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

REQUEST FOR QUOTATION (RFQ)

Date: May 23, 2022
 PR No. 2022 - 05 - 177 (052006411)

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
	2	unit	Split Type Wall Mounted – VFD Type (Inverter) Btu/h-18,000 Kj/h- 19,080 HP- 2.0 V/hz/ph- 230/60/1 Including Installation	50,000.00	

TOTAL ESTIMATED BUDGET: 100,000.00

REMARKS/NOTE: see attached provision of Air Conditioning Unit

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: _____
 Signature over Printed Name
 Tel. No./Cellphone No./e-mail address

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**MARIANO MARCOS STATE UNIVERSITY
COOLING LOAD ESTIMATES**

Project: PROVISION OF AIR CONDITIONING UNIT
Location: USC STUDENT CENTER
Date: 12-May-22

DESIGN CRITERIA: 2017 ASHRAE Handbook Fundamentals

Outdoor Temp: Summer: 95.0 °F db; 82.4 °F wb; 60.0 %RH ho= 38.70 btu/lb
 Winter: - °F db; - °F wb; - %RH hi= btu/lb
Indoor Temp: Summer: 75.0 °F db; 55.0 %RH
 Winter: - °F db; - °F wb; - %RH
Hottest Month: May Winter: ΔT = °F
Summer: ΔT = 15.0 °F Δh =

Elevation above sea level: 26,248 feet
 Air Density Ratio
 Air Density 0.077 lb/ft³
 Air Factor - Btu/h/cfm-°F
 Latitude 18 N

Basis for Design: 2017 ASHRAE Handbook Fundamentals

Factors:
People: Sensible: 237.8 btu/h per person Latent: 153.5 btu/h per person
Lights: Type: Flourescent W/m²: Wattage: 324.0
 Fsa: 1.0 Ful: 1.0
Appliances: 1,358.0 Watts
Power: n/a Watts

Infiltration: Not Considered

Occupancy Schedules:

People:	Wattage	QTY	Total W
<u>21 people @ 6 hrs</u>	83	1	83.0
<u>8 hrs</u>	43	5	215.0
<u>8 hrs</u>	550	1	550.0
<u>8 hrs</u>	60	6	360.0
<u>8 hrs</u>	30	5	150.0

Cooling Load Factors (CLF):
 People: 0.14 (21 people to stay 4 hours after 8:00 am)
 Lights: 1.00
 Appliances: 1.00
 Power: 1.00
Total = 1,358.0

Prepared by:


DENNIS CLYDE G. ACANTILADO, RMEE, RMP
 Mechanical Engineer
 MAY 17, 2022

MARIANO MARCOS STATE UNIVERSITY
COOLING LOAD ESTIMATES

Project: PROVISION OF AIR CONDITIONING UNIT
 Location: USC STUDENT CENTER
 Date: 12-May-22
 Space: USC OFFICE
 Time of Day: 16:00 4:00pm

Conduction:

Surface	Facing	QTY	Dimension		Area, m ²	Net Area, ft ²	U	Cooling		
			Length	Width				AT	CLTD	CLF
Wall	West	2	4.5	2.5	22.5	145.758	0.409	29		1,728.83
Wall Partition	North	1	7.2	2.5	18	193.769	0.386	20		1,495.90
Wall Partition	South	1	7.2	2.5	18	193.769	0.386	20		1,495.90
Wall Partition	East	2	4.5	2.5	22.5	196.999	0.386	20		1,520.83
Floor										0.00
Door										0.00
Roof	H	1	7.2	9	64.8	687.569	0.363	20		5,064.95
Roof										0.00
Roof										0.00
Glass	West	2	3.2	1.4	8.96	96.454	0.566	55		3,002.61
Glass Door	East	2	2.1	1	4.2	45.213	0.566	20		511.81
Subtotal =										14,820.24

Solar Transmission

Surface	Facing	Area, m ²	Net Area, ft ²	SHGF	SC	CLF	btuh
Glass	West	2	8.96	215.00	0.5	0.82	with shading 8,502.42
Glass							0.00
Glass							0.00
Subtotal =							8,502.42

Internal Sensible Heat

Source	Quantity	Factor	CLF	btuh
Occupants	21	237.80	0.14	689.13
Lights	324	1.00	1.00	1,704.84
Appliances	1358	1.00	1.00	4,630.78
Power	0			0.00
Subtotal =				6,434.75
Total Sensible Cooling =				29,757.41

Internal Latent Heat

Source	Quantity	Factor	CLF	btuh
Occupants	21	153.50	1.00	3,223.50
Lights	324			0.00
Appliances	1358			0.00
Power				0.00
Total Latent Cooling =				3,223.50

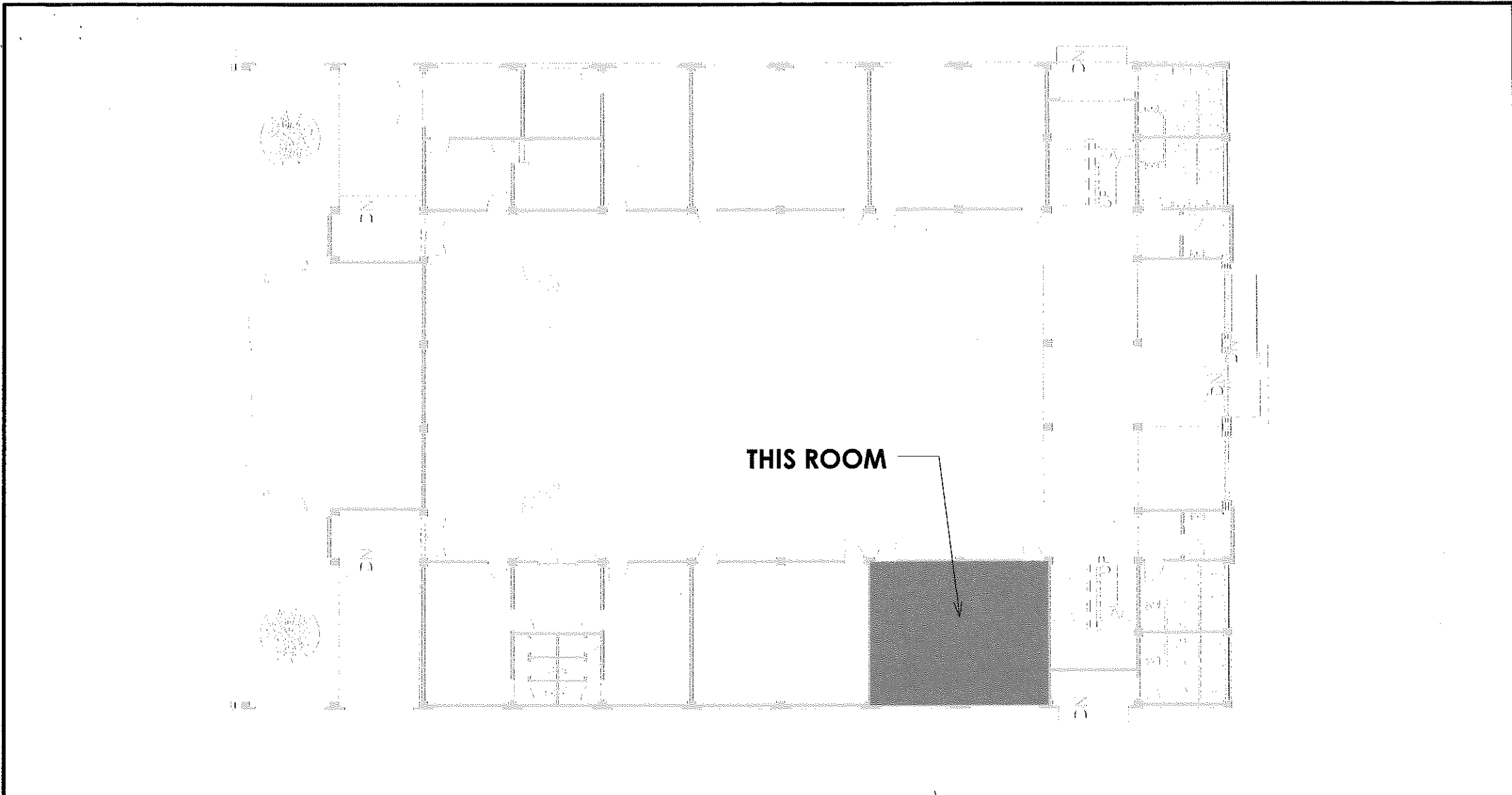
Type	Qty	BTUh	Rated Cooling Capacity		
			TR	KJ/H	HP
Calculated		32,980.91	2.75	34,959.77	9.66
Selected	2	16,490.46	1.37	17,479.88	4.83
	2	18,000.00	1.50	19,000.00	5.27

Note: 1. the selected ACU shall have a cooling load not less than the calculated cooling load in this spreadsheet.
 2. select an inverter type or variable frequency drive ACU, 230V / 1 phase / 60 Hz




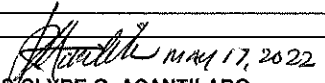
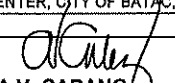


Prepared by:

Dennis Clyde G. Acantilado
 DENNIS CLYDE G. ACANTILADO
 Mechanical Engineer
 MMSU PPDO

Total Cooling Load = 32,980.91


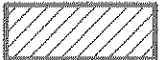


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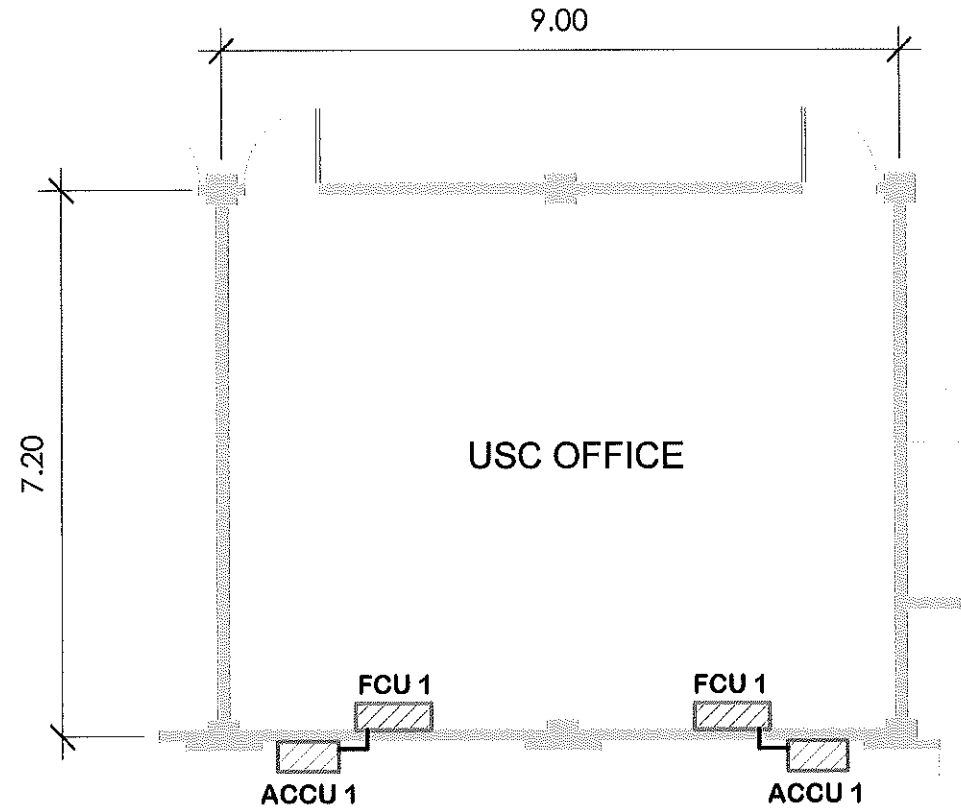
	DRAWN BY:  BJAY A. DAYANG DRAFTSMAN I	PROJECT TITLE: PROVISION OF AIR-CONDITIONING UNIT OF USC OFFICE	CONFORME:  MARIA DELENAH ADRIATICO USC OFFICE, STUDENT CENTER	SHEET CONTENT:	SHEET NO.:
	PREPARED BY:  DENNIS/CLYDE G. ACANTILADO MECHANICAL ENGINEER	CHECKED/REVIEWED BY:  AIDA V. CABANG ARCHITECT IV, CHIEF-PHYSICAL PLANNING SECTION	RECOMMENDING APPROVAL:  ROMEO R. BULDULAO DIRECTOR, PPDO	APPROVED BY:  SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	

Air-Conditioning Unit Schedule								
Designation	Location	Qty	Description	Cooling Capacity			HP	V/hz/ph
				Btu/h	Kj/h	TR		
ACU 1	USC OFFICE	2	Split Type Wall Mounted - VFD Type (Inverter) Similar to Daikin, Kolin, Carrier or LG	18,000	19,080	1.5	2.0	230/60/1




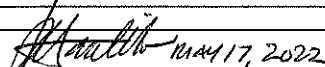
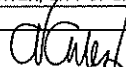

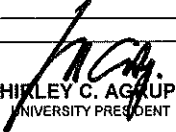
SCHEDULE OF EQUIPMENT

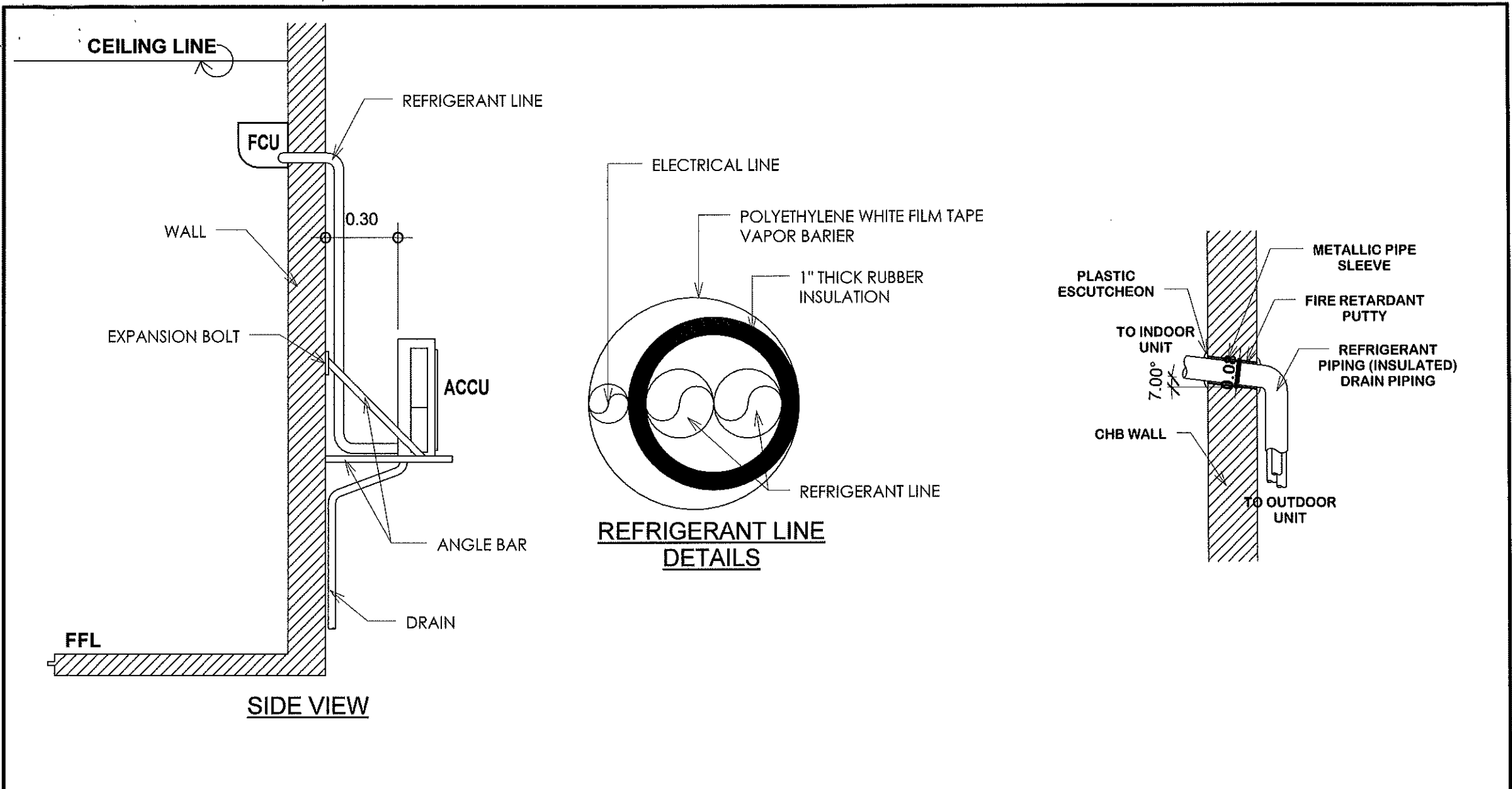
-  - OUTDOOR UNIT (ACCU)
-  - INDOOR UNIT (FCU)


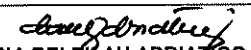
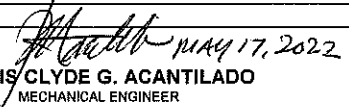
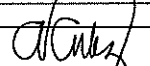
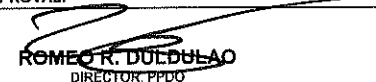
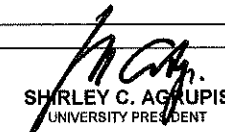
LEGEND / SYMBOL



PARTIAL FLOOR PLAN
SCALE 1:100m

	DRAWN BY:  BJAY A. CAYANG DRAFTSMAN I	PROJECT TITLE: PROVISION OF AIR-CONDITIONING UNIT OF USC OFFICE	CONFORME:  MARIA DELEKAH ADRIATICO USC OFFICE, STUDENT CENTER	SHEET CONTENT:	SHEET NO:
	PREPARED BY:  DENNIS CLYDE G. ACANTILADO MECHANICAL ENGINEER	CHECKED/REVIEWED BY:  AIDA V. CABANG ARCHITECT IV, CHIEF-PHYSICAL PLANNING SECTION	RECOMMENDING APPROVAL:  ROMEO R. DULONAO DIRECTOR	APPROVED BY:  SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	



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	PREPARED BY:  DENNIS CLYDE G. ACANTILADO MECHANICAL ENGINEER		LOCATION: MMSU-STUDENT CENTER, CITY OF BATAC, ILOCOS NORTE CHECKED/REVIEWED BY:  AIDA V. CABANG ARCHITECT IV, CHIEF-PHYSICAL PLANNING SECTION	RECOMMENDING APPROVAL:  ROMEO R. DULDULAO DIRECTOR, PPDO	APPROVED BY:  SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT