	MARIANO MARCOS STATE UNIVERSITY Procurement Division		Document Code	PD-FRM-002
	Request for Quotation (RFQ) (Goods and Services)		Revision No.	5
			Effectivity Date	April 20, 2022

REQUEST FOR QUOTATION (RFQ)

Date: July 18, 2022
 PR No. 2022-07-262 (01101101) COM

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 30 days upon receipt of the Notice to Proceed or Purchase Order.

For any clarification, you may email us at bac@mmsu.edu.ph.


NATHANIEL R. ALIBUYOG
 BAC Chair

ITEM	QTY	Unit	ITEM DESCRIPTION	ABC/unit	UNIT PRICE
	1	unit	Multi-Split type wall mounter - variable frequency drive type (inverter) ACU, Cooling Capacity: Btu/h 18,000+18,000, Kj/h 19,080+19,080, TR 3.0, Outdoor Unit Btu/h, 36,000, HP 4.0, V/hz/ph 220/60/1	108,000.00	
	3	unit	Split type wall mounted - variable frequency drive type (inverter) ACU, Cooling Capacity: Btu/h 24,000, Kj/h 25,440, TR 2.0, Outdoor Unit Btu/h, 24,000, HP 2.5, V/hz/ph 220/60/1	68,000.00	

TOTAL ESTIMATED BUDGET: 312,000.00

REMARKS/NOTE: Please conduct actual site visit before quotation. Include Installation. Include excess copper tubes and other materials

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Air-Conditioning Unit Schedule									
Designation	Location	Qty	Description	Cooling Capacity			Outdoor Unit Blu/h	HP	Vihz/ph
				Blu/h	K/h	TR			
ACU 1	ROOM 3 As Shown	1	Multi-Split Type Wall Mounted - Variable Frequency Drive Type (inverter) ACU Similar to Daikin, Kolin, Carrier or LG	18,000 + 18,000	18,060 + 18,060	3.0	36,000	4.0	220/60/1
ACU 2	ROOM 1 & ROOM 2 As Shown	3	Split Type Wall Mounted - Variable Frequency Drive Type (inverter) ACU Similar to Daikin, Kolin, Carrier or LG	24,000	26,440	2.0	24,000	2.5	220/60/1

1 SCHEDULE OF EQUIPMENT

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: LAGOS CITY, PHILIPPINES
 18.178° NORTH LATITUDE
 120.532° EAST LONGITUDE
 ELEVATION = 8.00m
 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 @ 60% RH AND 0.0074 kg moisture / kg dry air

BUILDING TYPE = NON RESIDENTIAL
 Wall Coefficient of Heat Transfer U_{wall}

U_{wall} = 1" PLASTER + 8" CHB + 1" PLASTER
 R_{wall} = 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:
 R_O = 0.04 m² K / W [outside air resistance]
 R_I = 0.13 m² K / W [inside air resistance]
 Total R_{wall} = 0.04 + 0.213 + 0.13 = 0.383 m² K / W
 U_{wall} = 1 / R_{wall} = 1 / 0.383 m² K / W = 2.61 W / m² K

Roof Coefficient of Heat Transfer U_{roof}

U_{roof} = RIBBED TYPE WITH 25mm INSULATION + 1/4" Cement BOARD or HARDIFLEX
 R_{roof} = 0.92 m² K / W + 0.06 m² K / W = 0.88 m² K / W
 Consider outside air, inside air and air space resistance:
 R_O = 0.04 m² K / W [outside air resistance]
 R_S = 0.22 m² K / W [air space resistance]
 R_I = 0.13 m² K / W [inside air resistance]
 Total R_{roof} = 0.04 + 0.92 + 0.22 + 0.09 + 0.13 = 1.37 m² K / W
 U_{roof} = 1 / R_{roof} = 1 / 1.37 m² K / W = 0.73 W / m² K

Door Coefficient of Heat Transfer U_{door}

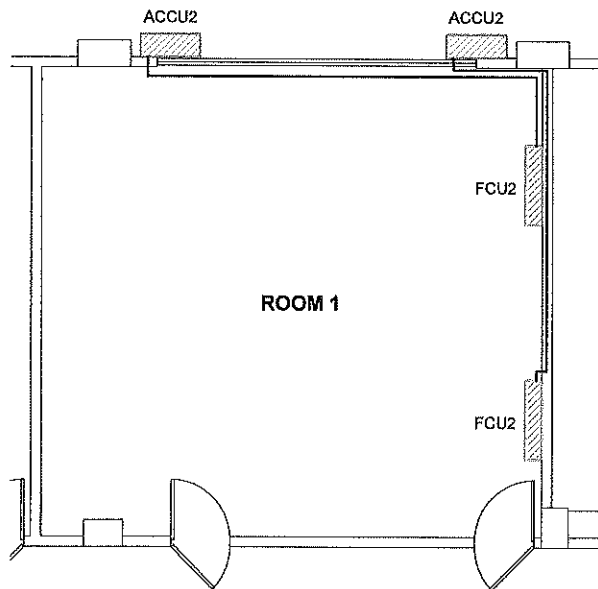
U_{door} = 2" WOODEN HARD DOOR
 R_{door} = 0.315 m² K / W
 Total R_{door} = 0.04 + 0.315 + 0.13 = 0.485 m² K / W
 U_{door} = 1 / R_{door} = 1 / 0.485 = 2.06 W / m² K

Window Glass Coefficient of Heat Transfer U_{glass}

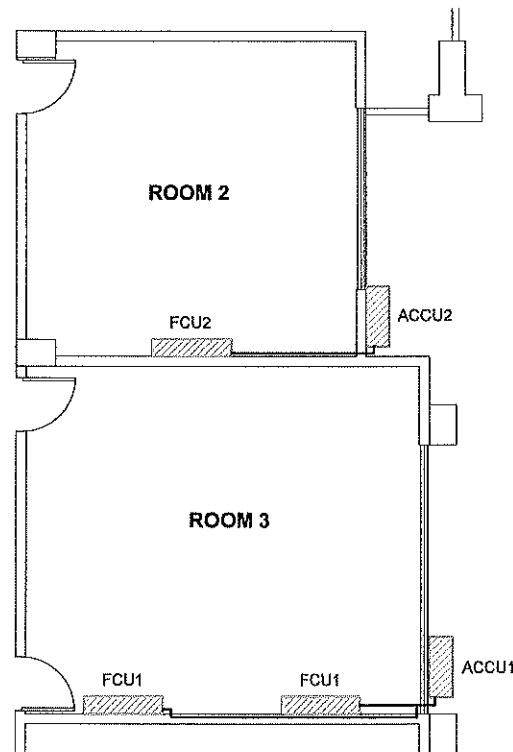
U_{glass} = SINGLE GLASS, NO STORM SASH, LOW EMISSANCE COATING, WITH INDOOR SHADE
 U_{glass} = 5.885 W / m² K [No storm sash, no shade]
 U_{glass} = 4.599 W / m² K [No storm sash, indoor shade]
 Shading Coefficient = 0.23
 COLOR ADJUSTMENT FACTOR = 1.0
 F-VALUE = 1.0

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.

4 GENERAL NOTES

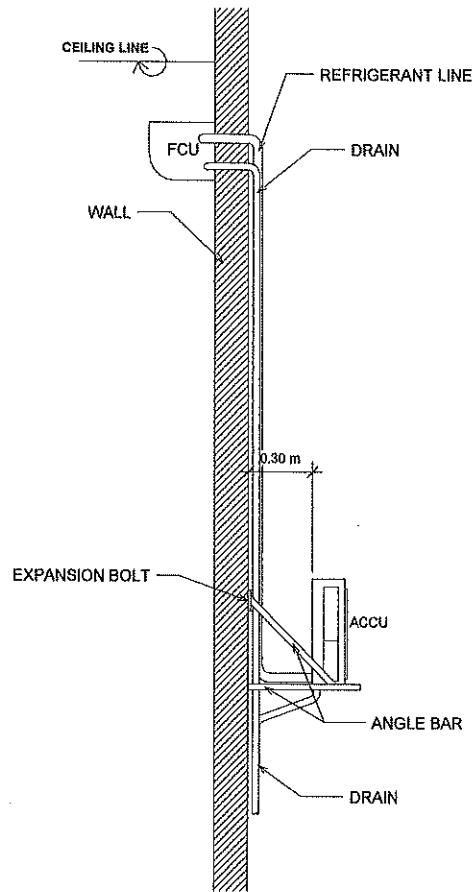


2 PARTIAL FLOOR PLAN
 1:50 meters

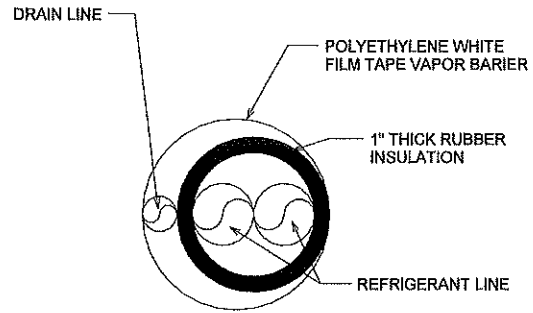


3 PARTIAL FLOOR PLAN
 1:50 meters

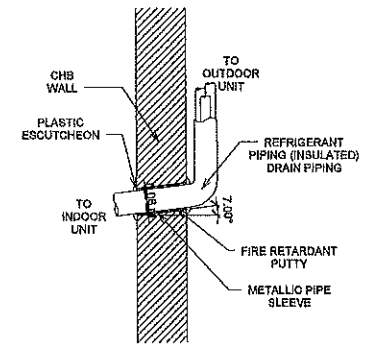
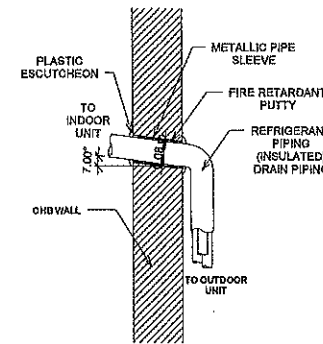
	FROM THE OFFICE:	DRAWN BY:	SIGNED & SEALED BY:	PROJECT TITLE:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	REVISION AND DATE:	SHEET NO.:
	PHYSICAL PLANNING AND DEVELOPMENT OFFICE 2F 202 ADMINISTRATION BLDG. HARIANO MARCOS STATE UNIVERSITY CITY OF BATAO, 2405 ILOCOS NORTE TELEFAX: +63 (77) 792-3101	[Signature] PREPARED BY: DENNIS CLYDE S. AGUILAR TECHNICAL ENGINEER	[Signature] PROFESSIONAL MECHANICAL ENGINEER PRO NO. / VALIDITY: PTR: PLACE ISSUED: DATE: TMR:	PROVISION OF AIR-CONDITIONING UNIT AT COLLEGE OF MEDICINE LOCATION: MMSU COM-CITY OF BATAO, ILOCOS NORTE	[Signature] POLYGRAPHIC ENGINEER RECOMMENDING APPROVAL: [Signature]	[Signature] [Signature]	-AS SHOWN- <small>Drawings and specifications and other contract documents shall be read in conjunction with the Instructions to Bidders, and the General Conditions of Contract. The contractor shall be responsible for the accuracy of the drawings and specifications. The contractor shall be responsible for the accuracy of the drawings and specifications. The contractor shall be responsible for the accuracy of the drawings and specifications.</small>		



SIDE VIEW



REFRIGERANT LINE DETAILS



2 PIPE THROUGH WALL INSTALLTION

1 AIR-CONDITIONING UNIT DETAIL



FROM THE OFFICE:
PHYSICAL PLANNING AND DEVELOPMENT OFFICE
 27 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY
 CITY OF BATAO, 3304 ILOCOS NORTE
 TELEFAX: +63 (77) 792-3191

DRAWN BY: *[Signature]*
 PREPARED BY: *[Signature]*
 DENNIS BLAISE G. AGANTILARO
 ARCHITECT/ENGINEER

SIGNED & SEALED BY:
 PROFESSIONAL MECHANICAL ENGINEER
 PRO. NO. / VALIDITY:
 PIR: /
 PLACE ISSUED:
 DATE:
 TIN:

PROJECT TITLE:
PROVISION OF AIR-CONDITIONING UNIT AT COLLEGE OF MEDICINE
 LOCATION: MARU COM-CITY OF BATAO, ILOCOS NORTE

CONFORME: *[Signature]*
 FOLGADO B. JOYES, JR.
 RECOMMENDING APPROVAL:
 ROMEO B. OUSTREY
 ENGINEER

APPROVED BY:
[Signature]
 SHIRLEY G. AGUIRRE
 ARCHITECT/ENGINEER

SHEET CONTENTS:
 -AS SHOWN-
Drawings and specifications shall be read in conjunction with the approved contract documents and other contract documents. The contractor shall be responsible for the accuracy of the information shown on the drawings and specifications. The contractor shall be responsible for the accuracy of the information shown on the drawings and specifications. The contractor shall be responsible for the accuracy of the information shown on the drawings and specifications.

REVISION AND DATE:

SHEET NO:
M-3