAIN.
  - REFRIGERANT LINE MUST BE INSULATED WITH NO LESS 1" THICK RUBBER INSULATION, LIKEWISE, DRAINS MUST BE PROPERLY INSULATED.
  - INSTALLATION MUST CONFORM TO PME CODE AND THE NATIONAL BUILDING CODE. A MECHANICAL PERMIT SHOULD BE SECURED PRIOR TO INSTALLATION.
  - AIRCON INSTALLERS MUST BE DEALERS ACCREDITED TECHNICIANS TO INCLUDE ONE (1) YEAR MAINTENANCE.

3 GENERAL NOTES

COOLING LOAD, VENTILATION & INFILTRATION CALCULATION NOTES:

Design Consideration  
 [DATA FROM 2017 ASHRAE HANDBOOK FUNDAMENTALS]  
 MONTH = JANUARY - DECEMBER  
 TIME OF DAY = 8:00 am to 5:00 pm [Typical Office Operating Time]  
 LOCATION: LAOAG CITY, PHILIPPINES  
 18.176° NORTH LATITUDE  
 120.63° EAST LONGITUDE  
 ELEVATION = 8.60m  
 STANDARD AIR PRESSURE = 101.23 KPa  
 AVERAGE ANNUAL WIND SPEED = 2.7 m/s  
 NUMBER OF ZONE: 4  
 SPACE / ZONE DESIGN CONDITION = 24°C DB @ 50% RH AND 0.0074 kg moisture / kg dry air

BUILDING TYPE = NON RESIDENTIAL  
 Wall Coefficient of Heat Transfer Uwall  
 Uwall = 1" PLASTER + 5" CHB + 1" PLASTER  
 Rwall = 0.035 m² K/W + 0.143 m² K/W + 0.035 m² K/W = 0.213 m² K/W  
 Consider outside air and inside air resistance:  
 RO = 0.04 m² K/W [outside air resistance]  
 RI = 0.13 m² K/W [inside air resistance]  
 Total Rwall = 0.04 + 0.213 + 0.13 = 0.383 m² K/W  
 Uwall = 1 / Rwall = 1 / 0.383 m² K/W = 2.61 W / m² K

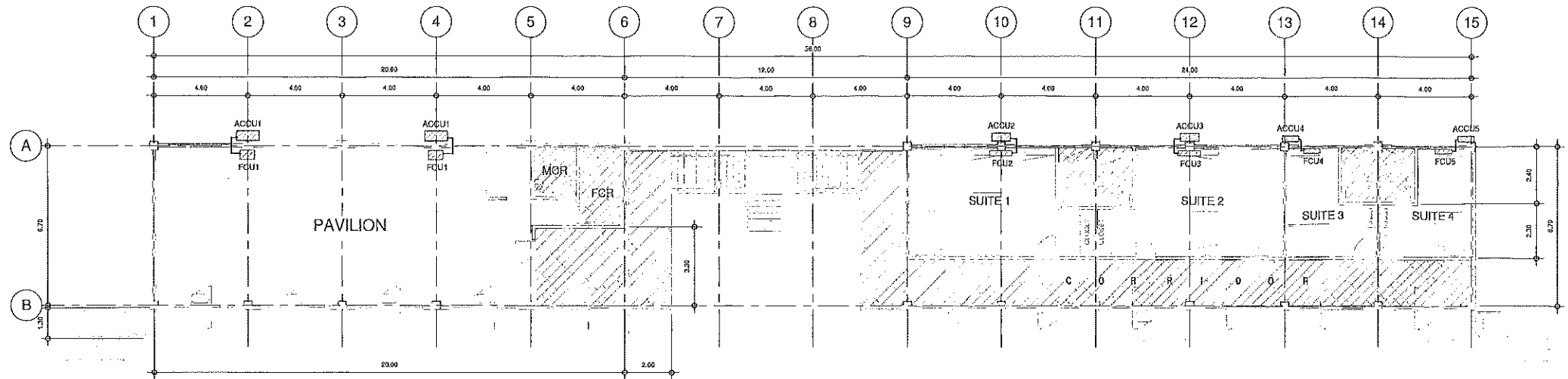
Roof Coefficient of Heat Transfer Uroof  
 Uroof = FIBRETYPE WITH 25mm INSULATION + 14" Cement BOARD or HARD/FLEX  
 Rroof = 0.02 m² K/W + 0.06 m² K/W + 0.88 m² K/W  
 Consider outside air, inside air and air space resistance:  
 RO = 0.04 m² K/W [outside air resistance]  
 RS = 0.22 m² K/W [air space resistance]  
 RI = 0.13 m² K/W [inside air resistance]  
 Total Rroof = 0.04 + 0.02 + 0.22 + 0.06 + 0.13 = 1.37 m² K/W  
 Uroof = 1 / Rroof = 1 / 1.37 m² K/W = 0.73 W / m² K

Door Coefficient of Heat Transfer Udoor  
 Udoor = 2" WOODEN HARD DOOR  
 Rdoor = 0.315 m² K/W  
 Total Rdoor = 0.04 + 0.315 + 0.13 = 0.485 m² K/W  
 Udoor = 1 / Rdoor = 1 / 0.485 = 2.06 W / m² K

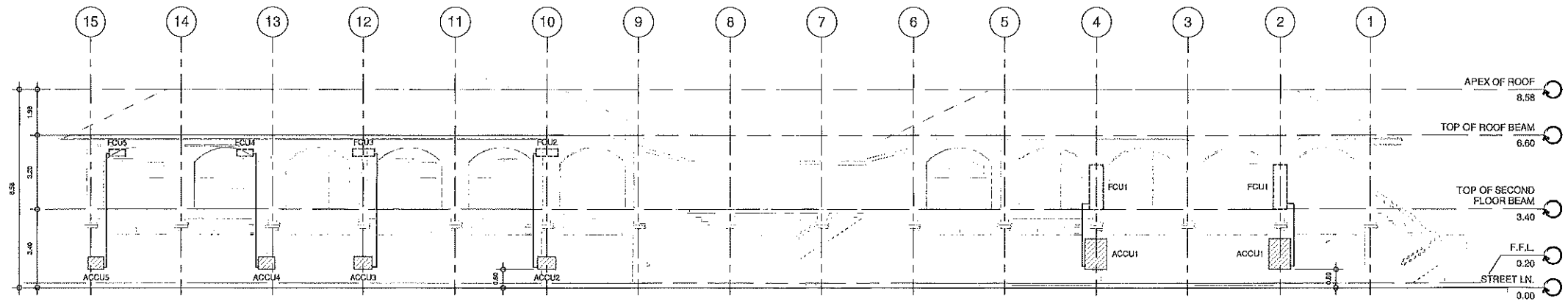
Window Glass Coefficient of Heat Transfer Uglass  
 Uglass = SINGLE GLASS, NO STORM SASH, LOW EMISSANCE COATING, WITH INDOOR SHADE  
 Uglass = 5.905 W / m² K [No storm sash, no shade]  
 Uglass = 4.589 W / m² K [No storm sash, indoor shade]  
 Shading Coefficient = 0.23  
 COLOR ADJUSTMENT FACTOR = 1.0  
 F-VALUE = 1.0

INFILTRATION AND VENTILATION  
 INFILTRATION RATE WAS BASED FROM THE AIR EXCHANGE RATE FOR RESIDENTIAL BUILDING, INFILTRATION RATE CAN BE NEGLECTED IF THE SPACE IS ALWAYS POSITIVE PRESSURE AND FAN IS ALWAYS ON. INFILTRATION AND LEAKAGE IS HIGH IF THE BUILDING IS OLD AT THE SAME TIME OUTSIDE WIND VELOCITY IS HIGH. VENTILATION RATE WAS BASED FROM ASHRAE STANDARD 62-2019 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY. COOLING LOAD DUE TO VENTILATION WAS NEGLECTED SINCE THERE IS NO OUTSIDE AIR INTRODUCED TO THE ZONES.

	FROM THE OFFICE:	DRAWN BY:	SIGNED & SEALED BY:	PROJECT TITLE:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	<b>PHYSICAL PLANNING AND DEVELOPMENT OFFICE</b> 27 202 Administration Bldg., Marikina Marikina State University CITY OF BATAAC, 1905 BATAAC NORTH TELEFAX: +63 (77) 713 111	DENNIS C. G. ACANTILARI MECHANICAL ENGINEER	DENNIS C. G. ACANTILARI MECHANICAL ENGINEER	DENNIS C. G. ACANTILARI MECHANICAL ENGINEER	<b>SWIMMING POOL (MECHANICAL PLAN)</b> LOCATION: WASH - CITY OF BATAAC, ILOCOS NORTE	RECOMMENDING APPROVAL: DENNIS C. G. ACANTILARI MECHANICAL ENGINEER	APPROVED BY: DENNIS C. G. ACANTILARI MECHANICAL ENGINEER	SHEET CONTENTS: SHEET NO:



1 SECOND FLOOR ACU LAYOUT PLAN  
1: 100 meters

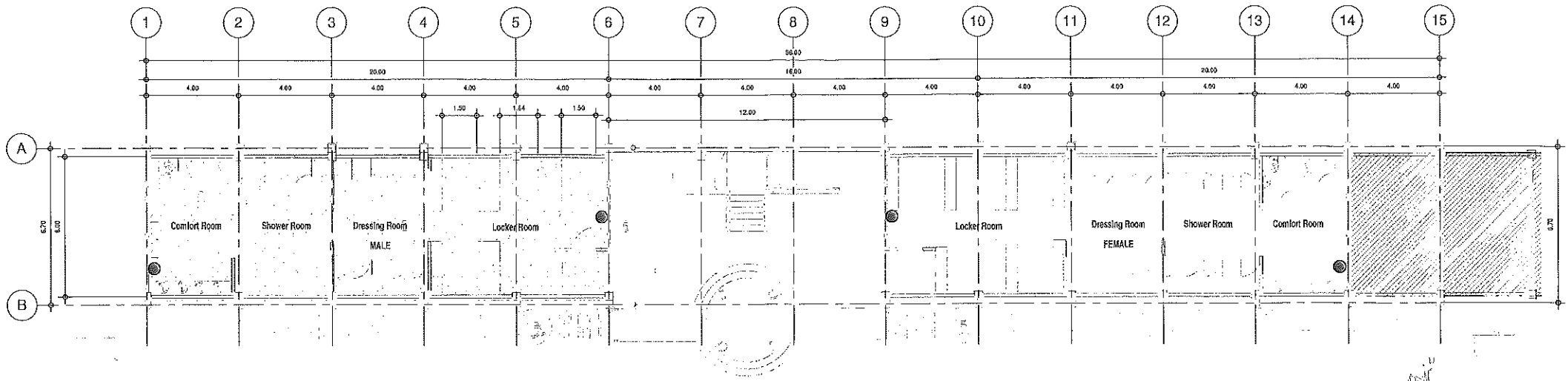


2 REAR ELEVATION  
1: 100 meters

	FROM THE OFFICE: <b>PHYSICAL PLANNING AND DEVELOPMENT OFFICE</b> <small>2F 308 ADMINISTRATION BLDG. MINDANAO STATE UNIVERSITY CITY OF BATAK, DAVAO REGION TELEFAX: 43 (71) 953 11</small>	DRAWN BY: <i>[Signature]</i> <small>PREPARED BY: DANIEL M. B. ACANTILADO MECHANICAL ENGINEER</small>	SIGNED & SEALED BY: <small>PROFESSIONAL MECHANICAL ENGINEER</small> <i>[Signature]</i>	PROJECT TITLE: <b>SWIMMING POOL (MECHANICAL PLAN)</b>	CONFORMS TO: <small>RECOMMENDING APPROVAL:</small> <i>[Signature]</i> <small>ROSEMARY M. B. LACOR PROJECT ENGINEER</small>	APPROVED BY: <i>[Signature]</i> <small>ARLEY C. AGUIRRE UNIVERSITY PRESIDENT</small>	SHEET CONTENTS: 	SHEET NO: <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">             M-2         </div>
	LOCATION: MINSU - CITY OF BATAK, DAVAO NORTH		DATE:		TITLE:		<small>         This drawing and the information herein are the property of the Engineering Office of the Physical Planning and Development Office of Mindanao State University. It is to be used only for the project and site for which it was prepared. It is not to be used for any other project or site without the written consent of the Engineering Office. It is the responsibility of the user to verify the accuracy of the information and to obtain the necessary permits and clearances from the appropriate authorities.       </small>	

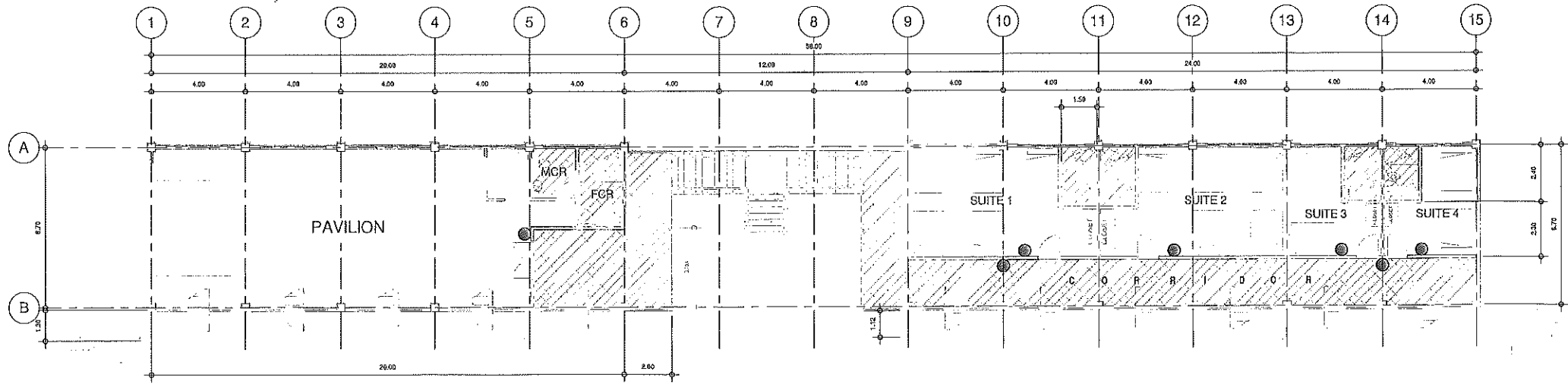







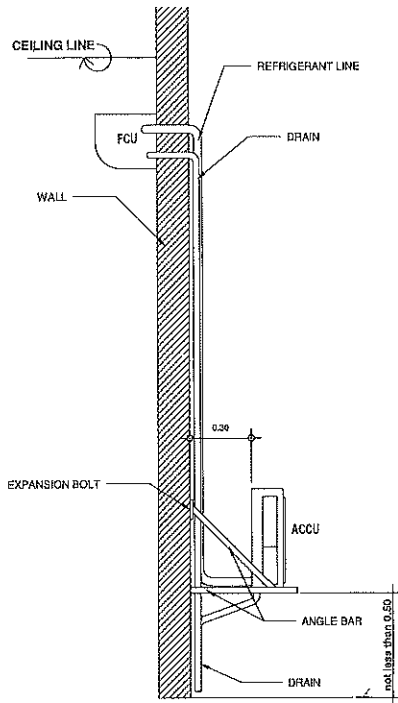
1 GROUND FLOOR FIRE EXTINGUISHER LAYOUT PLAN  
1 : 100 meters

*3/4 bath part*

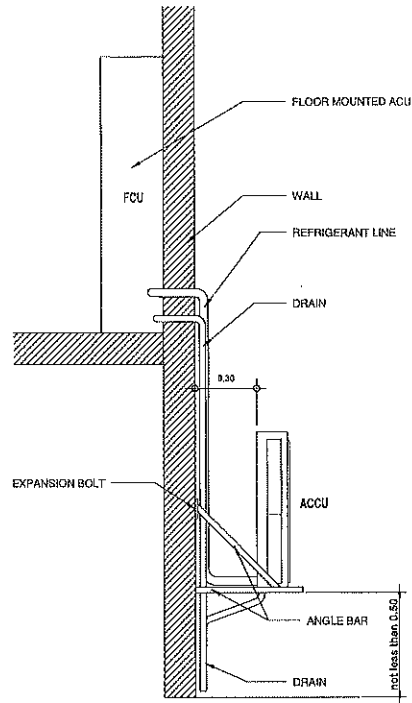


2 SECOND FLOOR FIRE EXTINGUISHER LAYOUT PLAN  
1 : 100 meters

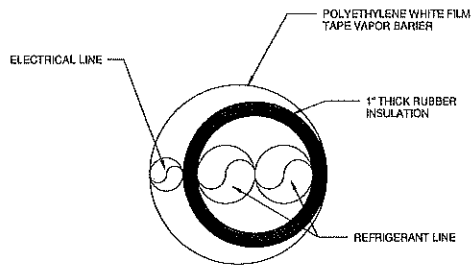
	FROM THE OFFICE:	DRAWN BY:	SIGNED & SEALED BY:	PROJECT TITLE:	CONFORMS:	APPROVED BY:	SHEET CONTENTS:	SHEET NO.:
	<b>PHYSICAL PLANNING AND DEVELOPMENT OFFICE</b> 27 3RD ADMINISTRATIVE BLDG. MARICOR MARIKINA STATE UNIVERSITY CITY OF BATAC, ZONE 1, LOCOS NORTE TELEFAX: +63 (77) 923 111	IMAY C. RAMOS DIVISION CHIEF PREPARED BY: <i>[Signature]</i> DENISE M. DE ACANTILANO MECHANICAL ENGINEER	PROFESSIONAL MECHANICAL ENGINEER PLACE SIGNATURE: DATE: TV:	<b>SWIMMING POOL (MECHANICAL PLAN)</b> LOCATION: BRISU - CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: <i>[Signature]</i> RECOMMENDING APPROVAL: RECOMMENDING APPROVAL: RECOMMENDING APPROVAL:	<i>[Signature]</i> RECOMMENDING APPROVAL: RECOMMENDING APPROVAL: RECOMMENDING APPROVAL:	SHEET NO. M-4	SHEET NO. M-4



SIDE VIEW

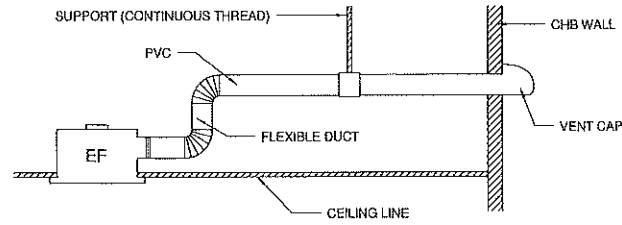


SIDE VIEW

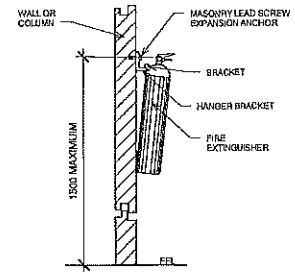


REFRIGERANT LINE DETAILS

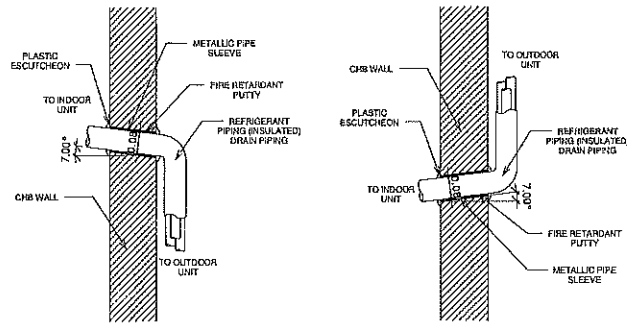
1 ACU DETAIL  
N T S



2 EXHAUST FAN DETAIL  
N T S



4 PORTABLE FIRE EXTINGUISHER DETAIL  
N T S



3 PIPE THROUGH WALL INSTALLTION  
N T S



FROM THE OFFICE:  
**PHYSICAL PLANNING AND DEVELOPMENT OFFICE**  
24 257 ADMINS TRAILER BLDG. MAINANG WILDOCS STATE UNIVERSITY  
CITY OF BATAK, ILOOS NORTE  
TELEFAX: +63 (74) 763 3111

DRAWN BY:  
IMAN...  
PREPARED BY:  
DIN...  
MECHANICAL ENGINEER

SIGNED & SEALED BY:  
PROFESSIONAL MECHANICAL ENGINEER

PROJECT TITLE:  
**SWIMMING POOL (MECHANICAL PLAN)**

LOCATION: 24181U - CITY OF BATAK, ILOOS NORTE

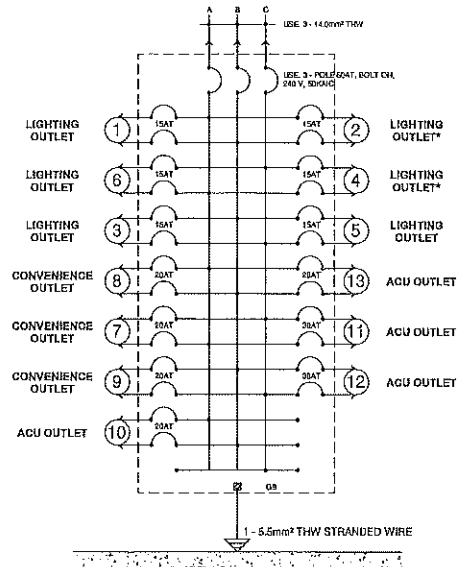
CONFORME:  
RECOMMENDING APPROVAL:  
BONIFACIO...

APPROVED BY:  
DANIEL C. AGUIRRE  
UNIVERSITY ENGINEER

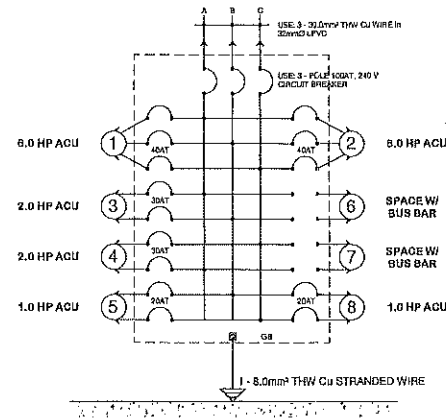
SHEET CONTENTS:

SHEET NO:  
M-5

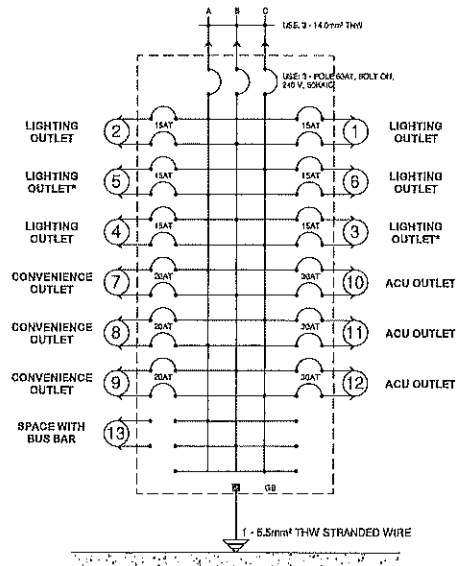
PB - A (LIGHTING AND POWER PANEL)



PB - ACU



PB - B (LIGHTING AND POWER PANEL)

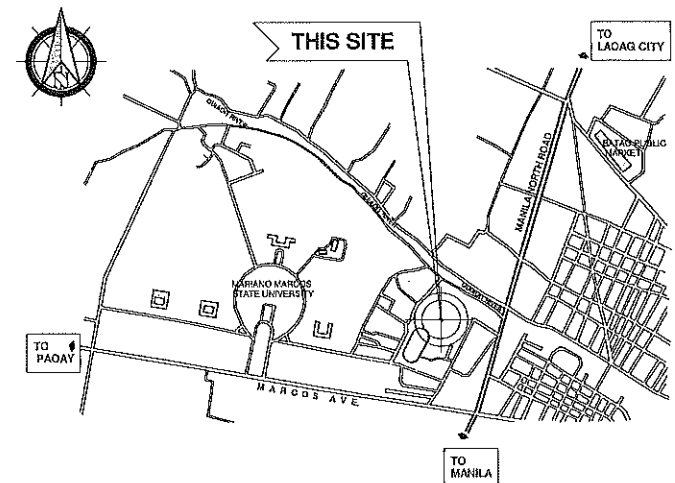


1. All works herein shall be done in accordance with the plans and specifications. The applicable provision of the latest edition of the Philippine electrical code, the rules and regulation of the local enforcing authority, and the local requirements of the local power companies.
2. The electrical works shall be under the immediate supervision of a duly licensed electrical partitioner (LEP); register electrical engineer / register master electrician.
3. The control wires shall be indicated or as specified elsewhere on the plan.
4. The contractor shall verify and orient the actual location of the switch, lighting outlets and power outlets according to plan.
5. All lighting fixtures, switches, power outlets and all non-current carrying metal parts shall be properly grounded based on the latest Philippine electrical code.
6. Any discrepancy in location and rating of equipment and apparatus shall be verified with the proper authority and the changes shall be made accordingly.
7. All wirings shall be installed as indicated on plans. Branch circuit homerun wires shall be installed in individual homerun circuits.
8. All wiring devices and materials to be used shall be brand new and must be approved type for the particular location and purpose intended.
9. The mounting heights of wiring devices shall be as follows: light switches - 1.4m ABV FF, convenience outlets - 0.4m ABV FF, panelboards - 1.8m ABV FF at center.
10. All switches should be located in a very strategic location.
11. Refer to the accompanying notes and specifications for more complete description / requirements of this project.

2 GENERAL NOTES AND SPECIFICATIONS

SYMBOL	DESCRIPTION
	SERVICE ENTRANCE
	CIRCUIT BREAKER
	PANEL BOARD
	KILOWATT HOUR METER
	GROUND
	CIRCUIT HOMERUN
	BULB
	CEILING LIGHT
	FLUORESCENT LAMP, COOL WHITE
	SPOT LIGHT
	EMERGENCY LIGHT
	WALL LIGHT
	EXHAUST FAN
	CONVENIENCE OUTLET
	CONVENIENCE OUTLET (air condition unit)
	CONVENIENCE OUTLET (weather proof)
S1	1 GANG SINGLE POLE TOGGLE SWITCH 15A, 300V
S2	2 GANG SWITCH
S3	3 GANG SWITCH

1 LEGEND / SYMBOLS



3 LOCATION MAP

	FROM THE OFFICE: <b>PHYSICAL PLANNING AND DEVELOPMENT OFFICE</b> <small>2/F 200 ANONIB TRINIDAD BLDG. MARANO MARCOS STATE UNIVERSITY CITY OF BATAC, ILOCOS NORTE TEL: 07799 3111</small>	DRAWN BY: JIMAY A. DAYANO <small>PREPARED BY:</small> JACOBUS S. SUTILLAN <small>ELECTRICAL ENGINEER</small>	SIGNED & SEALED BY: _____ <small>PROFESSIONAL ELECTRICAL ENGINEER</small>	PROJECT TITLE: <b>SWIMMING POOL (ELECTRICAL PLAN)</b>	CONFORME: _____ <small>RECOMMENDING AGENCY:</small> _____ <small>DATE:</small> _____ <small>TIME:</small> _____	APPROVED BY: _____ <small>UNIVERSITY CLERK</small>	SHEET CONTENTS: _____	SHEET NO.: E-4	
	LOCATION: MMSU - CITY OF BATAC, ILOCOS NORTE				_____ <small>DATE:</small> _____ <small>TIME:</small> _____				_____ <small>DATE:</small> _____ <small>TIME:</small> _____

PB-A (LIGHTING AND POWER PANEL)													
CIRCUIT NUMBER	LOAD DESCRIPTION	VALOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT		
						POLE	AF	AT	SIZE	TYPE	Ø	TYPE	
1	11 - 2x18W LED FLUORESCENT LAMP	356	1.72			2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
2	8 - 12W BULB LED DOWN LIGHT	104		0.72		2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
3	11 - 12W BULB LED DOWN LIGHT	132			0.57	2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
2'	18 - 2x18W LED FLUORESCENT LAMP 15W EXHAUST FAN OUTLET*	678	2.95			2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
4'	24 - 8W BULB LED PIN LIGHT 4 - 5W EXHAUST FAN OUTLET*	184		0.71		2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
5	12 - 12W BULB LED DOWN LIGHT	144			0.63	2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
6	7 - 180VA CONVEGENCE OUTLET	1260	5.48			2	100	20	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
7	6 - 180VA CONVEGENCE OUTLET	1080		4.70		2	100	20	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
9	7 - 180VA CONVEGENCE OUTLET	1260			5.40	2	100	20	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
13	1 - 1.0HP ACU, INVERTER TYPE	750	3.38			2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
11	1 - 2.5HP ACU, INVERTER TYPE	2200		5.57		2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
12	1 - 2.5HP ACU, INVERTER TYPE	2200			9.57	2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
10	1 - 1.0HP ACU, INVERTER TYPE	750	3.38			2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
14	SPACE			0									
15	SPACE				0								
TOTAL		11140	16.75 A	15.44 A	16.24 A								

MAIN FEEDER CONDUCTOR

IFL =  $\sqrt{3} [(6.75A + (3.50A \times 0.25))$   
= 30.44A

USE: 3 - 14.0mm<sup>2</sup> + 1 - 5.5mm<sup>2</sup> THW Cu. WIRE IN 40mmØ PVC

NOTE: \* - LOAD ADDED (NEW)

MAIN FEEDER PROTECTION

ICB =  $\sqrt{3} [13.45A + (9.57A \times 0.25)]$   
= 37.58A

USE: 3P 60AT, 240V, 60Hz, MCCB, 50KAIC

PB-B (LIGHTING AND POWER PANEL)													
CIRCUIT NUMBER	LOAD DESCRIPTION	VALOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT		
						POLE	AF	AT	SIZE	TYPE	Ø	TYPE	
2	14 - 2x18W LED FLUORESCENT LAMP	504	2.19			2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
5'	12 - 2x18W LED FLUORESCENT LAMP 3 - 6W BULB LED PIN LIGHT 2 - 5W EXHAUST FAN OUTLET*	450		2.60		2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
4	15 - 12W BULB LED DOWN LIGHT	180			0.78	2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
1	8 - 12W BULB LED DOWN LIGHT 4 - 12W BULB LED WALL LAMP	156	0.68			2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
6	12 - 2x18W LED FLUORESCENT LAMP	432		1.88		2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
3'	12 - 2x18W LED FLUORESCENT LAMP 2 - 15W EXHAUST FAN OUTLET*	492			2.61	2	100	15	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
7	6 - 180VA CONVEGENCE OUTLET	1080	4.70			2	100	20	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
8	7 - 180VA CONVEGENCE OUTLET	1260		5.48		2	100	20	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
9	5 - 180VA CONVEGENCE OUTLET	900			3.91	2	100	20	2 - 3.50mm <sup>2</sup> & 1 - 2.0mm <sup>2</sup>	THRN	20mm	PVC	
10	1 - 2.5HP ACU, INVERTER TYPE	2200	9.57			2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
11	1 - 2.5HP ACU, INVERTER TYPE	2200		9.57		2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
12	1 - 2.5HP ACU, INVERTER TYPE	2200			9.57	2	100	30	2 - 5.50mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	PVC	
13	SPACE				0								
14	SPACE				0								
TOTAL		12034	17.19 A	18.92 A	18.27 A								

MAIN FEEDER CONDUCTOR

IFL =  $\sqrt{3} [18.92A + (9.57A \times 0.25)]$   
= 38.91A

USE: 3 - 14.0mm<sup>2</sup> + 1 - 5.5mm<sup>2</sup> THW Cu. WIRE IN 40mmØ PVC

NOTE: \* - LOAD ADDED (NEW)

MAIN FEEDER PROTECTION

ICB =  $\sqrt{3} [9.40A + (9.57A \times 0.25)]$   
= 57.72A

USE: 3P 60AT, 240V, 60Hz, MCCB, 50KAIC

PB-ACU PANEL													
CIRCUIT NUMBER	LOAD DESCRIPTION	VALOAD	CURRENT				CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
			AB	CA	BC	3Ø	POLE	AF	AT	SIZE	TYPE	Ø	TYPE
1	6.0HP ACU, INVERTER TYPE	7888				13.8	3	100	40	2 - 8.0mm <sup>2</sup> & 1 - 5.5mm <sup>2</sup>	THRN	20mm	uPVC
2	6.0HP ACU, INVERTER TYPE	7888				13.8	3	100	40	2 - 8.0mm <sup>2</sup> & 1 - 5.5mm <sup>2</sup>	THRN	20mm	uPVC
3	2.0HP ACU, INVERTER TYPE	1495	6.50				2	100	30	2 - 5.5mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	uPVC
4	2.0HP ACU, INVERTER TYPE	1495		6.50			2	100	30	2 - 5.5mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	uPVC
5	1.0HP ACU, INVERTER TYPE	738			3.20		2	100	20	2 - 3.5mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	uPVC
6	SPACE W/ BUS BAR												
7	SPACE W/ BUS BAR												
8	1.0HP ACU, INVERTER TYPE	738			3.20		2	100	20	2 - 3.5mm <sup>2</sup> & 1 - 3.5mm <sup>2</sup>	THRN	20mm	uPVC
TOTAL		20238	6.50 A	6.50 A	6.40 A	39.60 A							

MAIN FEEDER CONDUCTOR

IFL =  $99.60A + \sqrt{3} (6.5A + 19.80 (0.25))$   
= 55.80A

USE: 3 - 30.0mm<sup>2</sup> + 1 - 8.0mm<sup>2</sup> THW Cu. WIRE IN 32mmØ uPVC

MAIN FEEDER PROTECTION

ICB =  $19.80A + \sqrt{3} (6.5A + 19.80 (0.25))$   
= 60.55A

USE: 3P 100AT, 240V, 60Hz, MCCB, 50KAIC

1 SCHEDULE OF LOADS



FROM THE OFFICE:  
**PHYSICAL PLANNING AND DEVELOPMENT OFFICE**  
1F 2ND FLOOR (PHYSICAL PLANNING) BUILDING, BATANGAS STATE UNIVERSITY  
CITY OF BATAVIA, 3204 LOROCS 1267E  
TEL: 043-321-1000, 321-1001

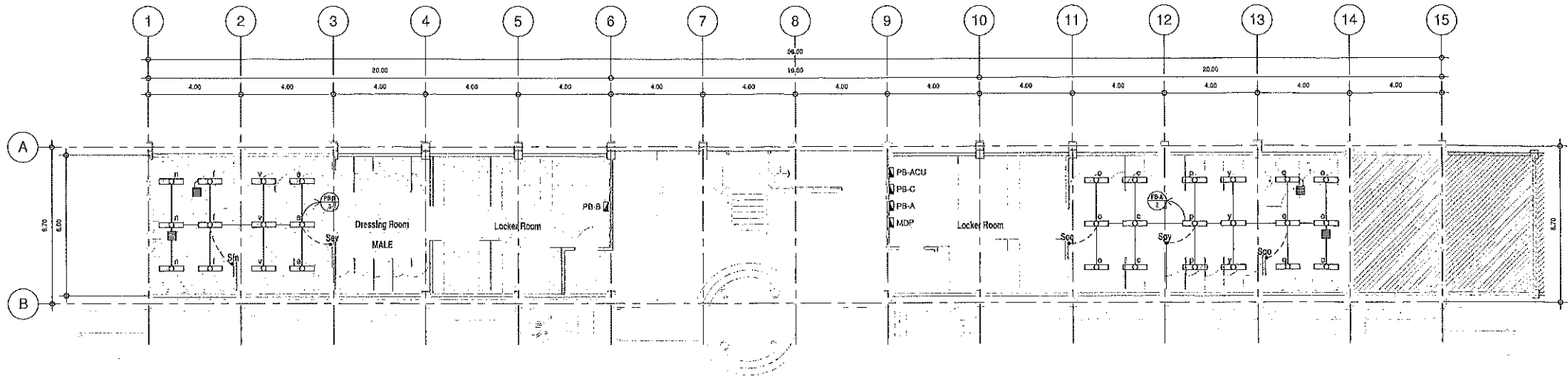
DRAWN BY: **MAY L. DAYANG**  
PROFESSIONAL ELECTRICAL ENGINEER  
PREPARED BY: **JASON M. MONTILLAN**  
ELECTRICAL ENGINEER

SIGNED AND SEALED BY:  
**PROFESSIONAL ELECTRICAL ENGINEER**  
PROJECT TITLE:  
**SWIMMING POOL (ELECTRICAL PLAN)**  
LOCATION: **MISU - CITY OF BATAVIA, ILOCOS NORTE**

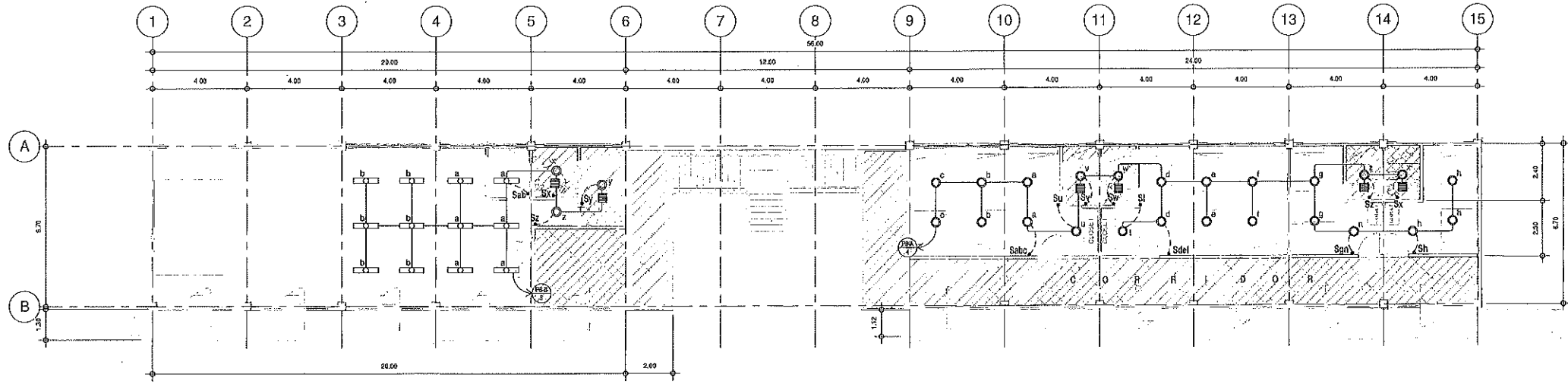
CONFORME:  
**RECOMMENDING APPROVAL:**  
**PHYSICAL PLANNING OFFICE**

APPROVED BY:  
**PHYSICAL PLANNING OFFICE**

SHEET CONTENTS:  
SHEET NO: **E-3**



1 GROUND FLOOR EXHAUST FAN OUTLET PLAN  
1 : 100 meters



2 SECOND FLOOR EXHAUST FAN OUTLET PLAN  
1 : 100 meters



FROM THE OFFICE:  
**PHYSICAL PLANNING AND DEVELOPMENT OFFICE**  
37 332 ADMINISTRATION BLDG., MARINO MANOCOS STATE UNIVERSITY  
CITY OF BATAC, 2900 LUGOZ NORTH  
TEL: 043-750-3131

DRAWN BY:  
JUAN L. BAYANG  
DRAFTSMAN  
PREPARED BY:  
AMOR M. SANTIALLAN  
ELECTRICAL ENGINEER

SIGNED & SEALED BY:  
PROFESSIONAL ELECTRICAL ENGINEER  
PRO NO.:  
PTR:  
PRACTICE NO.:  
DATE:  
TITLE:

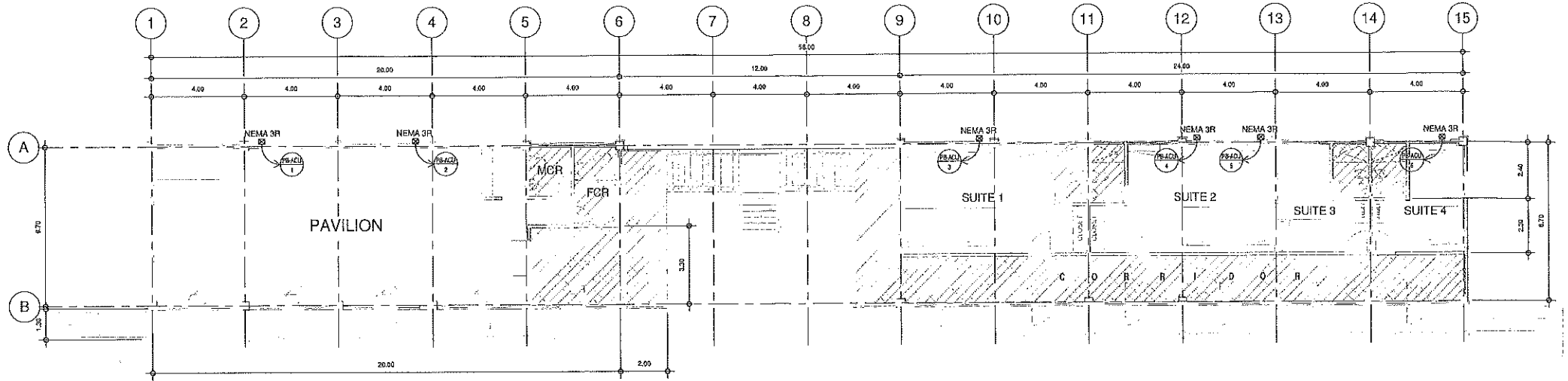
PROJECT TITLE:  
**SWIMMING POOL (ELECTRICAL PLAN)**  
LOCATION: BAYAN - CITY OF BATAC, ILOCOS NORTH

CONFORME:  
RECOMMENDING APPROVAL:  
REYNOLD S. SANTIALLAN  
DIRECTOR

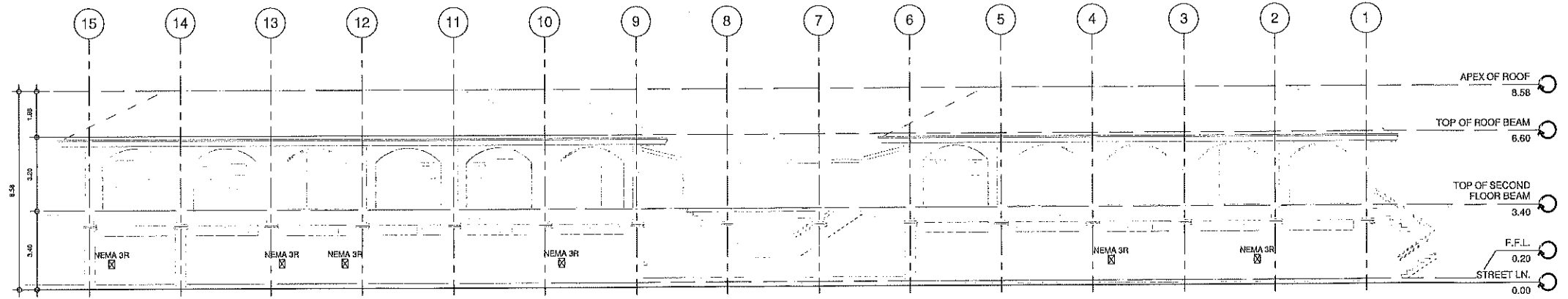
APPROVED BY:  
JUAN L. BAYANG  
UNIVERSITY PLANNING

SHEET CONTENTS:  
DATE: 10/10/2023

SHEET NO:  
E-2



1 SECOND FLOOR ACU OUTLET PLAN  
1 : 100 meters



2 REAR ELEVATION  
1 : 100 meters



FROM THE OFFICE:  
**PHYSICAL PLANNING AND DEVELOPMENT OFFICE**  
2/F 200 ADMINISTRATION BLDG., MARANG MAUNRES STATE UNIVERSITY  
CITY OF BATAANG LUCOS NORTE  
TEL: 46 (0)770-3111

DRAWN BY:  
JEAN A. DAVAYO  
ENYTS/DAH  
PREPARED BY:  
JACOB M. SANTIAGO  
ELECTRICAL ENGINEER

SIGNED & SEALED BY:  
PROFESSIONAL ELECTRICAL ENGINEER  
FRIC AG: \_\_\_\_\_  
PTEL: \_\_\_\_\_  
EXPIRES: \_\_\_\_\_  
DATE: \_\_\_\_\_  
TEL: \_\_\_\_\_

PROJECT TITLE:  
**SWIMMING POOL (ELECTRICAL PLAN)**  
LOCATION: MMSU - CITY OF BATAANG, ILOCOS NORTE

CONFORME:  
RECOMMENDING APPROVAL:  
ROMEL E. JUANES  
ELECTRICAL ENGINEER

APPROVED BY:  
JACOB M. SANTIAGO  
PHYSICAL PLANNING AND DEVELOPMENT OFFICE

SHEET CONTENTS:  
SHEET NO:  
E-1