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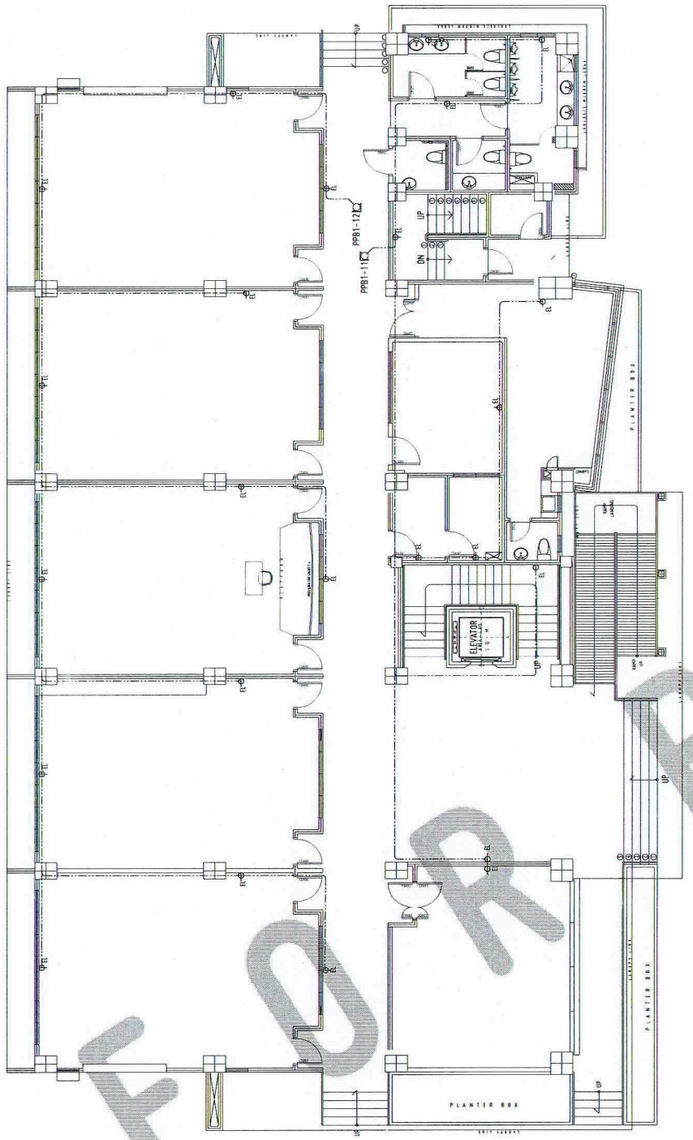
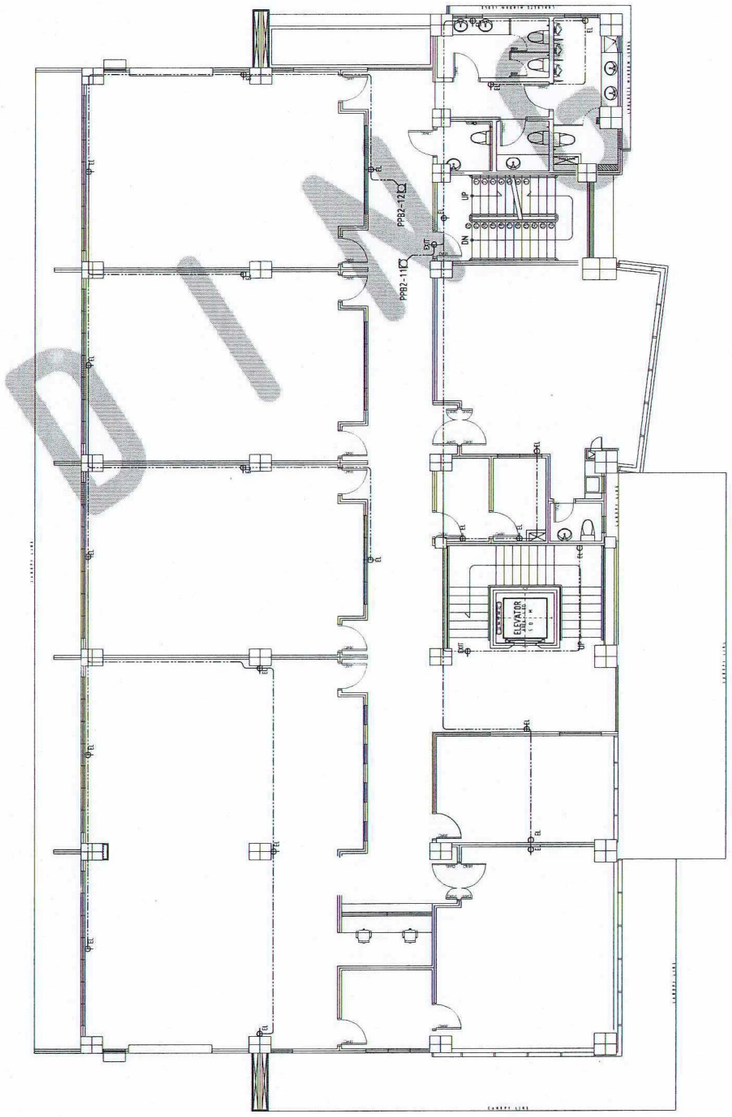


EMERGENCY LIGHTING LAYOUT - 1F

1:100

SCALE

E 6 1



EMERGENCY LIGHTING LAYOUT - 2F

1:100

SCALE

E 6 2

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UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
CAGAYAN DE ORO CAMPUS
INFRASTRUCTURE PLANNING AND FACILITY DEVELOPMENT UNIT
CLARO M. RECTO AVENUE, LAPASAN, CAGAYAN DE ORO CITY 9000
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WEBSITE: www.ustp.edu.ph

PROFESSIONAL ELECTRICAL ENGINEER

PROJECT	PROPOSED CONSTRUCTION OF SMART ACADEMIC BUILDING PHASE 1, JASAAN CAMPUS
LOCATION	USTP JASAAN CAMPUS, MISAMIS ORIENTAL
OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, INFRASTRUCTURE PLANNING & FACILITIES DEVELOPMENT OFFICE

RECOMMENDING APPROVAL:
ATTY. ERWIN B. BUCIO
VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
EMERGENCY LIGHTING LAYOUT 1F
EMERGENCY LIGHTING LAYOUT 2F

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DATE DRAWN: 10.01.2025
FNT:

E6

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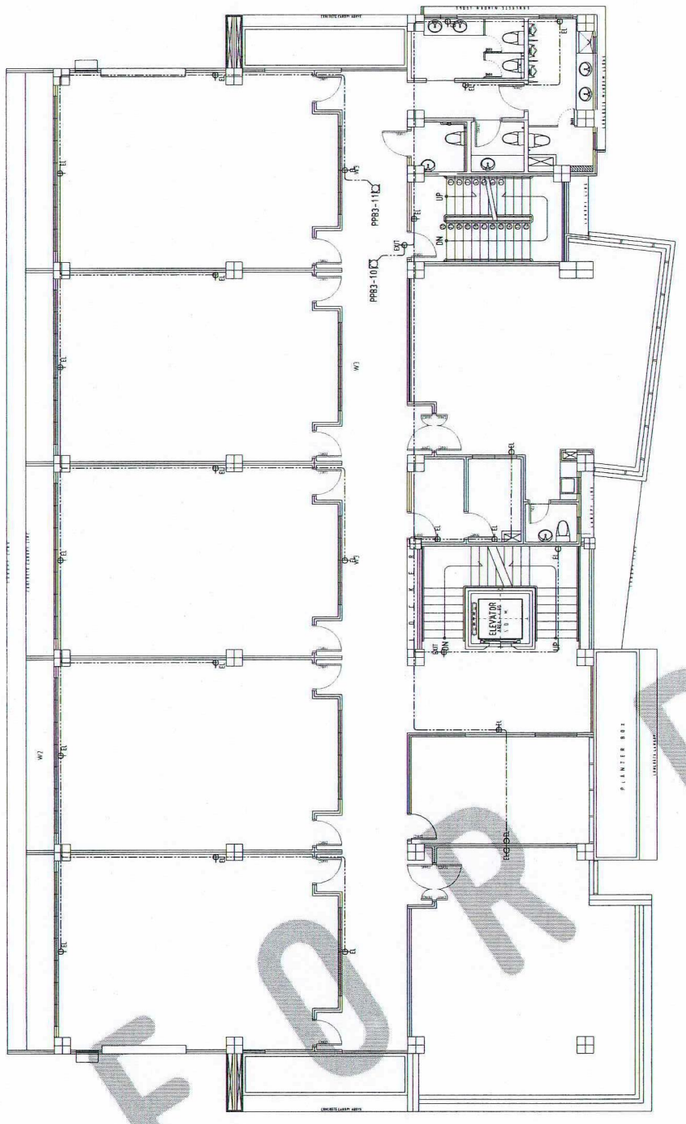
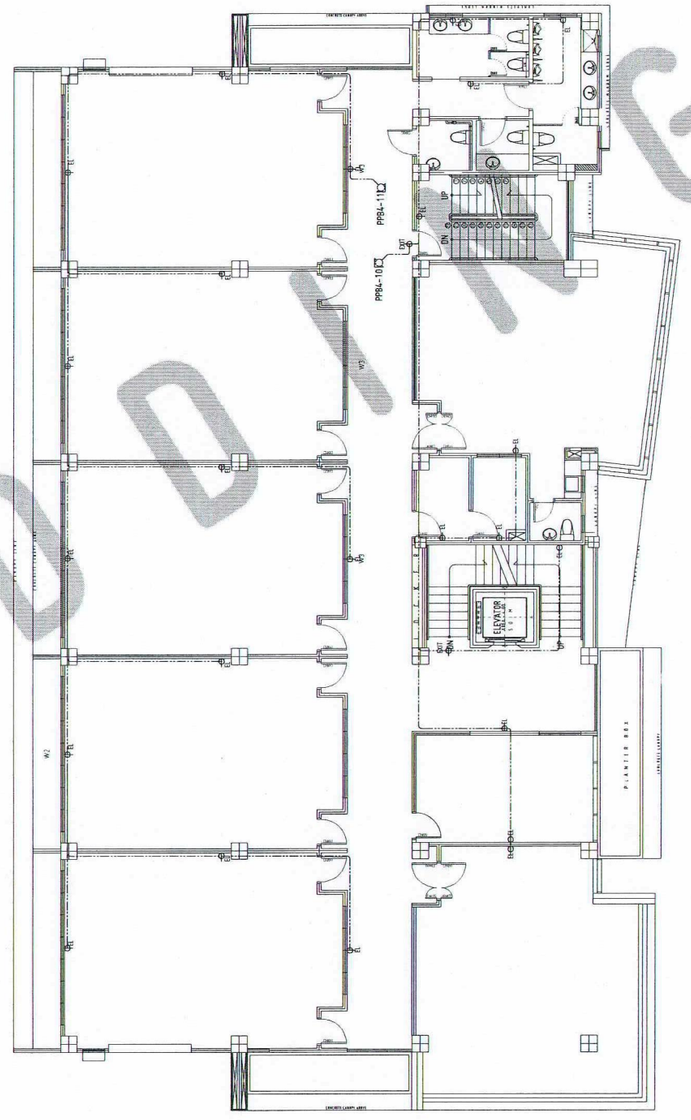


EMERGENCY LIGHTING LAYOUT – 3F

SCALE 1:100

E 7 1



EMERGENCY LIGHTING LAYOUT – 4F

SCALE 1:100

E 7 2

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SHEET CONTENTS:
EMERGENCY LIGHTING LAYOUT 3F
EMERGENCY LIGHTING LAYOUT 4F

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DATE DRAWN:
10.01.2025

FNT:

E7

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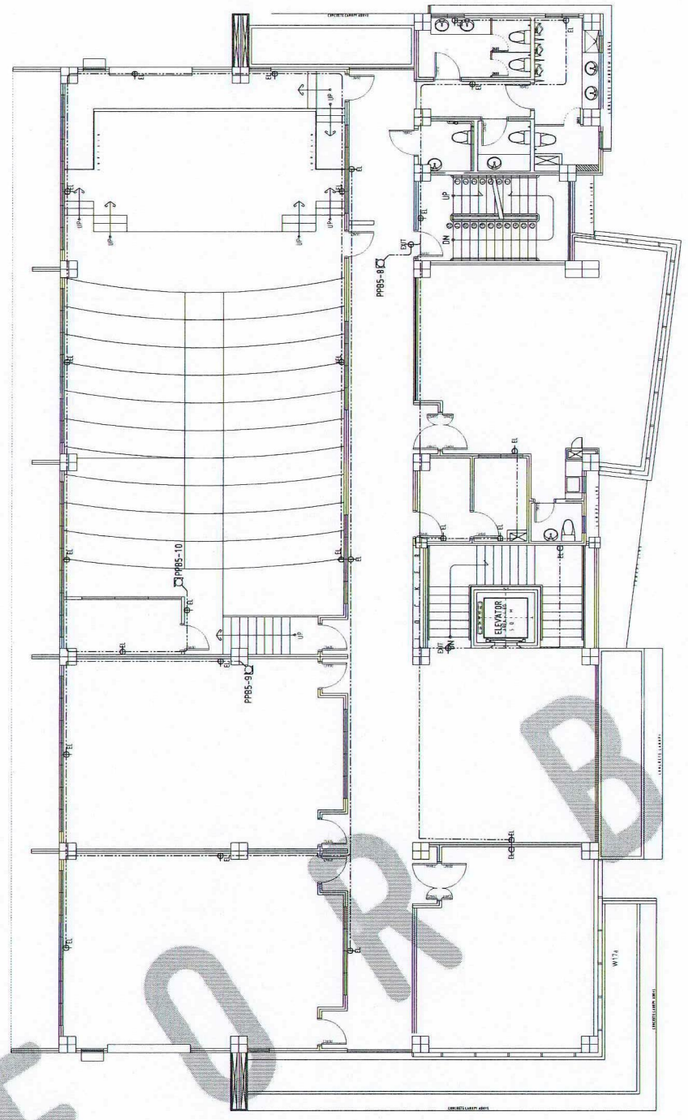
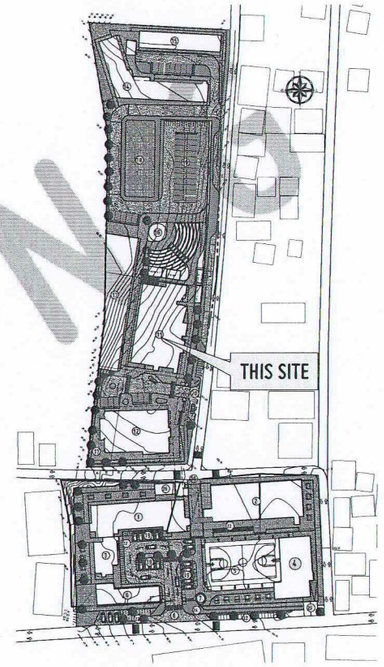


EMERGENCY LIGHTING LAYOUT - 5F AND ROOF DECK

SCALE 1:100

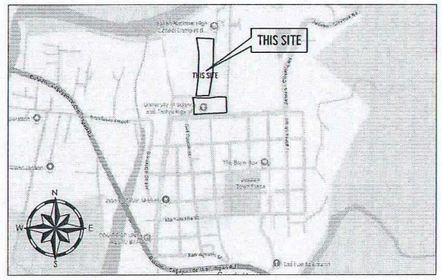
E 8 1



E 8 2

LOCATION PLAN

NOT DRAWN TO SCALE



E 8 3

VICINITY MAP

NOT DRAWN TO SCALE

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PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
EMERGENCY LIGHTING LAYOUT 5F AND ROOF DECK
LOCATION PLAN
VICINITY MAP

DRAWN BY:
DATE DRAWN: 10.01.2025
FNT:

E8

GENERAL NOTES:

1. ALL WORKS SHALL COMPLY WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE RULES & REGULATIONS OF THE NATIONAL AND LOCAL AUTHORITY CONCERNED IN THE ENFORCEMENT OF ELECTRICAL LAWS AND ORDINANCES AND THE REGULATIONS OF THE UTILITY COMPANY CONCERNED.
2. POWER SERVICE TO THE BUILDING SHALL BE 230 VOLTS 3 PHASE 3 WIRE & GROUND.
3. SMALLEST CONDUCTOR FOR POWER AND LIGHTING SHALL BE 3.5mm2 THHN AND SMALLEST RACEWAY SHALL BE 15mm DIA. TRADE SIZE. CONDUCTOR SHALL BE TYPE THHN EXCEPT AS OTHERWISE REQUIRED BY THE DRAWING AND INSULATED FOR 600 VOLTS.
4. GROUNDING WIRE SHALL BE PROVIDED TO ALL EQUIPMENTS, OUTLETS AND LIGHTING CIRCUITS AND ALL NON-CURRENT CARRYING METAL PARTS.
5. MATERIALS AND EQUIPMENT TO BE USED SHALL BE NEW AND OF APPROVED TYPE.FOR BOTH LOCATION AND PURPOSE INTENDED, SUBMIT SAMPLES OF MATERIALS TO THE ARCHITECT/ DESIGN ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
6. NO BRANCH CKT. SHALL HAVE A LOAD OF MORE THAN 80% OF ITS RATING.
7. EMERGENCY LIGHTING SHALL BE PROVIDED WITH A DEDICATED CIRCUIT.
8. CIRCUIT BREAKERS SHALL BE BOLT ON TYPE. USE ONLY ONE BRAND ALL THROUGHOUT.
9. MOUNTING HEIGHT SHALL BE AS FOLLOWS:
   a. LIGHT CONTROL SWITCH - 1.52 ABOVE FINISHED FLOOR
   b. CONVENIENCE OUTLET - 0.30 ABOVE FINISHED FLOOR
   c. SPECIAL PURPOSE OUTLET - 0.30 ABOVE FINISHED FLOOR OR AS REQUIRED BY THE ARCHITECT
   d. PANEL BOARDS, FIRE ALARM-PANE 1.80 FROM TOP OF PANEL TO FINISHED FLOOR
10. ALL WORKS SHALL BE COORDINATED WITH THE ARCHITECT AND OTHER TRADE DISCIPLINE PRIOR TO INSTALLATION.
11. CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS SIGNED AND SEALED BY PROFESSIONAL ELECTRICAL ENGINEER.
12. CONTRACTOR TO PERFORM ALL TEST NECESSARY BUT NOT LIMITED TO THE FOLLOWING.
    a. CABLE INSULATION INTEGRITY TEST
    b. PHASE SEQUENCE TEST
    c. LOAD TEST
    d. COMPLETE TEST FOR TRANSFORMER
13. ALL WIRES SHALL BE COLOR CODED AS FOLLOWS:
    PHASE - A - BLACK GROUND - GREEN
    PHASE - B - RED PHASE - C - BLUE
14. NO CHANGE OR MODIFICATION SHALL BE MADE ON THESE PLANS WITHOUT THE ENGINEER'S/OWNER'S WRITTEN COMMENT.
15. ALL MOTORS AND AIR-CONDITIONING UNITS MUST HAVE INDIVIDUAL ENCLOSED THERMAL MAGNETIC CIRCUIT BREAKER.
16. ENCLOSURE TYPE FOR PANEL BOARDS SHALL BE NEMA 3R FOR INDOORS AND NEMA 4X FOR OUTDOORS.
17. ALL CONVENIENCE OUTLETS SHALL BE TAMPER-RESISTANT (TRR), GFCI CONVENIENCE OUTLETS SHALL BE USED IN WET LOCATIONS.
18. EMERGENCY LIGHTING AND FIRE EXIT SIGNAGE OUTLETS SHALL BE CEILING-MOUNTED.

IMPORTANT NOTES

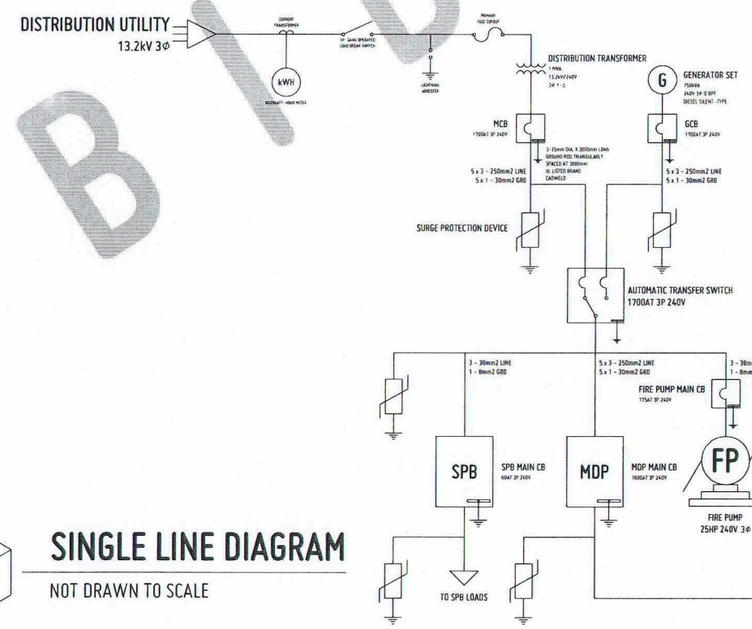
1. STRUCTURAL DESIGN/DETAILS OF PEDESTAL, DUCTBANK AND GENERATOR PADS SHALL BE COORDINATED WITH STRUCTURAL ENGINEER PRIOR TO IMPLEMENTATION
2. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER UTILITY COMPANY FOR TOTAL LOAD REQUIREMENTS OF THE PROJECT TO ASSURE AVAILABILITY OF 3-PHASE OR 1-PHASE TO BE SUPPLIED BY THE UTILITY COMPANY. THIS SHALL BE DONE PRIOR TO FABRICATION OR PURCHASE OF PANELBOARD & INSTALLATION OF SERVICE & FEEDERS.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF SERVICE PEDESTAL WITH EXISTING UTILITY POLE AT SITE & WITH ELECTRIC UTILITY COMPANY PRIOR TO IMPLEMENTATION. IN GENERAL, LOCATE PEDESTAL ON THE SIDE NEAR THE EXISTING POLE.
4. A=3.0M FOR PEDESTRIAN AREAS
   =3.7M FOR DRIVEWAYS SUBJECT TO CAR TRAFFIC
   =5.5M FOR DRIVEWAYS/STREET SUBJECT TO TRUCK TRAFFIC

PL	12 WATTS LED PIN LIGHT	FO	DUPLEX TAMPER RESISTANT RECEPTACLE (TRR) UNIVERSAL CONVENIENCE FLOOR OUTLET
	18W LED RECESSED CEILING MOUNTED LIGHT	EL	EMERGENCY LIGHT
	18W LED LIGHT WITH INDUSTRIAL HOUSING AND SUPPORT	EXIT	FIRE EXIT OUTLET
	1-32W T8 LED FLOURESCENT LIGHT MOUNTED TYPE WITH INDUSTRIAL HOUSING AND SUPPORT		AIR-COOLED CONDENSING UNIT (ACCU)
	1-32W T8 LED FLOURESCENT LIGHT RECESSED TYPE WITH INDUSTRIAL HOUSING AND SUPPORT	EF	EXHAUST FAN
	SIMPLEX UNIVERSAL CONVENIENCE OUTLET	CT LPB4	CIRCUIT HOMERUN
	DUPLEX TAMPER RESISTANT RECEPTACLE (TRR) UNIVERSAL CONVENIENCE OUTLET		PANEL BOARD
WP	DUPLEX TAMPER RESISTANT RECEPTACLE (TRR) UNIVERSAL CONVENIENCE OUTLET WITH WEATHERPROOF COVER		SERVICE PEDESTAL
GFCI	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER (GFCI) UNIVERSAL CONVENIENCE OUTLET		ENCLOSED CIRCUIT BREAKER

E 9 1

ELECTRICAL LEGEND AND SYMBOLS

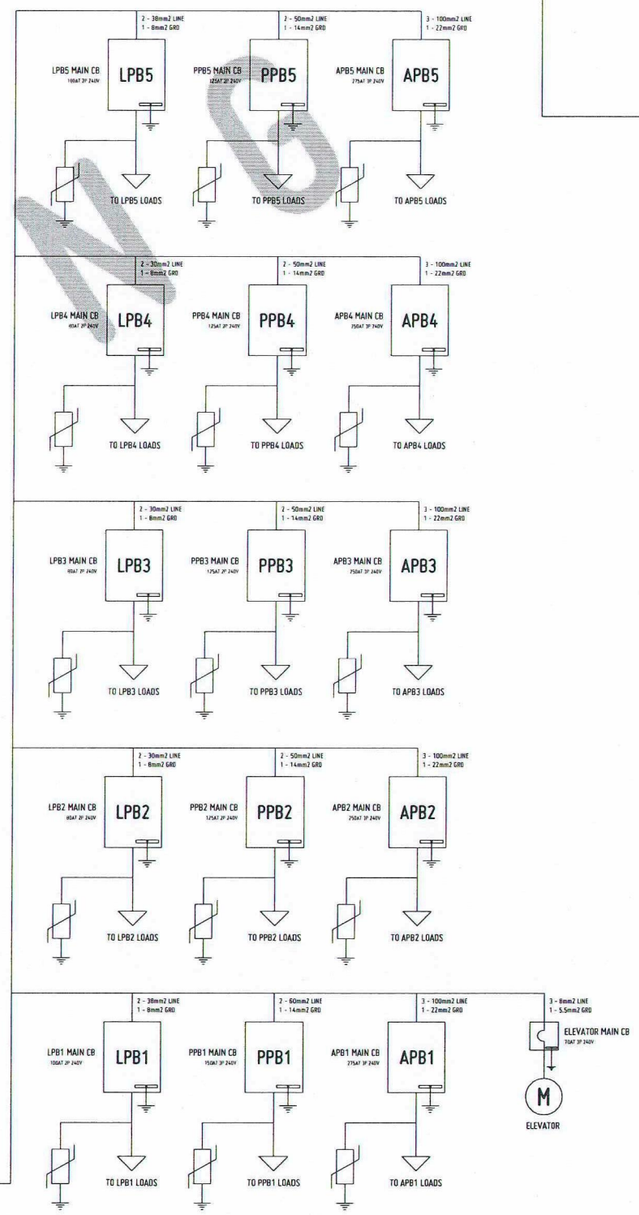
NOT DRAWN TO SCALE



E 9 2

SINGLE LINE DIAGRAM

NOT DRAWN TO SCALE



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PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
ELECTRICAL LEGEND AND SYMBOLS
SINGLE LINE DIAGRAM

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DATE DRAWN: 10.01.2025
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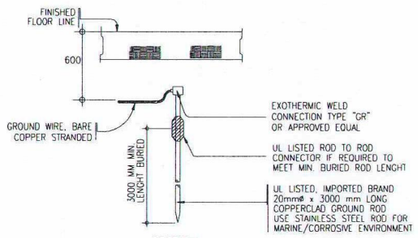
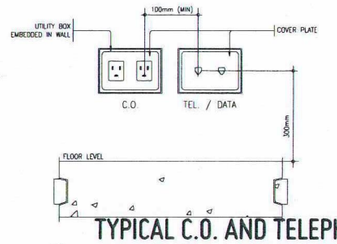


SECTION

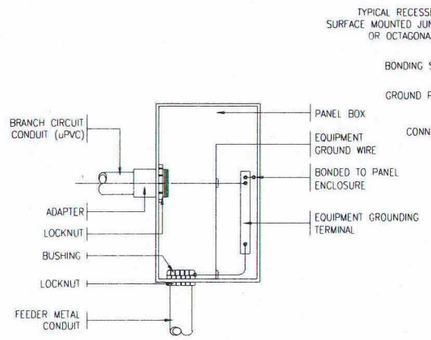
E 10 1 **TYPICAL GROUND ROD DETAIL**

NOTS

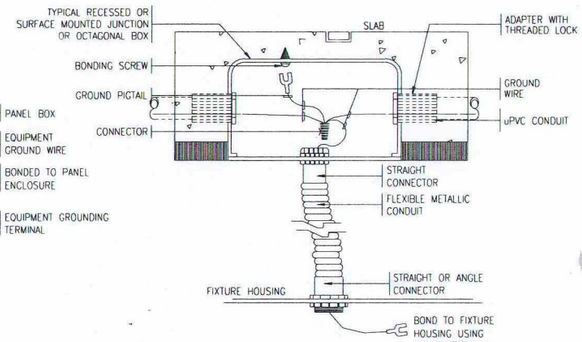


E 10 2 **TYPICAL C.O. AND TELEPHONE, DATA OUTLETS MOUNTING DETAILS**

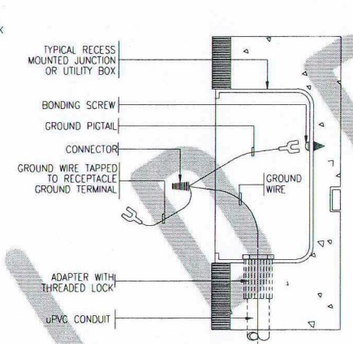
NOTS



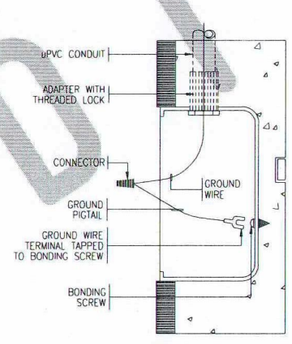
PANELBOARD



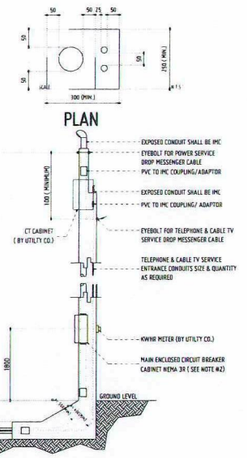
LIGHTING FIXTURE BOX



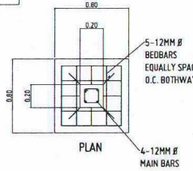
RECEPTACLE BOX



SWITCH BOX



SECTION

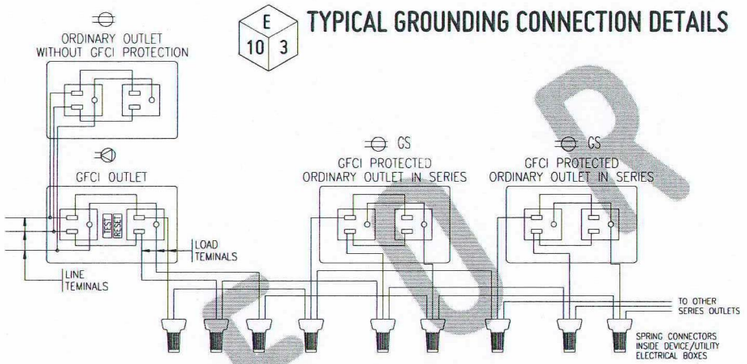


PLAN

PLAN

E 10 6 **SERVICE PEDESTAL DETAIL**

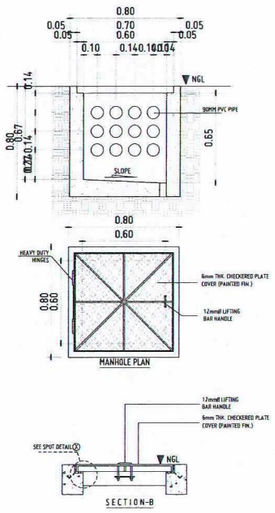
NOTS

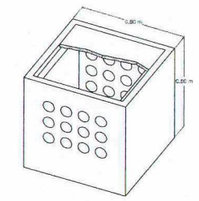


E 10 3 **TYPICAL GROUNDING CONNECTION DETAILS**

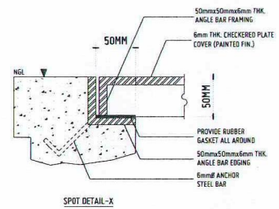
E 10 4 **CONV. OUTLET IN SERIES WITH GCFI OUTLET WIRING CONNECTION DETAIL**

NOTS





MANHOLE ISOMETRIC VIEW



SPOT DETAIL-X

E 10 5 **ELECTRICAL MANHOLE DETAIL**

SCALE: 1:20 MTS

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		LOCATION	USTP JASAAN CAMPUS, MISAMIS ORIENTAL					
		OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES					

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DESIGN ANALYSIS						
LOAD TYPE	VA PER LOAD	VOLTAGE	FLC PER PHASE (w/ DF)			
			AB	BC	CA	3Ø
LIGHTING OUTLET	78060.00	230	62.75	97.18	111.58	0.00
CONVENIENCE OUTLET	111360.00	230	102.57	159.81	148.54	0.00
AIRCON	350448.06	230	543.50	373.50	451.50	89.60
MOTOR (NON-CONTINUOUS)	11673.11	230	0.00	0.00	0.00	29.30
MOTOR (CONTINUOUS)	8763.92	230	0.00	0.00	0.00	22.00
LARGEST MOTOR	27088.48	230	0.00	0.00	0.00	68.00
SPARE	54000.00	230	20.87	67.83	67.83	23.99
TOTAL CONNECTED VA	641393.57	230	729.69	698.32	779.45	232.89

DEMAND FACTOR CALCULATION	
DEMAND FACTOR = TOTAL DEMAND VA/TOTAL CONNECTED VA	
TOTAL DEMAND VA	600161.57
OVERALL DEMAND FACTOR	93.57%

LINE CURRENT CALCULATION
IL= LARGEST TOTAL PHASE CURRENT + TOTAL 3Ø CURRENT
IL=779.447826086957(1.732) + 232.893282458078
1582.89691724069 A

DEMAND FACTORS PER PB		TOTAL VA	DEMAND VA
MCB	0.94	641393.568	600161.57
MDP	0.93	597868.06	557236.06
LPB1	0.80	21240.00	16992.00
LPB2	0.80	16840.00	13472.00
LPB3	0.80	17240.00	13792.00
LPB4	0.80	16700.00	13360.00
LPB5	0.80	21040.00	16832.00
PPB1	0.83	30660	25392.00
PPB2	0.80	25500.00	20400.00
PPB3	0.84	24060.00	20184.00
PPB4	0.84	24060.00	20184.00
PPB5	0.85	22080.00	18780.00
APB1	1.00	71195.00	71195.00
APB2	1.00	68205	68205.00
APB3	1.00	73725	73725.00
APB4	1.00	73725	73725.00
APB5	1.00	78598.056	78598.06

PERCENT LOADING		
PB ID	% MOTOR LOAD	% STATIC LOAD
LPB1	0.00%	100.00%
LPB2	0.00%	100.00%
LPB3	0.00%	100.00%
LPB4	0.00%	100.00%
LPB5	0.00%	100.00%
PPB1	0.00%	100.00%
PPB2	0.00%	100.00%
PPB3	0.00%	100.00%
PPB4	0.00%	100.00%
PPB5	0.00%	100.00%
APB1	95.79%	4.21%
APB2	95.60%	4.40%
APB3	95.93%	4.07%
APB4	95.93%	4.07%
APB5	96.18%	3.82%

E 11 1 **DESIGN ANALYSIS**
NOTS

TRANSFORMER SIZING	
TOTAL LINE CURRENT	CALCULATION
1582.896917	TRANSFORMER SIZE
	S= (1.732 x V x I) x 125%
	S = (1.732 x 230 x 1582.9) x 125%
	S = 788.20351994 kVA
THEREFORE USE 3 x 333 kVA 1P 13.2KV/240V POLE MOUNTED DISTRIBUTION TRANSFORMER	

GENERATOR SIZING	
	CALCULATION
kW LOAD	P = (1.732 x V x I x PF)/1000
	P = (1.732 x 230 x 1582.9 x 0.80)/1000
	P = 504.4502527616kW
RESERVE CAPACITY	P = 504.45 x 0.25
	P =126.11kW
GENERATOR SIZE	P = 504.45 + 126.11
	P = 630.56kW
THEREFORE USE 800kVA 3P 240V 60HZ 0.8PF SILENT-TYPE DIESEL GENERATOR SET	

E 11 2 **TRANSFORMER AND GENERATOR SIZING**
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UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
CAGAYAN DE ORO CAMPUS
INFRASTRUCTURE PLANNING AND FACILITY DEVELOPMENT UNIT
CLARO M. RECTO AVENUE, LAPASAN, CAGAYAN DE ORO CITY 9000
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WEBSITE: www.ustp.edu.ph

PROFESSIONAL ELECTRICAL ENGINEER

PROJECT: PROPOSED CONSTRUCTION OF SMART ACADEMIC BUILDING PHASE 1, JASAAN CAMPUS
LOCATION: USTP JASAAN CAMPUS, MISAMIS ORIENTAL
OWNER: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, INFRASTRUCTURE PLANNING & FACILITIES DEVELOPMENT OFFICE

RECOMMENDING APPROVAL:
ATTY. ERWIN B. BUCIO
VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
DESIGN ANALYSIS
TRANSFORMER AND GENERATOR SIZING

DRAWN BY:
DATE DRAWN: 10.01.2025
FNT:

E11

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MAIN CIRCUIT BREAKER – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES				VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{SW}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
MCB	C1	MDP - Main Distribution Panel									230	597868	597868.056	729.69	698.32	779.45	122.23	60	3	1600	(5) 3 - 250 mm^2 XLPE Copper Wire	(5) 80mm ø Conduit - RSC	(5) 1- 30 mm^2 THWN Copper Wire
	C16	SPB - Secondary Panel Board									230	13437	13437	0.00	0.00	0.00	36.63	60	3	60	3 - 30 mm^2 THWN Copper Wire	50 mm ø Conduit - RSC	1 - 8 mm^2 THWN Copper Wire
	C3	Fire Pump				25					230	27088	27088	-	-	-	68.00	60	3	150	3 - 38 mm^2 THWN Copper Wire	40 mm ø Conduit - RSC	1 -8 mm^2 THWN Copper Wire
	C4	SPARE									230	3000	3000				6.02						
TOTAL			0	0	0	0	0	0	0	0			641394	729.69	698.32	779.45	232.89						

Calculation:

For Service Conductor

IL = (779.45 x 1.732) + 25% (68) + 232.89

1599.94 A

For Service Protection

IL = (779.45 x 1.732) + 150% (68) + 232.89

1684.94 A

THEREFORE USE 2000 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V
USE 5 SETS OF 3 – 250 mm^2 XLPE COPPER, 5 – 30 mm^2 GROUND @ 80 mm ø Conduit – RSC

Load Type	VA	FLC			
		AB	BC	CA	3P
LO	78060.00	62.75	97.18	111.58	0.00
CO	111360.00	102.57	159.81	148.54	0.00
ACU	350448.06	543.50	373.50	451.50	89.60
MOTOR (NC)	11673.11	0.00	0.00	0.00	29.30
MOTOR (C)	8763.92	0.00	0.00	0.00	22.00
LARGEST MOTOR	27088.48	0.00	0.00	0.00	68.00
SPARE	54000.00	20.87	67.83	67.83	23.99
TOTAL	641393.57	729.69	698.32	779.45	232.89

MAIN DISTRIBUTION PANEL – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{SW}	S_{4W}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
MDP	C1	LPB1										230	21240	21240	-	-	73.88	-	60	2	100	2 - 38 mm^2 THHN Copper Wire	40 mm ø Conduit - PVC	1 - 8 mm^2 THHN Copper Wire
	C2	LPB2										230	16840	16840	-	-	58.57	-	60	2	80	2 - 30 mm^2 THHN Copper Wire	40 mm ø Conduit - PVC	1 - 8 mm^2 THHN Copper Wire
	C3	LPB3										230	17240	17240	-	59.97	-	-	60	2	80	2 - 30 mm^2 THHN Copper Wire	40 mm ø Conduit - PVC	1 - 8 mm^2 THHN Copper Wire
	C4	LPB4										230	16700	16700	-	58.09	-	-	60	2	80	2 - 30 mm^2 THHN Copper Wire	40 mm ø Conduit - PVC	1 - 8 mm^2 THHN Copper Wire
	C5	LPB5										230	21040	21040	73.18	-	-	-	60	2	100	2 - 38 mm^2 THHN Copper Wire	40 mm ø Conduit - PVC	1 - 8 mm^2 THHN Copper Wire
	C6	PPB1										230	30660	30660	113.01	-	-	-	60	2	150	2 - 60 mm^2 THHN Copper Wire	50 mm ø Conduit - PVC	1 - 14 mm^2 THHN Copper Wire
	C7	PPB2										230	25500	25500	-	92.92	-	-	60	2	125	2 - 50 mm^2 THHN Copper Wire	50 mm ø Conduit - PVC	1 - 14 mm^2 THHN Copper Wire
	C8	PPB3										230	24060	24060	-	87.76	-	-	60	2	125	2 - 50 mm^2 THHN Copper Wire	50 mm ø Conduit - PVC	1 - 14 mm^2 THHN Copper Wire
	C9	PPB4										230	24060	24060	-	-	87.76	-	60	2	125	2 - 50 mm^2 THHN Copper Wire	50 mm ø Conduit - PVC	1 - 14 mm^2 THHN Copper Wire
	C10	PPB5										230	22080	22080	-	-	81.65	-	60	2	125	2 - 50 mm^2 THHN Copper Wire	50 mm ø Conduit - PVC	1 - 14 mm^2 THHN Copper Wire
	C11	APB1										230	71195	71195	124.50	82.00	100.43	-	60	3	300	3 - 125 mm^2 THHN Copper Wire	75 mm ø Conduit - PVC	1 - 22 mm^2 THHN Copper Wire
	C12	APB2										230	68205	68205	108.00	89.43	96.50	-	60	3	250	3 - 125 mm^2 THHN Copper Wire	75 mm ø Conduit - PVC	1 - 22 mm^2 THHN Copper Wire
	C13	APB3										230	73725	73725	116.00	95.22	106.72	-	60	3	275	3 - 125 mm^2 THHN Copper Wire	75 mm ø Conduit - PVC	1 - 22 mm^2 THHN Copper Wire
	C14	APB4										230	73725	73725	116.00	95.22	106.72	-	60	3	275	3 - 125 mm^2 THHN Copper Wire	75 mm ø Conduit - PVC	1 - 22 mm^2 THHN Copper Wire
	C15	APB5										230	78598	78598	79.00	37.72	67.22	89.60	60	3	300	3 - 125 mm^2 THHN Copper Wire	75 mm ø Conduit - PVC	1 - 22 mm^2 THHN Copper Wire
	C16	Elevator										230	10000	10000	-	-	-	25.10	60	3	60	3 - 8 mm^2 THHN Copper Wire	32 mm ø Conduit - PVC	1 - 5.5 mm^2 THHN Copper Wire
	C17	SPARE										230	1500	1500	-	-	-	3.77						
	C18	SPARE										230	1500	1500	-	-	-	3.77						
TOTAL			0	0	0	0	0	0	0	0	0			597868	729.69	698.32	779.45	122.23						

Calculation:

For Service Conductor

IL = (779.45 + 25% (28)) x 1.732 + 122.23

1484.4 A

For Service Protection

IL = (779.45 + 150% (28)) x 1.732 + 122.23

1545.02 A

THEREFORE USE 1600 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V
USE 5 SETS OF 3 – 250 mm^2 XLPE COPPER, 1 – 30 mm^2 GROUND @ 80 mm ø Conduit – RSC

Load Type	VA	FLC			
		AB	BC	CA	3P
LO	78060.00	62.75	97.18	111.58	0.00
CO	111360.00	102.57	159.81	148.54	0.00
ACU	350448.06	543.50	373.50	451.50	89.60
MOTOR (NC)	10000.00	0.00	0.00	0.00	25.10
MOTOR (C)	0.00	0.00	0.00	0.00	0.00
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	48000.00	20.87	67.83	67.83	7.53
TOTAL	597868.06	729.69	698.32	779.45	122.23

E 12 1 **SCHEDULE OF LOADS**

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PROFESSIONAL ELECTRICAL ENGINEER

PROJECT	PROPOSED CONSTRUCTION OF SMART ACADEMIC BUILDING PHASE 1, JASAAN CAMPUS
LOCATION	USTP JASAAN CAMPUS, MISAMIS ORIENTAL
OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:	RECOMMENDING APPROVAL:	APPROVED BY:
ENGR. GRACE C. BABA	ATTY. ERWIN B. BUCIO	DR. AMBROSIO B. CULTURA II
DIRECTOR, INFRASTRUCTURE PLANNING & FACILITIES DEVELOPMENT OFFICE	VP FOR ADMINISTRATION & LEGAL AFFAIRS	PRESIDENT, USTP SYSTEM

SHEET CONTENTS: SCHEDULE OF LOADS

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SECONDARY PANEL BOARD – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
SPB	C1	Plumbing Transfer Pump - Main				4						230	4939.664	4939.664				12.40	60	3	30	3 - 5.5 mm² THHN Copper Wire	20 mm ø Conduit -RSC	1 - 5.5 mm² THHN Copper Wire
	C2	Plumbing Transfer Pump - Backup				1						230	1673.112	1673.112				4.20	60	3	20	3 - 5.5 mm² THHN Copper Wire	20 mm ø Conduit -RSC	1 - 5.5 mm² THHN Copper Wire
	C3	Jockey Pump				3						230	3824.256	3824.256				9.60	60	3	20	3 - 5.5 mm² THHN Copper Wire	20 mm ø Conduit -RSC	1 - 5.5 mm² THHN Copper Wire
	C4	SPARE										230	1500	1500				5.22						
	C5	SPARE										230	1500	1500				5.22						
TOTAL			0	0	0	8	0	0	0	0	0			13437	0.00	0.00	0.00	36.63						

Calculation:	For Service Conductor	For Service Protection	
	IL = (0 x 1.732) + 25% (12.4) + 36.63 39.73 A	IL = (0 x 1.732) + 150% (12.4) + 36.63 55.23 A	THEREFORE USE 60 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V USE 3 – 30 mm² THHN COPPER, 1 – 14 mm² GROUND @ 50 mm ø Conduit – RSC

Load Type	VA	FLC			
		AB	BC	CA	3P
LO	0.00	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00	0.00
ACU	0.00	0.00	0.00	0.00	0.00
MOTOR (NC)	1673.11	0.00	0.00	0.00	4.20
MOTOR (C)	8763.92	0.00	0.00	0.00	22.00
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	3000.00	0.00	0.00	0.00	10.43
TOTAL	13437.03	0.00	0.00	0.00	36.63

LIGHTING PANEL BOARD 1F – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
LPB1	C1	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C2	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C3	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C4	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C5	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C6	Lighting Outlet	9				1		1			230	100	900	3.13	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C7	Lighting Outlet	21				1	1		8		230	100	2100	7.30	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	10		1		5	1				230	100	1180	4.10	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C9	Lighting Outlet	9						1			230	100	900	3.13	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C10	Lighting Outlet	24				6	2		5		230	100	2400	8.35	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C11	Lighting Outlet and Exhaust Fan	10		2		5					230	100	1360	4.73	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C12	Lighting Outlet	12					1				230	100	1200	4.17	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C13	Lighting Outlet	7						1			230	100	700	2.43	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C14	SPARE										230	1500	1500	5.22	60	2	15			
	C15	SPARE										230	1500	1500	5.22	60	2	15			
TOTAL			177	0	3	0	28	5	8	13	0			21240	73.88						

Calculation:	For Service Conductor	For Service Protection	
	IL = 73.88 x 125% 92.35	IL = 73.88 x 125% 92.35	THEREFORE USE 100 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 – 38 mm² THHN COPPER, 1 – 8 mm² GROUND @ 40 mm ø Conduit – PVC

Load Type	VA	FLC
LO	18240.00	63.44
CO	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	21240.00	73.88

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VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS: SCHEDULE OF LOADS

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DATE DRAWN: 10.01.2025
FNT:

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LIGHTING PANEL BOARD 2F - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
LPB2	C1	Lighting Outlet	16				3		1			230	100	1600	5.57	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C2	Lighting Outlet	16				1		1			230	100	1600	5.57	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C3	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C4	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C5	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C6	Lighting Outlet	9				1		1			230	100	900	3.13	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C7	Lighting Outlet and Exhaust Fan	13		1		5		1			230	100	1480	5.15	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	10		2		5					230	100	1360	4.73	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C9	Lighting Outlet	16				1	2				230	100	1600	5.57	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C10	Lighting Outlet	8						1			230	100	800	2.78	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C11	SPARE										230	1500	1500	5.22	60	2	15			
	C12	SPARE										230	1500	1500	5.22	60	2	15			
TOTAL			133	0	3	0	22	2	8	0	0			16840	58.57						

Calculation:	For Service Conductor IL = 58.57 x 125% 73.22	For Service Protection IL = 58.57 x 125% 73.22	THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 30 mm² THHN COPPER, 1 - 8 mm² GROUND @ 40 mm ø Conduit - PVC

Load Type	VA	FLC
LO	13840.00	48.14
CO	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	16840.00	58.57

LIGHTING PANEL BOARD 3F - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
LPB3	C1	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C2	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C3	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C4	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C5	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C6	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C7	Lighting Outlet and Exhaust Fan	17		1		5	1	1			230	100	1880	6.54	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	10		2		5					230	100	1360	4.73	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C9	Lighting Outlet	20				2	1	1			230	100	2000	6.96	60	2	15	2 - 3.5 mm^2 THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm^2 THHN Copper Wire
	C10	SPARE										230	1500	1500	5.22	60	2	15			
	C11	SPARE										230	1500	1500	5.22	60	2	15			
TOTAL			137	0	3	0	24	2	8	0	0			17240	59.97						

Calculation:	For Service Conductor IL = 59.97 x 125% 74.96	For Service Protection IL = 59.97 x 125% 74.96	THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 30 mm² THHN COPPER, 1 - 8 mm² GROUND @ 40 mm ø Conduit - PVC

Load Type	VA	FLC
LO	14240.00	49.53
CO	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	17240.00	59.97

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UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
CAGAYAN DE ORO CAMPUS
INFRASTRUCTURE PLANNING AND FACILITY DEVELOPMENT UNIT
CLARO M. RECTO AVENUE, LAPASAN, CAGAYAN DE ORO CITY 9000
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PROFESSIONAL ELECTRICAL ENGINEER

PROJECT	PROPOSED CONSTRUCTION OF SMART ACADEMIC BUILDING PHASE 1, JASAAN CAMPUS
LOCATION	USTP JASAAN CAMPUS, MISAMIS ORIENTAL
OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, INFRASTRUCTURE PLANNING & FACILITIES DEVELOPMENT OFFICE

RECOMMENDING APPROVAL:
ATTY. ERWIN B. BUCID
VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
SCHEDULE OF LOADS

DRAWN BY:
DATE DRAWN: 10.01.2025
FNT:

E14

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LIGHTING PANEL BOARD 4F – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
LPB4	C1	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C2	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C3	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C4	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C5	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C6	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C7	Lighting Outlet and Exhaust Fan	17		1		5	1	1			230	100	1700	5.91	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	10		2		5					230	100	1000	3.48	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C9	Lighting Outlet	20				2	1	1			230	100	2000	6.96	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C10	SPARE										230	1500	1500	5.22	60	2	15			
	C11	SPARE										230	1500	1500	5.22	60	2	15			
TOTAL			137	0	3	0	24	2	8	0	0			16700	58.09						

Calculation:	For Service Conductor IL = 58.09 x 125% 72.61	For Service Protection IL = 58.09 x 125% 72.61	THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 30 mm² THHN COPPER, 1 - 8 mm² GROUND @ 40 mm ø Conduit - PVC

Load Type	VA	FLC
LO	13700.00	47.65
CO	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	16700.00	58.09

LIGHTING PANEL BOARD 5F – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
LPB5	C1	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C2	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C3	Lighting Outlet	23				3		1			230	100	2300	8.00	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C4	Lighting Outlet	21						1			230	100	2100	7.30	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C5	Lighting Outlet	23							2		230	100	2300	8.00	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C6	Lighting Outlet	17				1			1		230	100	1700	5.91	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C7	Lighting Outlet	9				1		1			230	100	900	3.13	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	17		1		5	1	1			230	100	1880	6.54	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C9	Lighting Outlet and Exhaust Fan	10		2		5					230	100	1360	4.73	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C10	Lighting Outlet	18				2	2				230	100	1800	6.26	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C11	Lighting Outlet	7						1			230	100	700	2.43	60	2	15	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C12	SPARE										230	1500	1500	5.22	60	2	15			
	C13	SPARE										230	1500	1500	5.22	60	2	15			
TOTAL			175	0	3	0	21	3	7	3	0			21040	73.18						

Calculation:	For Service Conductor IL = 73.18 x 125% 91.48	For Service Protection IL = 73.18 x 125% 91.48	THEREFORE USE 100 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 38 mm² THHN COPPER, 1 - 8 mm² GROUND @ 40 mm ø Conduit - PVC

Load Type	VA	FLC
LO	18040.00	62.75
CO	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	21040.00	73.18

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PROFESSIONAL ELECTRICAL ENGINEER

PROJECT	PROPOSED CONSTRUCTION OF SMART ACADEMIC BUILDING PHASE 1, JASAAN CAMPUS
LOCATION	USTP JASAAN CAMPUS, MISAMIS ORIENTAL
OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENTS:	DRAWN BY:
ENGR. GRACE C. BABA	ATTY. ERWIN B. BUCIO	DR. AMBROSIO B. CULTURA II	SCHEDULE OF LOADS	DATE DRAWN: 10.01.2025
DIRECTOR, INFRASTRUCTURE PLANNING & FACILITIES DEVELOPMENT OFFICE	VP FOR ADMINISTRATION & LEGAL AFFAIRS	PRESIDENT, USTP SYSTEM		FNT:

E15

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POWER PANEL BOARD 1F – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
PPB1	C1	Convenience Outlet		16								230	180	2880	10.02	60	2	25	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C2	Convenience Outlet		16								230	180	2880	10.02	60	2	25	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C3	Convenience Outlet		16								230	180	2880	10.02	60	2	25	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C4	Convenience Outlet		16								230	180	2880	10.02	60	2	25	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C5	Convenience Outlet		16								230	180	2880	10.02	60	2	25	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C6	Convenience Outlet		16								230	180	2880	10.02	60	2	25	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C7	Convenience Outlet		8								230	180	1440	5.01	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C8	Convenience Outlet		9								230	180	1620	5.63	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C9	Fire Detection and Alarm System			1							230	1500	1500	6.52	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C10	CCTV System			1							230	1500	1500	6.52	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C11	Convenience Outlet - Emergency		13								230	180	2340	10.17	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C12	Convenience Outlet - Emergency		11								230	180	1980	8.61	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C13	SPARE										230	1500	1500	5.22	60	2	20			
	C14	SPARE										230	1500	1500	5.22	60	2	20			
TOTAL			0	137	2	0	0	0	0	0	0			30660	113.01						

Calculation:	For Service Conductor IL = 113.01 x 125% 141.26	For Service Protection IL = 113.01 x 125% 141.26	THEREFORE USE 150 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 – 60 mm² THHN COPPER, 1 – 14 mm² GROUND @ 50 mm ø Conduit – PVC

Load Type	VA	FLC
LO	0.00	0.00
CO	27660.00	102.57
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	30660.00	113.01

POWER PANEL BOARD 2F – SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S_1	S_2	S_3	S_{3W}	S_{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
PPB2	C1	Convenience Outlet		12								230	180	2160	7.51	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C2	Convenience Outlet		8								230	180	1440	5.01	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C3	Convenience Outlet		10								230	180	1800	6.26	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C4	Convenience Outlet		10								230	180	1800	6.26	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C5	Convenience Outlet		10								230	180	1800	6.26	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C6	Convenience Outlet		12								230	180	2160	7.51	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C7	Convenience Outlet		12								230	180	2160	7.51	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C8	Convenience Outlet		6								230	180	1080	3.76	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C9	Convenience Outlet		6								230	180	1080	3.76	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C10	Convenience Outlet		12								230	180	2160	7.51	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C11	Convenience Outlet - Emergency		13								230	180	2340	10.17	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C12	Convenience Outlet - Emergency		14								230	180	2520	10.96	60	2	20	2 - 3.5 mm² THHN Copper Wire	20 mm ø Conduit - PVC	1 - 3.5 mm² THHN Copper Wire
	C13	SPARE										230	1500	1500	5.22	60	2	20			
	C14	SPARE										230	1500	1500	5.22	60	2	20			
TOTAL			0	125	0	0	0	0	0	0	0			25500	92.92						

Calculation:	For Service Conductor IL = 92.92 x 125% 116.15	For Service Protection IL = 92.92 x 125% 116.15	THEREFORE USE 125 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 – 50 mm² THHN COPPER, 1 – 14 mm² GROUND @ 50 mm ø Conduit – PVC

Load Type	VA	FLC
LO	0.00	0.00
CO	22500.00	82.49
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	25500.00	92.92

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OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENTS:	DRAWN BY:
ENGR. GRACE C. BABA	ATTY. ERWIN B. BUCIO	DR. AMBROSIO B. CULTURA II	SCHEDULE OF LOADS	
DIRECTOR, INFRASTRUCTURE PLANNING & FACILITIES DEVELOPMENT OFFICE	VP FOR ADMINISTRATION & LEGAL AFFAIRS	PRESIDENT, USTP SYSTEM		DATE DRAWN: 10.01.2025
				FNT:

E16