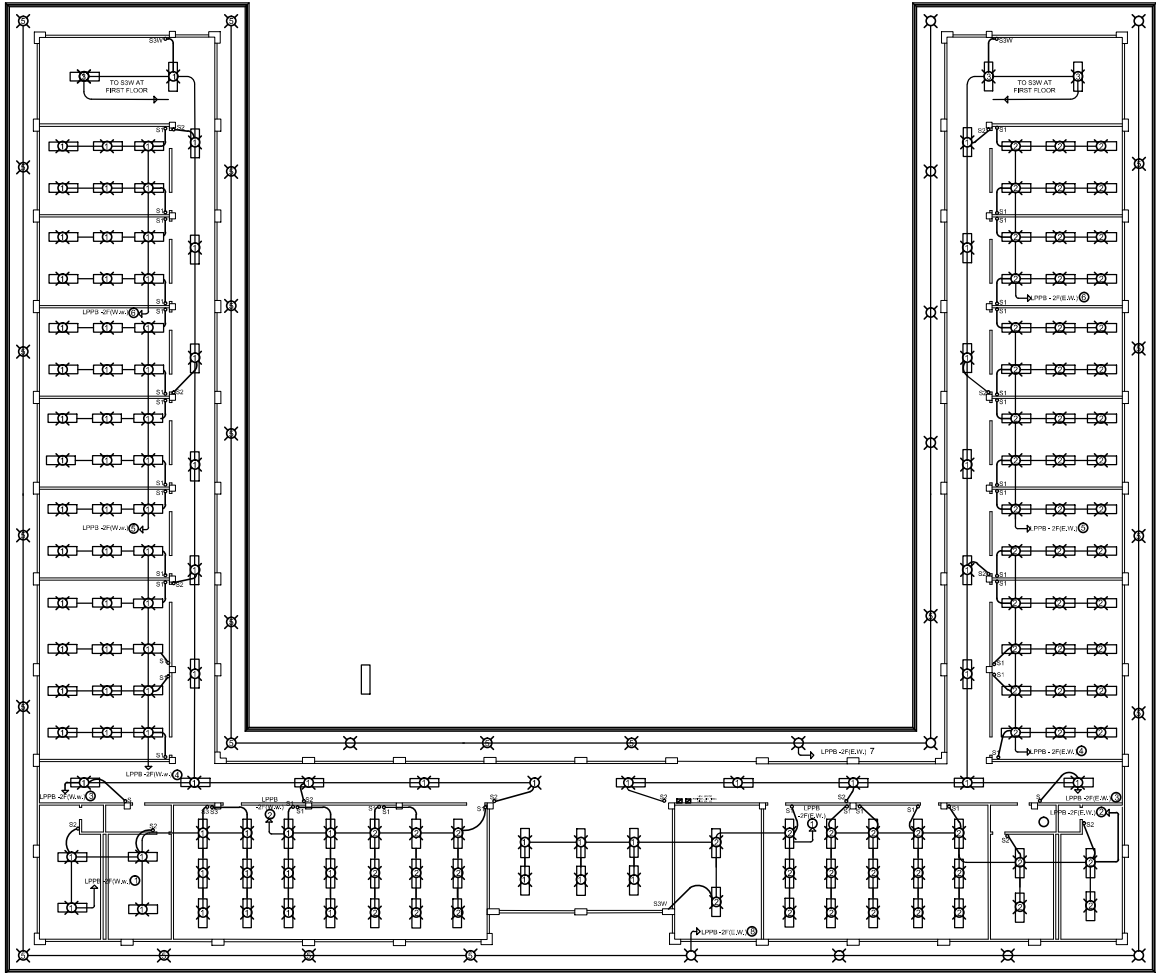


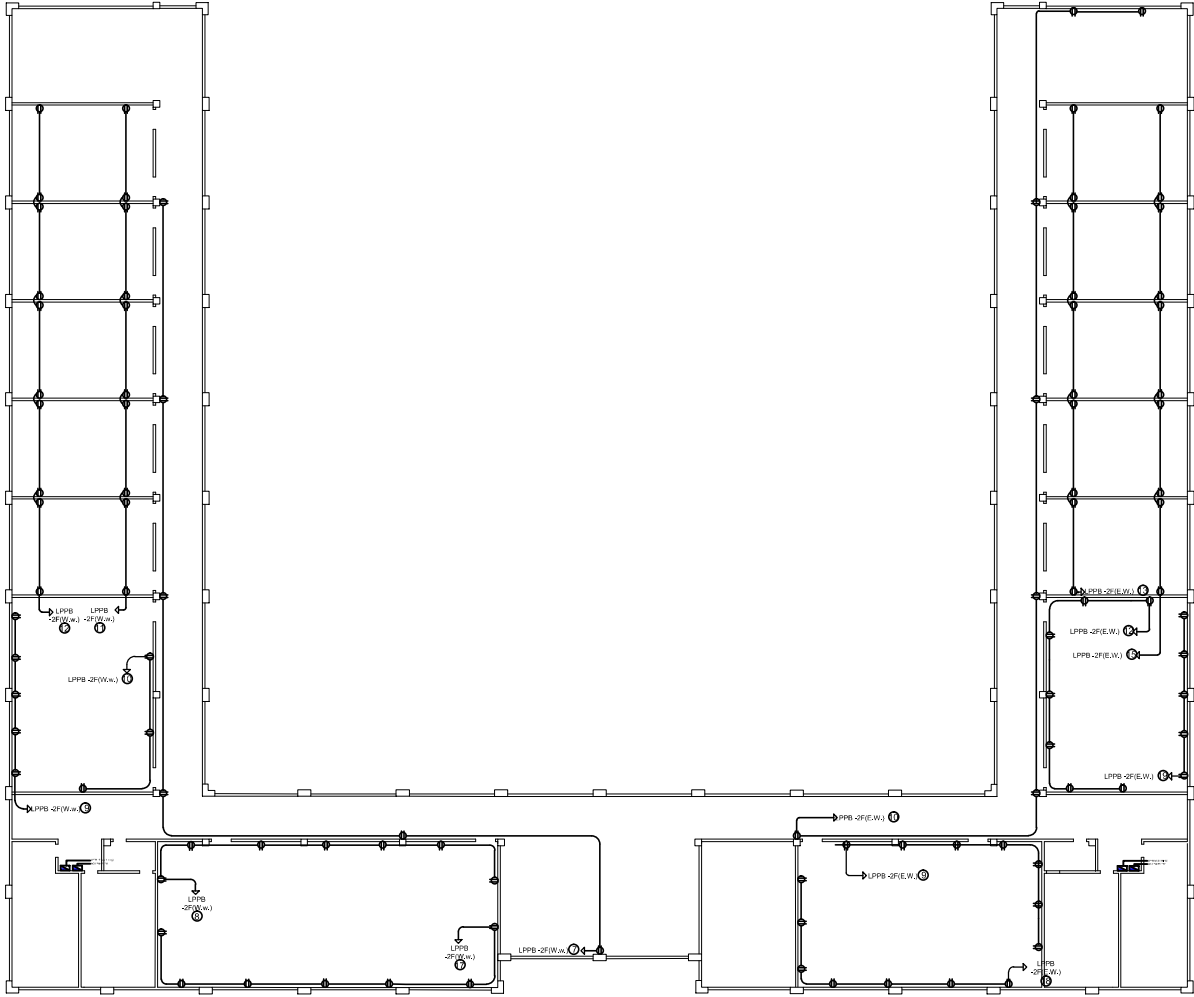


2/F LIGHTING LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang 2306 Ilocos Norte Tel: 0917 777 7923-191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAFSD)	CHECKED/REVIEWED BY: AIDA V. CABANG LAPET BYLA, PROJECT BY	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO.:
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR REGISTERED ELECTRICAL ENGINEER	PRC NO./VALIDITY: PRC NO. / VALIDITY: PLACE ISSUED: DATE: BY:	LOCATION: MMSU CITY OF BATANG, ILOCOS NORTE	ROMEO R. DULDULAO REGISTERED ELECTRICAL ENGINEER		SHIRLEY C. AGRUPIS UNREGISTERED PROJECT	LIGHTING LAYOUT PLAN	



ELECTRICAL PLANS



2/F POWER OUTLET LAYOUT PLAN



FROM THE OFFICE:
PHYSICAL PLANT AND GENERAL SERVICES DIVISION
2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY
City of Batac, 2008 Ilocos Norte
Telefax: +63 (77) 792-3191

PREPARED BY:
FREDDIE MICHAEL S. BALANAY
REGISTERED MASTER ELECTRICIAN
CHECKED BY:
RIGOR G. GABUR
ELECTRICAL ENGINEER, PRC-ED

PROFESSIONAL ELECTRICAL ENGINEER:
PROJECT TITLE:
**REHABILITATION OF THE ELECTRICAL
SYSTEM OF COLLEGES (CAFSD)**
LOCATION:
MMSU CITY OF BATAC, ILOCOS NORTE

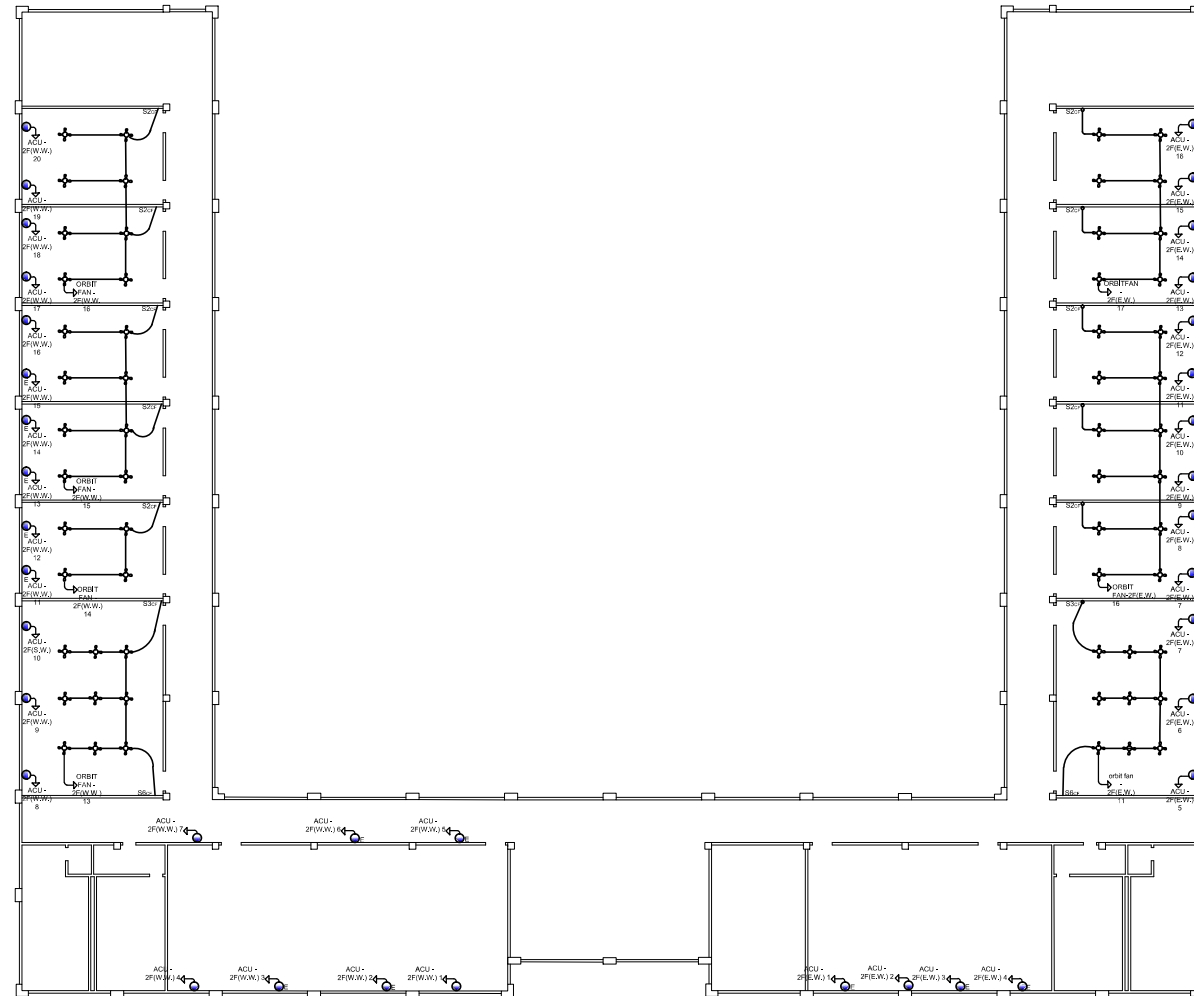
CHECKED/REVIEWED BY:
AIDA V. CABANG
CHIEF BATAAC ARCHITECT BY
RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR, PPGSD

CONFORME:
JOSELITO I. ROSARIO
DEAN, CAFSD

APPROVED BY:
SHIRLEY C. AGRUPIS
UNIVERSITY PRESIDENT

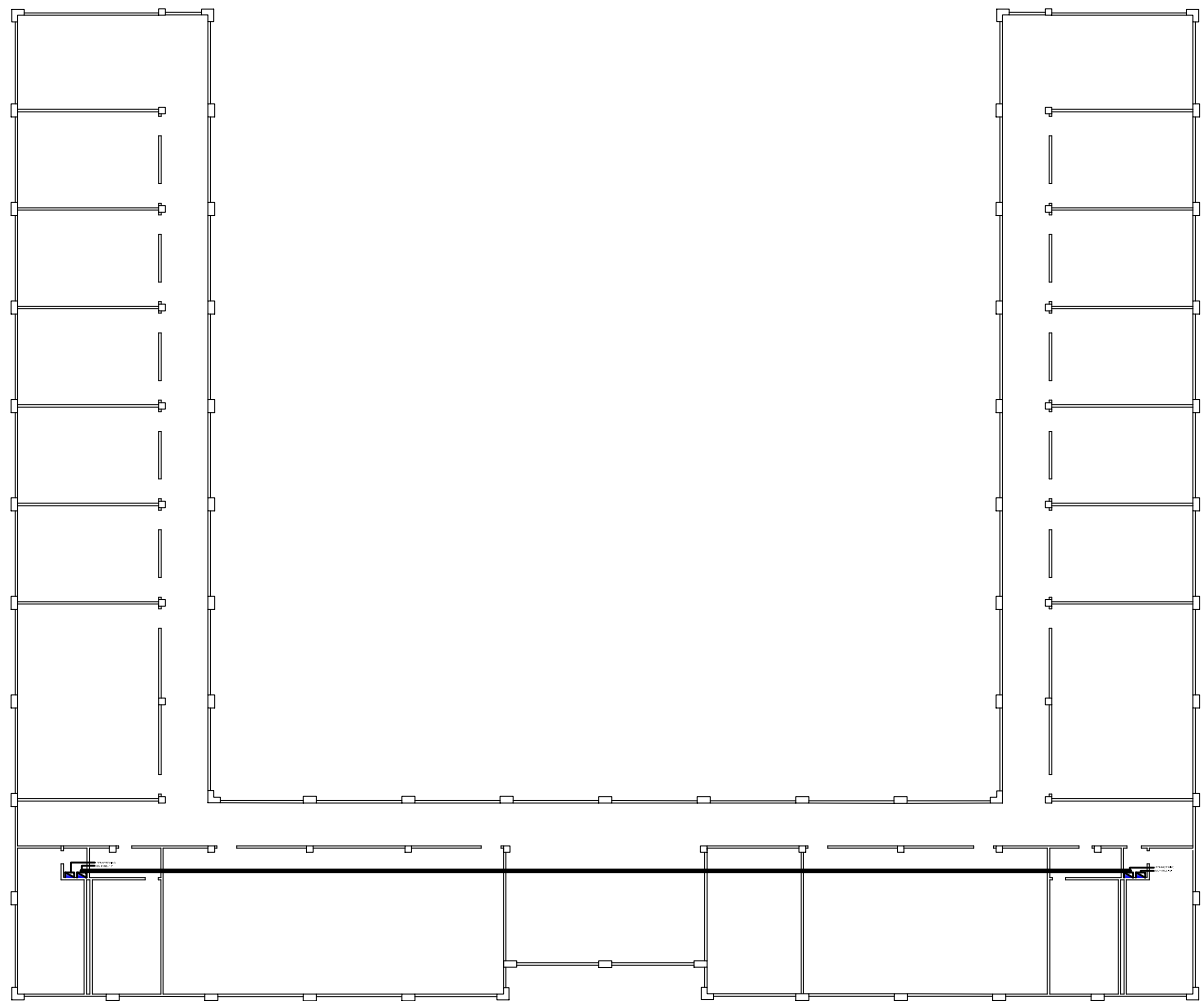
SHEET CONTENTS:
POWER OUTLET LAYOUT PLAN

SHEET NO:
E
ELECTRICAL PLANS



2/F FAN/ACU OUTLET LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAFSD)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATAAC ARCHITECT BY	CONFORME: JOSELITO I. ROSARIO DEAN, CAFSD	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: FAN LAYOUT PLAN ACU LAYOUT PLAN CABLE TRAY LAYOUT PLAN	SHEET NO: 
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC				



1/F FAN/ACU OUTLET LAYOUT PLAN

	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAFSD)	AIDA V. CABANG CHIEF BATAAC ARCHITECT	JOSELITO I. ROSARIO DEAN, CAFSD	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	CABLE TRAY LAYOUT PLAN	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRC-ES	DATE:		ROMEO R. DULDULAO DIRECTOR, PPGSD				
		LOCATION:	MMSU CITY OF BATAAC, ILOCOS NORTE					ELECTRICAL PLANS	

FEEDER CONDUCTOR
 $IFL = 15 (3420) = 5130$
 USE 3 #00000 & 1 #20000 TH-69 Cu, wire-in-conduit tray

FEEDER PROTECTION
 USE 3 POLE 100A, 600V CIRCUIT BREAKER, 240V 200AF, 60-HZ

FEEDER CONDUCTOR
 $P_L = 13 (21.52) = 279.76$
 USE: 3 #22mm² & 1 #25mm² THW Cu, wire in cable tray

FEEDER PROTECTION
 USE: 3 POLE 75kV, 500kA CIRCUIT BREAKER 240V, 200kA, 60kA

FEEDER CONDUCTOR
IRL = $3 \sqrt{(4/71)} = 76/50$
USE: 3-20mm² & 1 - 16mm² THWGL wire in cable tray

FEEDER PROTECTION
USE: 3 POLE 125AFCB CIRCUIT BREAKER 240V/100AF 50/60HZ

FEEDER CONDUCTOR
 $PL = 25 (27.25) = 47.64$
 USE: 2 (2mm²) & 1 (6.3mm²) THW Cu wire in cable tray

FEEDER PROTECTION
 USE: 3 POLE 70A, 60KVC CIRCUIT BREAKER, 240V, 500AF, 60HZ

FEEDER CONDUCTOR
 $F_L = 19.6(2.40 \times 12)(.45) = 113.63$
 USE 3-30mm² & 1-54mm² THW Cu wire in cable tray

MAIN OVER CURRENT DEVICE PROTECTION
 $I_L = 3(2500)(12.40 \times 4.6) = 165.81 \text{ A}$
 USE 3 POLE 175AT, MCCB, 240V 60 HZ, 90 KRC

FEEDER CONDUCTOR
 $FL = \sqrt{2} (175.0 + 12.6/250) = 135.35$
 USE: 3 #30mm² & 1 x 16mm² THW Cu, wire in cable tray
 MAIN OVER CURRENT DEVICE PROTECTION
 $FL = \sqrt{2} (250.0 + 12.6/140) = 140.1A$
 USE: 3 POLE 175A, MCCB, 240V 60 HZ, 50 KVA

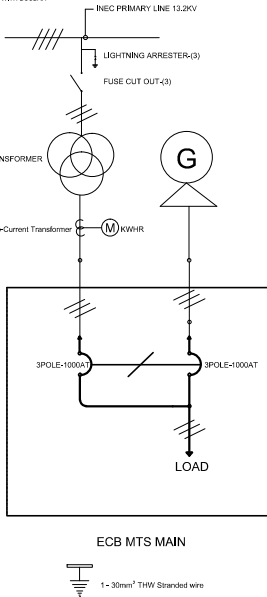
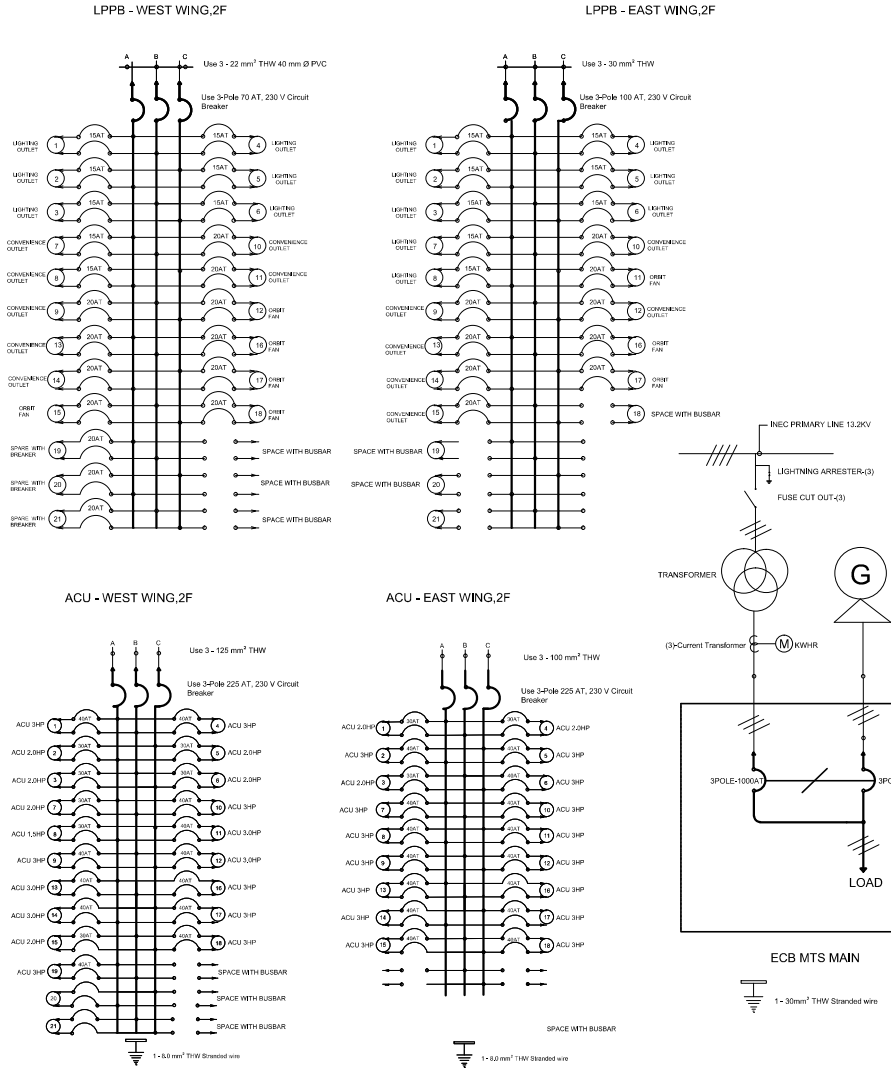
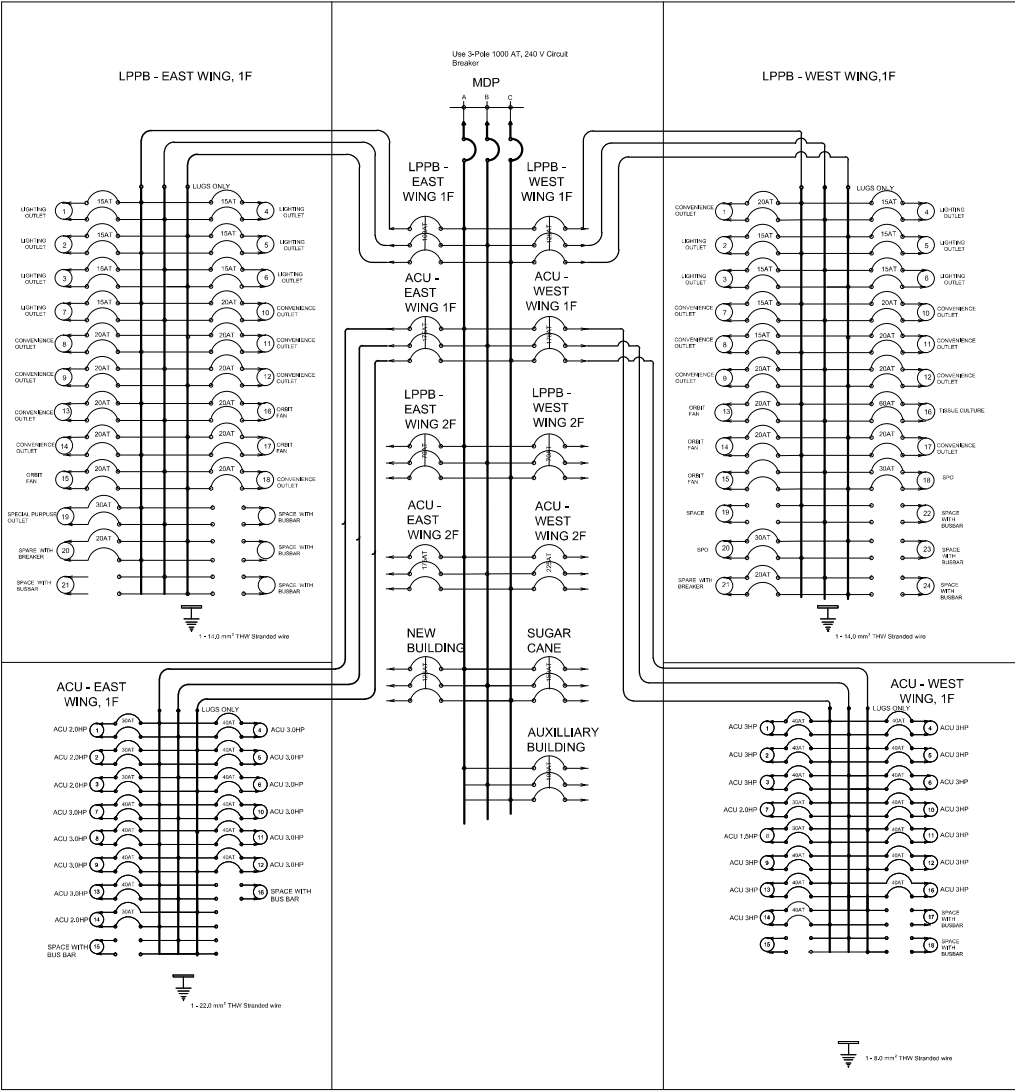
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MAIN OVER CURRENT DEVICE PROTECTION
 $P_L = 3 (280V / (2.66 - 40.5) = 140.61 \text{ A}$
 USE 3 POLE 175A, MCCB, 240V 60 HZ, 35 KALC
 FEEDER CONDUCTOR

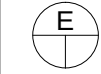
FEEDER CONDUCTOR
 $PL = (2.07 \times 10^4)(12.6/210) = 152.1 \text{ VA}$
 $USG = 3 + 152 \text{ var} = 1 + 22 \text{ var} = 1 \text{ W} + 22 \text{ var} = 1 \text{ W} + 22 \text{ var} = 1 \text{ W} + 22 \text{ var}$

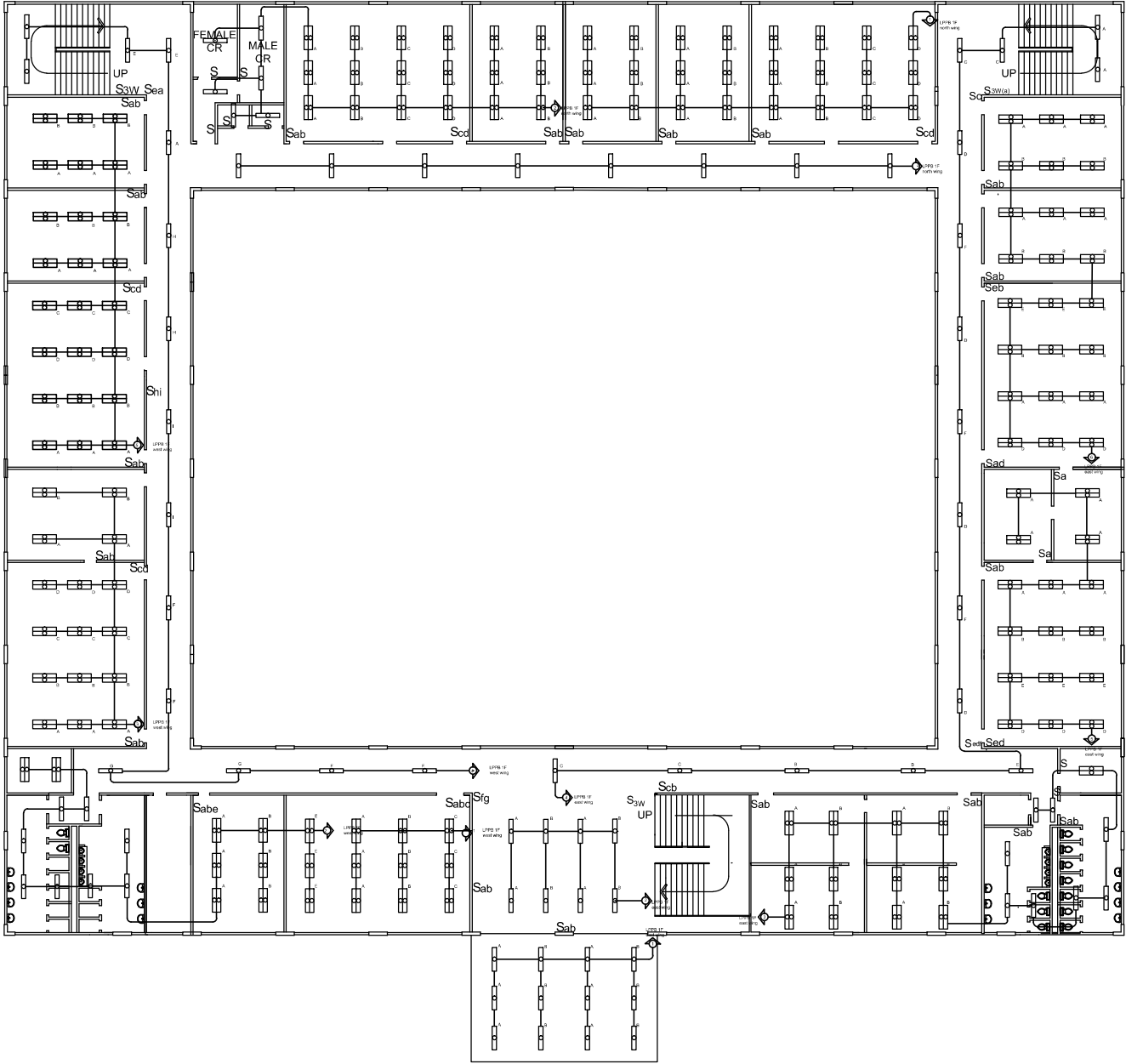
MAIN OVER CURRENT DEVICE PROTECTION
 $PL = (35.2902)(12.6/10) = 206.76 \text{ VA}$
 $USG = 3 \text{ POL} + 22 \text{ var} = 206.76 \text{ VA} + 22 \text{ var} = 206.76 \text{ VA} + 22 \text{ var} = 206.76 \text{ VA} + 22 \text{ var}$

UNITIZED PANEL



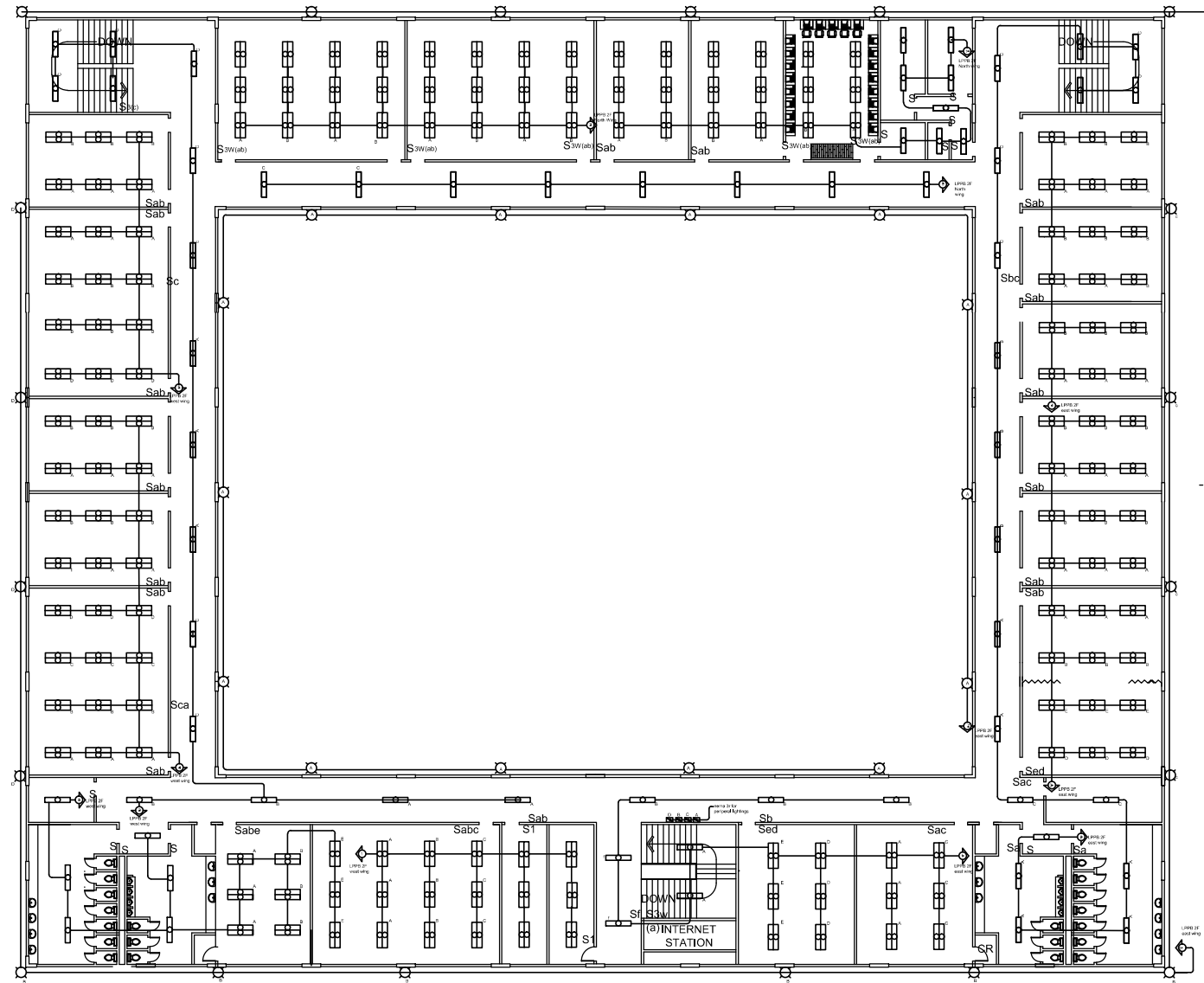
1/F FAN/ACU OUTLET LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAFSD)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATTAL ARCHITECT	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	PRC NO./VALIDITY:	DATE:	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC	JOSELITO I. ROSARIO DEAN, CAFSD	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	PANEL BOARD DIAGRAM SINGLE LINE DIAGRAM	
			DATE:	LOCATION:					
			DATE:	LOCATION:					

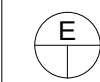


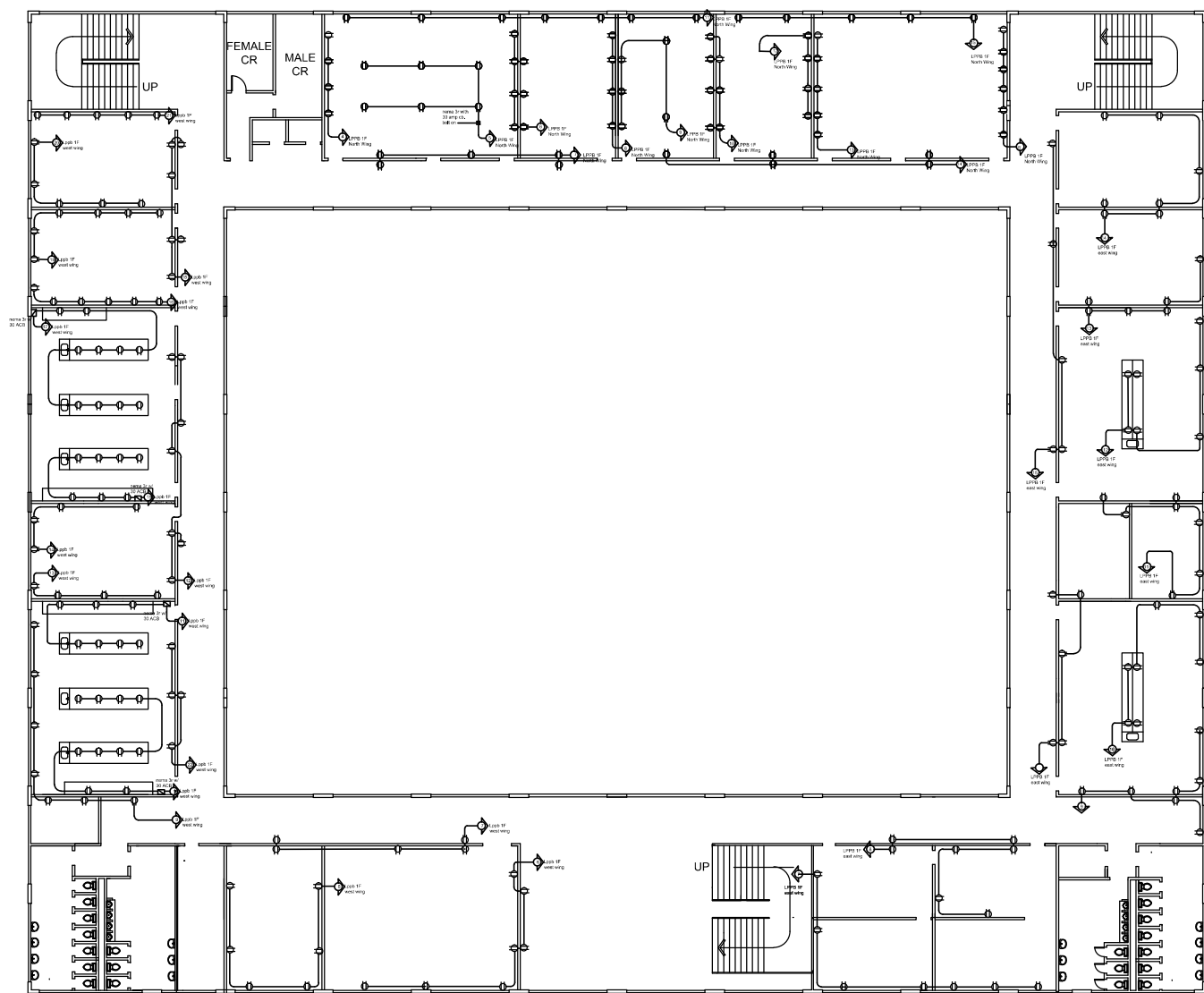
1/F LIGHTING LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC-ES	PROFESSIONAL ELECTRICAL ENGINEER: PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS) LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATAAC ARCHITECT BY RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PPGSD	CONFORME: MARIVIC M. ALIMBUYUGUEN DEAN, CATED	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: LIGHTING LAYOUT PLAN	SHEET NO:  ELECTRICAL PLANS
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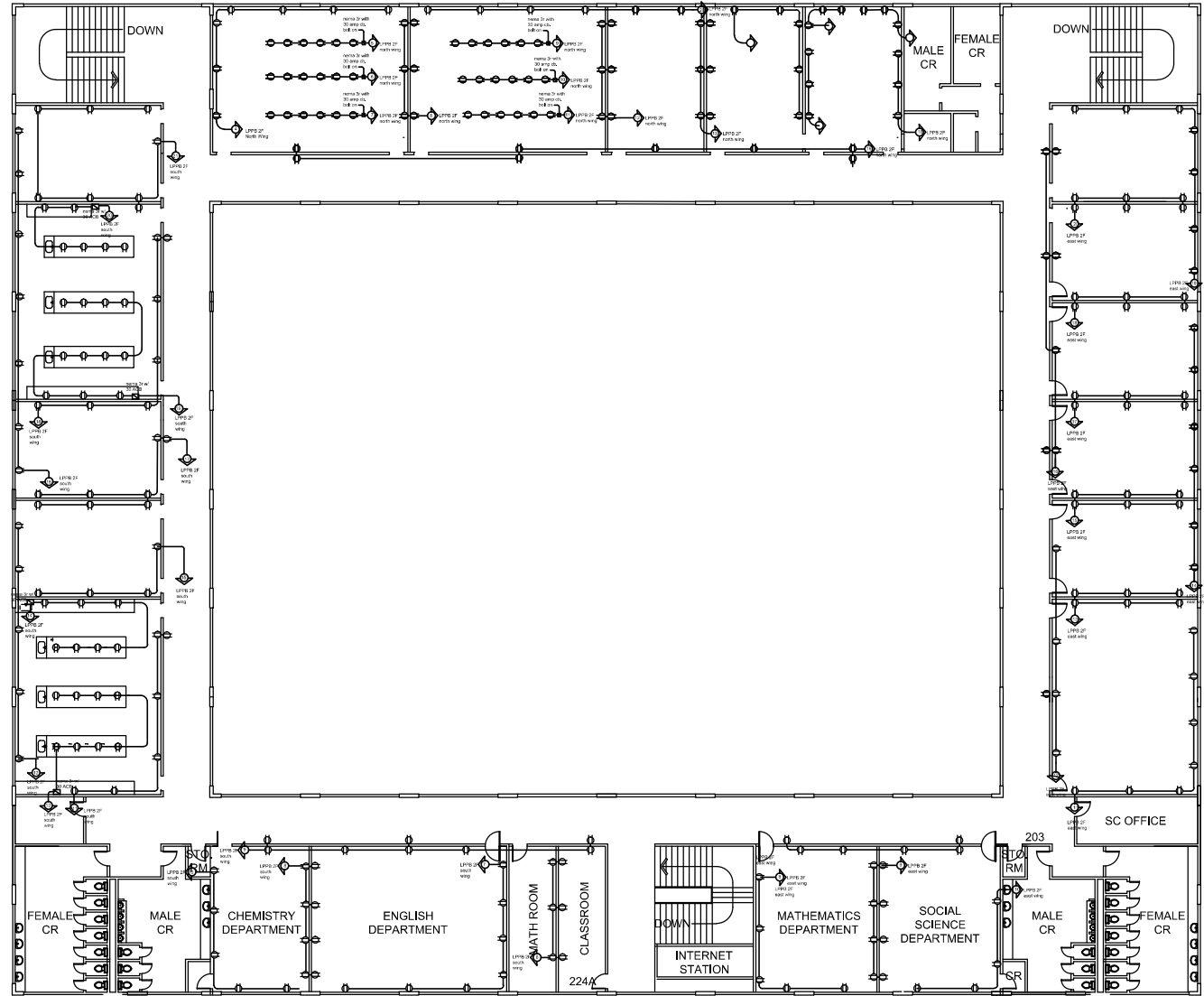
2/F LIGHTING LAYOUT PLAN

	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	AIDA V. CABANG CHIEF BATTAL ARCHITECT BY	MARIVIC M. ALIMBUYUGUEN DEAN, CAFEED	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	LIGHTING LAYOUT PLAN	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRCSS	PRC NO. /ISSUED:		ROMEO R. DULDULAO DIRECTOR, PRCSS				
		DATE:	LOCATION:						
				MMSU CITY OF BATAC, ILOCOS NORTE					



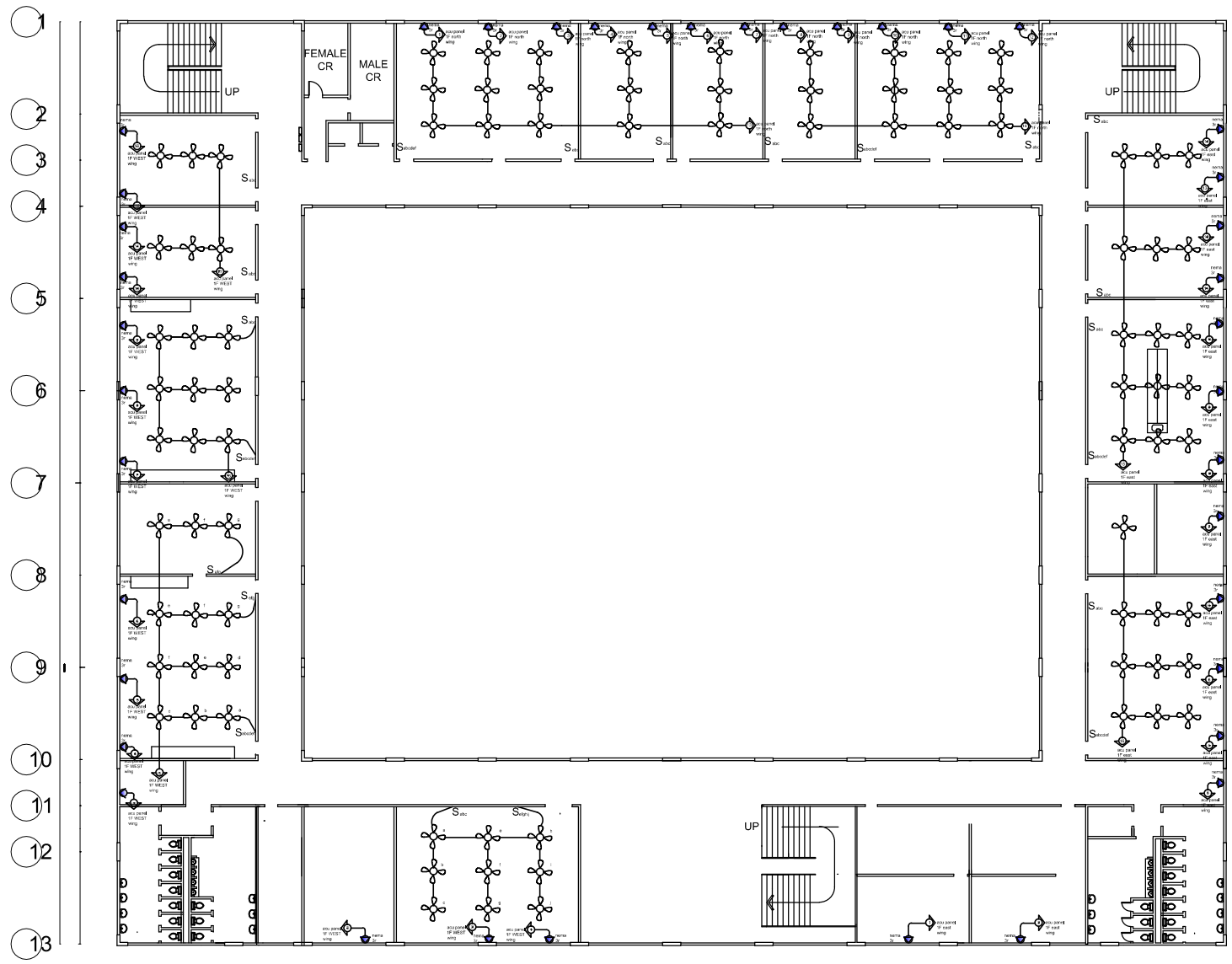
1/F POWER OUTLET LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATTAL ARCHITECT IV	CONFORME: MARIVIC M. ALIMBUYUGUEN DEAN, CAPEP	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: POWER OUTLET LAYOUT PLAN	SHEET NO: 
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC-REG.	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC-REG.				



2/F POWER OUTLET LAYOUT PLAN

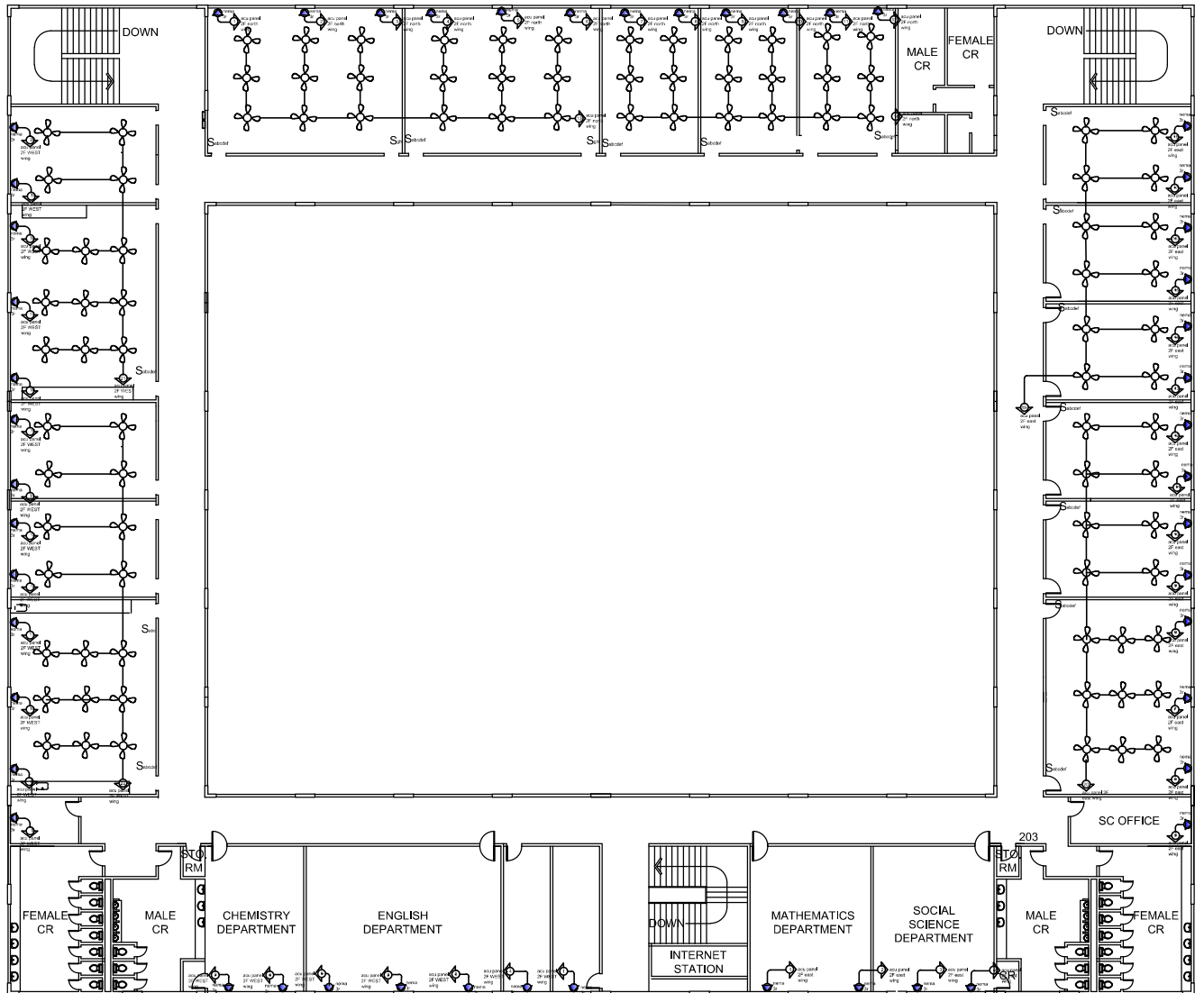
	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATTAL ARCHITECT BY	CONFORME: MARIVIC M. ALIMBUYUGUEN DEAN, CAS	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: POWER OUTLET LAYOUT PLAN	SHEET NO: 
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC				



1/F FAN/ACU OUTLET LAYOUT PLAN

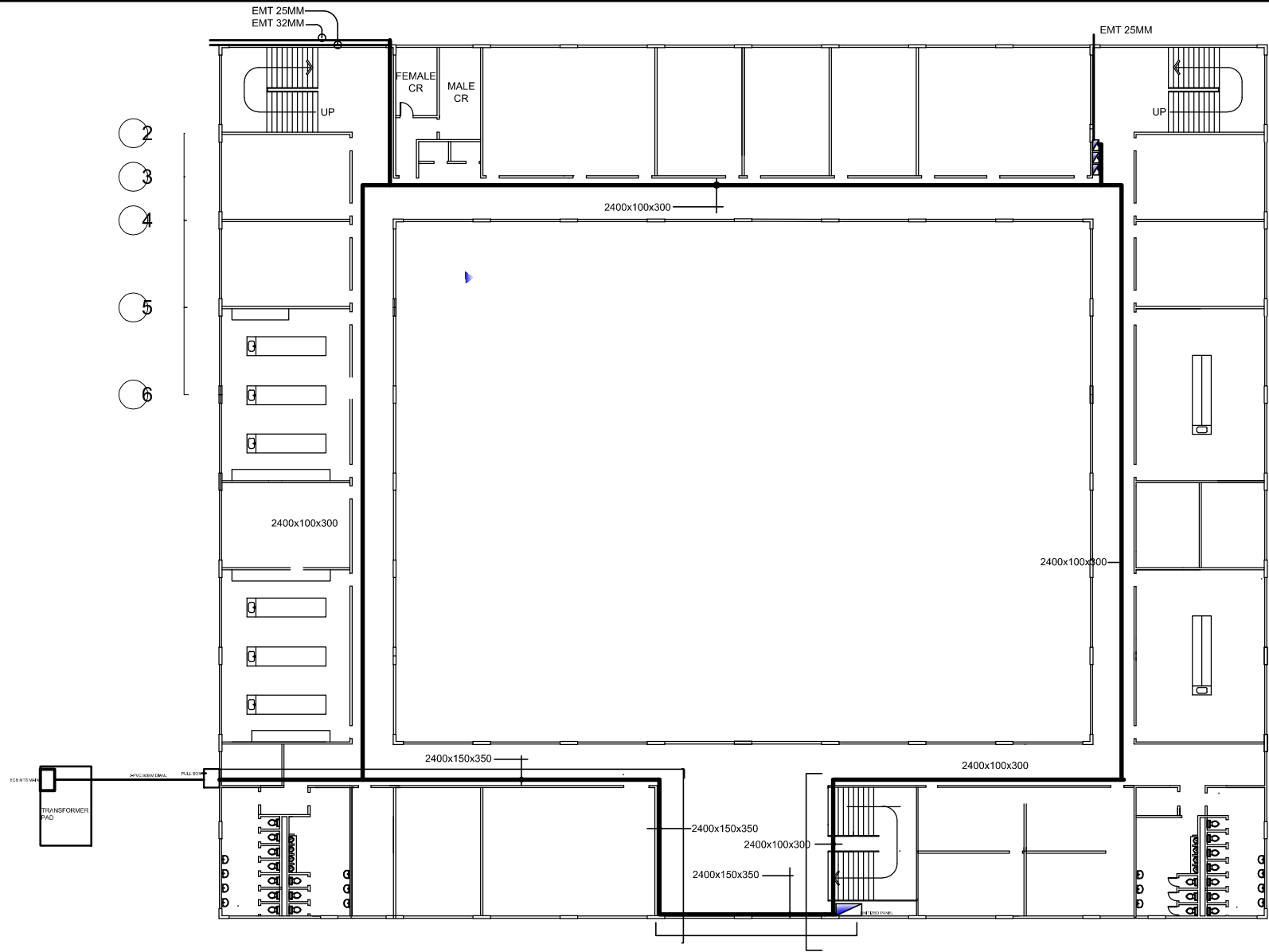
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	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	AIDA V. CABANG CHIEF BATTAL ARCHITECT BY	MARIVIC M. ALIMBUYUGUEN DEAN, CAFE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	FAN/ACU LAYOUT PLAN	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	DATE:		ROMEO R. DULDULAO DIRECTOR, PRC				
			LOCATION:	MMSU CITY OF BATAC, ILOCOS NORTE					

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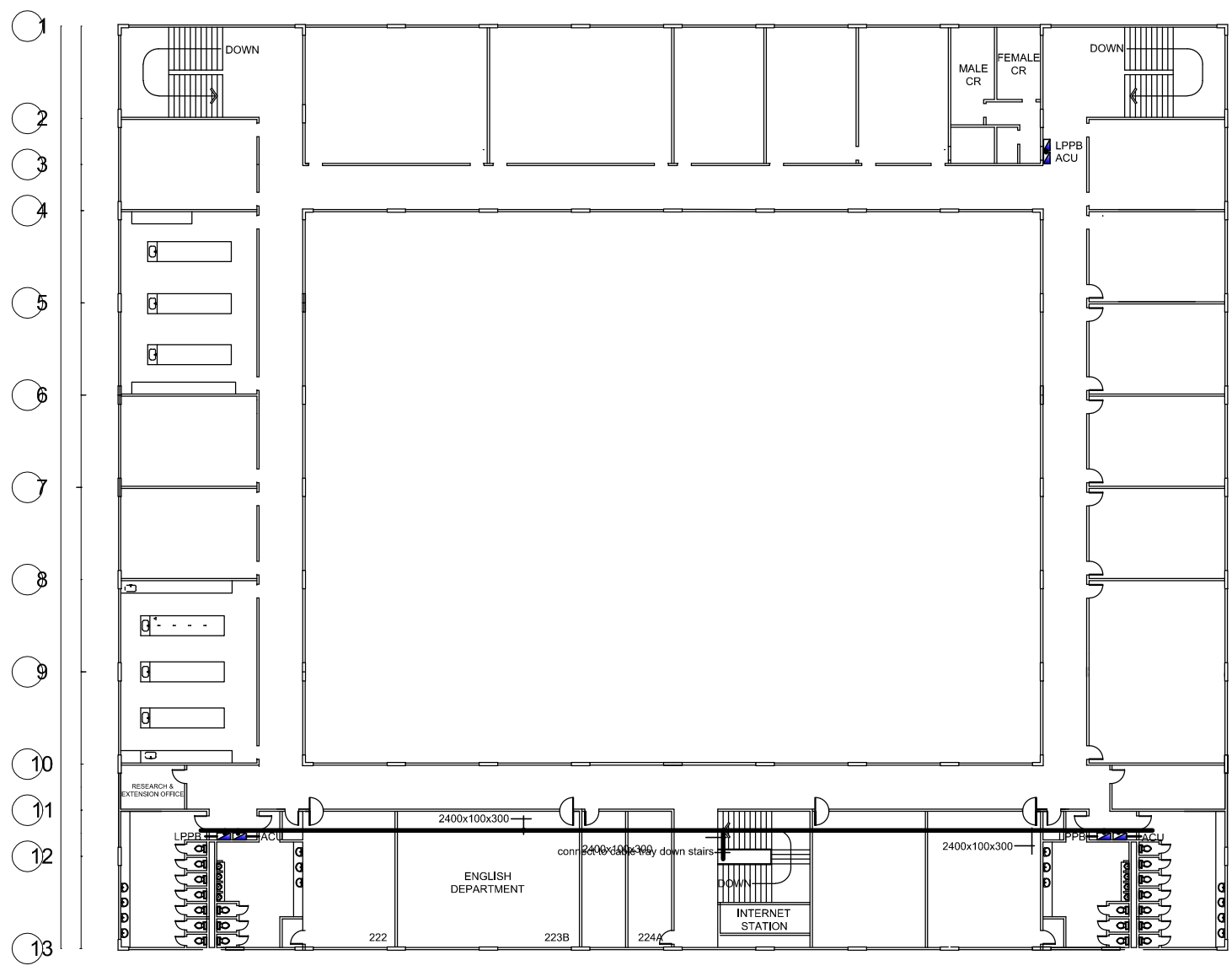
2/F FAN/ACU OUTLET LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATTAL ARCHITECT IV	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC	MARIVIC M. ALIMBUYUGUEN DEAN, CAS	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	FAN/ACU LAYOUT PLAN	 E ELECTRICAL PLANS



CABLE TRAY LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATTAL ARCHITECT IV	CONFORME: MARIVIC M. ALIMBUYUGUEN DEAN, CAFED	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: CABLE TRAY LAYOUT PLAN	SHEET NO: 
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PROSS	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PROSS				



2/F CABLE TRAY LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BATTAL ARCHITECT IV	CONFORME: MARIVIC M. ALIMBUYUGUEN DEAN, CAFED	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: CABLE TRAY LAYOUT PLAN	SHEET NO:  ELECTRICAL PLANS
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC				

DEMAND LOAD TABULATION													
TYPE OF NORTH WING													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3-Ø CURRENT	PHASE CURRENT			CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
				AB	CA	BC	POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE
1	21 sets 120W/15' Fluorescent Lamp	1344		6.690			2	100	15	2-3.5mm ² & 1-2.0mm ²	THHN	25mm	PVC
2	18 sets 120W/15' Fluorescent Lamp	1176		6.1100			2	100	15	2-3.5mm ² & 1-2.0mm ²	THHN	25mm	PVC
3	8 sets 120W/15' Fluorescent Lamp	224			0.9700		2	100	15	2-3.5mm ² & 1-2.0mm ²	THHN	25mm	PVC
4	8 sets 1800A Conventance Light	720		3.1300			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
5	Laboratory table @ 2500	2500		10.000			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
6	7 sets 1800A Conventance Light	1260		6.4700			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
7	3 sets 1800A Conventance Light	600		3.9100			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
8	1 sets 1800A Conventance Light	720		3.1300			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
9	6 sets 1800A Conventance Light	600		3.9100			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
10	7 sets 1800A Conventance Light	1260		6.4700			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
11	7 sets 1800A Conventance Light	1260		6.4700			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
12	3 sets 1800A Conventance Light	720		3.1300			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
13	3 sets 1800A Conventance Light	600		3.9100			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
14	3 sets 1800A Conventance Light	600		3.9100			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
15	3 sets 1800A Conventance Light	600		3.9100			2	100	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
16	Space with teacher												
17	Space with teacher												
18	8 sets 1800A Conventance Light	1080		4.6900			2			2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
		16768		22.200	17.200	22.200							

FEEDER CONDUCTOR
 PL = 3-Ø (25.25) = 76.35
 USE: 3-40mm² & 1-8.0mm² THW Cu, wire in cable tray
 FEEDER PROTECTION
 USE: 1POLE 150A, 60KVA CIRCUIT BREAKER 240V 200A, 60Hz

DEMAND LOAD TABULATION													
ACU PANEL NORTH WING 1/F FEEDER BREAKER 340V 15AT FEEDER CONDUCTOR 3-40mm ² & 1-8.0mm ² THW Cu, wire													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3-Ø CURRENT	PHASE CURRENT			CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
				AB	CA	BC	POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE
1	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
2	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
3	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
4	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
5	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
6	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
7	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
8	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
9	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
10	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
11	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
12	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
13	15 units Onit Fan @ 70 watts	1050		4.5900						2-3.5mm ² & 1-2.0mm ²	THHN	25mm	EMT
14	CANISTER EAST	10.000		10.000						2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
15	Canister EAST	2500		10.000						2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
16	12 units unit Fan @ 70 watts	840		3.6900						2-3.5mm ² & 1-2.0mm ²	THHN	25mm	EMT
17	Electric motor 1.2 hp, 3 phase	2300		6.2000						2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
18	SPACE WITH BUS BAR	4000		18.000	18.000	18.000							

FEEDER CONDUCTOR
 PL = 3-Ø (25.25) (25.25) = 117.25
 USE: 3-40mm² & 1-14mm² THW Cu, wire in cable tray
 MAIN OVER CURRENT DEVICE PROTECTION
 PL = 3-Ø (25.25) (25.25) (40.40) = 144.83
 USE: 3-POLE 150A, MCCB 240V 60 Hz, 65 KVA

DEMAND LOAD TABULATION													
TYPE OF NORTH WING													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3-Ø CURRENT	PHASE CURRENT			CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
				AB	CA	BC	POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE
1	18 sets 120W/15' Fluorescent Lamp	1224		6.5900			2	200	15	2-3.5mm ² & 1-2.0mm ²	THHN	25mm	PVC
2	24 sets 120W/15' Fluorescent Lamp	1344		6.6400			2	200	15	2-3.5mm ² & 1-2.0mm ²	THHN	25mm	PVC
3	8 sets 120W/15' Fluorescent Lamp	224			0.9700		2	200	15	2-3.5mm ² & 1-2.0mm ²	THHN	25mm	PVC
4	7 sets 1800A Conventance Light	1260		6.4700			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
5	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
6	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
7	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
8	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
9	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
10	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
11	Oni Laboratory table @ 2500	2500		10.000			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
12	7 sets 1800A Conventance Light	1260		6.4700			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
13	3 sets 1800A Conventance Light	1080		3.1300			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
14	3 sets 1800A Conventance Light	600		3.1300			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
15	3 sets Conventance Light @ 1800w	1620		6.6200			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
16	3 sets Conventance Light @ 1800w	1620		6.6200			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
17	3 sets Conventance Light @ 1800w	1620		6.6200			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
18	3 sets Conventance Light @ 1800w	1620		6.6200			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
19	8 sets 1800A Conventance Light	1440		4.6900			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
20	8 sets 1800A Conventance Light	1080		3.9100			2	200	30	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
21													
22													
23													
24													
		31900		34.000	34.000	34.000							

FEEDER CONDUCTOR
 PL = 3-Ø (40.40) = 81.19
 USE: 3-40mm² & 1-14.0mm² THW Cu, wire in cable tray
 FEEDER PROTECTION
 USE: 3-POLE 150A, 60KVA CIRCUIT BREAKER 240V 200A, 60Hz

DEMAND LOAD TABULATION													
ACU PANEL NORTH WING 1/F FEEDER BREAKER 340V 15AT FEEDER CONDUCTOR 3-40mm ² & 1-2.0mm ² THW CU WIRE													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3-Ø CURRENT	PHASE CURRENT			CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
				AB	CA	BC	POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE
1	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
2	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
3	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
4	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
5	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
6	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
7	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
8	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
9	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
10	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
11	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
12	1 set SPP ACU Panel SPT Type	2000		12.6			2	225	40	2-8.0mm ² & 1-3.5mm ²	THHN	25mm	EMT
13	18 units Office Air @ 1500w	1260		5.40			2	225	30	2-5.0mm ² & 1-6.0mm ²	THHN	25mm	EMT
14	18 units Office Air @ 1500w	1260		5.40			2	225	30	2-5.0mm ² & 1-6.0mm ²	THHN	25mm	EMT
15	SPACE HEATS BATH BAR												
16	SPACE HEATS BATH BAR												
17	SPACE HEATS BATH BAR												
18	SPACE HEATS BATH BAR												
		3726		55.870	55.870	55.870	3						

FEEDER CONDUCTOR
 $I_{FL} = \sqrt{3} (25.58) = 44.32$
 USE: 3-22mm² & 1-8.0mm² THW Cu wire in cable tray

FEEDER PROTECTION
 USE: 3 POLE 70AT, 50KAIC CIRCUIT BREAKER 240V, 100AF, 60HZ

FEEDER PROTECTION
USE: 3 POLE 100A, 50KAIC CIRCUIT BREAKER, 240V, 100AF
6647

FEEDER CONDUCTOR
IFL = $\sqrt{3}$ (36.42) = 63.07
USE: 3-30mm² & 1-8.0mm² THW Cu. wire in cable to

FEEDER PROTECTION
USE: 3 POLE 100AT, 50KAC CIRCUIT BREAKER 24

DEMAND LOAD TABULATION													
ACI PANEL EAST W/ST. FEEDER BREAKERS JARVIS TSIAT FEEDER CONDUCTOR 340mm ² & 120mm ² 170V CL 1980													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	→ CURRENT	PHASE CURRENT			CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
				1R	2R	3R	POLE	4R	5R	TYPE	NUMBER	TYPE	
1	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
2	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
3	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
4	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
5	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
6	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
7	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
8	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
9	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
10	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
11	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
12	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
13	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
14	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
15	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
16	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
17	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT
18	1 x 600 WSP ACB 10000kVA CONCENTRAL	2750	12.6	12.6	0	0	2	225	30	3- 60mm ² & 12- 35mm ²	THHN	20mm	EMT

FEEDER CONDUCTOR
 $IFL = \sqrt{3} (82.40 + 12.625) = 113.55$
 USE: 3-30mm² & 1-34mm² T/FW Cu. wire in cable tray

MAIN OVER CURRENT DEVICE PROTECTION
 $IFL = \sqrt{3} (250W/12.625) + 48.8 = 140.81$ A
 USE: 3 POLE 175A, MCCB, 240V 60 HZ., 85 KAJC

[illegible]

FEEDER CONDUCTOR
 $FL = \sqrt{3} (79.25 + 12.9(25)) = 142.71$
 USE: 3-100mm² & 1-30mm² THW Cu, wire in cable tray

MAIN OVER CURRENT DEVICE PROTECTION
 $FL = \sqrt{3} (250)(12.60) + 66.66 = 169.09 \text{ A}$
 USE: 3 POLE 200A, MCCB, 240V 60 HZ, 85 KAIC

DEMAND LOAD TABULATION														
UNITED STATES PANEL MDP - FREEDOM CONDUCTOR (480/240/120V)														
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3-Ø CURRENT	CIRCULE BREAKER			CONDUCTOR		CONDUIT					
				AB	CA	BC	POLE	AF	AT	SIZE	TYP	SWIMTER	TYPE	
1	1PHR 1F EAST WING	10844	22.24	21.03	24.03	24.08	3	1600	70	3-12mm ² & 1-6.0mm ²	75W		6000	10
2	1PHR 1F WEST WING	23804	52.34	50.08	56.26	56.26	3	1600	100	3-16mm ² & 1-6.0mm ²	75W		6000	10
3	1PHR 2F EAST WING	20004	24.67	25.59	24.64	24.64	3	1600	70	3-12mm ² & 1-6.0mm ²	75W		6000	10
4	1PHR 2F WEST WING	21832	30.42	34.68	34.68	34.68	3	1600	100	3-16mm ² & 1-6.0mm ²	75W		6000	10
5	ACU PANEL 1F EAST WING	44456	97.40	92.40	92.49	92.49	3	1600	175	3-36mm ² & 1-22mm ²	75W		6000	10
6	ACU PANEL 1F WEST WING	45582	101.00	95.02	95.16	95.16	3	1600	175	3-36mm ² & 1-22mm ²	75W		6000	10
7	ACU PANEL 2F EAST WING	48896	110.74	112.08	112.08	112.08	3	2000	260	3-100mm ² & 1-4mm ²	75W		6000	10
8	ACU PANEL 2F WEST WING	56667	127.56	131.98	131.98	131.98	3	2000	260	3-100mm ² & 1-4mm ²	75W		6000	10
9	NORTH WING	130018	288	183.62	180.62	174.99	3	1600	300	Swath 3-40mm ² & 1-30mm ²	75W		6000	10
10														
10		402474	0	885.00	885.00	885.00								

DEMAND LOAD TABULATION										
ADD PANEL WENT W/BLT FEEDER BREAKERS SATISFIES ADD FEEDER CONDUIT 3/4"min & 3/4"min 1996 CL. 1996E										
CIRCUIT NUMBER	LOAD DESCRIPTION	VOLTAG	3/4" CONDUIT	PHASE CURRENT	CIRCUIT BREAKER	CONDUCTION		CONDUIT		
						TYPE	DEPTH	TYPE		
1	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
2	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
3	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
4	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
5	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
6	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
7	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
8	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
9	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
10	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
11	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
12	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
13	1 PH 200HP AC MOTOR CONVENTIONAL	2700	12	40	182	225 A3	3/4"	18"	THHN	20mm DMT
14	1 PH 200HP AC Motor CONVENTIONAL	1840	9.0	30	125	125 A3	3/4"	18"	THHN	20mm DMT
15	3 480V Delta Fan @ 7500	3600	3.655mm	2	225 A3	3/4"	18"	18mm	THHN	15mm DMT
16										
17	3 480V Delta Fan @ 7500	420		1.95	270mm	2	225 A3	3/4"	18"	18mm DMT
18	3 480V Delta Fan @ 7500	420		1.95	270mm	2	225 A3	3/4"	18"	18mm DMT
19		40832		61.00mm @ 2500 180 300						

FEEDER CONDUCTOR
 $FL = \sqrt{3} (81.30 + 12.6 / .25) = 112.49$
 USE: 3 #50mm² & 1 - 14mm² THW Cu. wire in cable tray

MAIN OVER CURRENT DEVICE PROTECTION
 $FL = \sqrt{3} (250 \times (12.60) + 49.5) = 138.77$
 USE: 3 POLE 175AT, MCCB, 240V 60 HZ, 85 KAIC

DEMAND LOAD TABLE															
ACU PANEL WEST WIND-1 FEEDER BREAKER 3-PHASE 2000 FEEDER CONDUCTOR 3-50mm ² >50mm ² 17m G.C. JERRE															
CIRCUIT NUMBER	LOAD DESCRIPTION	VA/LOAD	3-φ CURRENT	PHASE CURRENT			CIRCUIT BREAKER			CONDUCTOR		CONDUIT			
				AB	CA	CB	POLE	AF	AT	SIZE	TYPE		DIMETER	TYPE	
1	1 unit 300KVA capacitor bank	2300					2	230	30	2	230	30	75mm ²	25mm	EMT
2	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
3	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
4	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
5	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
6	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
7	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
8	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
9	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
10	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
11	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
12	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
13	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
14	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
15	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
16	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
17	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
18	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
19	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
20	1 unit 300KVA capacitor bank	2300					2	230	40	2	230	40	75mm ²	25mm	EMT
21	15 Bells to main bus bar	1070					4.500A	237	20	2	230mm ²	16mm	75mm ²	16mm	EMT
22	21 Bells to main bus bar	1470					6.000A	238	20	2	230mm ²	16mm	75mm ²	16mm	EMT
23															
24		66667					87.500A	81.800	80.000						

FEEDER CONDUCTOR
 $IFL = \sqrt{3} (87.66 + 12.6(28)) = 157.10A$
 USE: 3-100mm² & 1-30mm² THW Cu. wire inn

MAIN OVER CURRENT DEVICE PROTECTION
 $I_L = \sqrt{3} (250\% (12.60) + 74.96) = 194.36 \text{ A}$
 USE: 3 POLE 200AT, MCCB, 240V 60 HZ, 85 KAIC

COMPUTATION
 $I_{\text{BUS}} = I + 3 \cdot (65.87 + 102.72 \text{ AMP})$
 $P_{\text{BUS}} = 3 \cdot (102.72) \cdot (235) = 40654.01 \text{ VA}$
 Transformer per kva = 135,530.20 kva

MAIN OVER CURRENT DEVICE PROTECTION
 $I_{FL} = 50100 \text{ mm}^2 / (3)$
 $I_L = 1287.91 \text{ AMPERES}$
 $U_L = 120 \text{ VAT } 3\text{-POLE}, \text{ MCCB, } 85 \text{ kAIC } 1200 \text{ AF, } 230 \text{ V, } 60 \text{ HZ}$
 FEEDER CONDUCTOR
 $I_{SE} = 45135 \text{ [3-200mm}^2 \text{ 1-30mm THW CU WIRE in cable tray}]$



FROM THE OFFICE:

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FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN
CHECKED BY:
RIGOR G. GABUR ELECTRICAL ENGINEER, RPPSD

PROFESSIONAL ELECTRICAL ENGINEER:
PRC NO./VALIDITY:
PTR.:
PLACE ISSUED:
DATE:
TIN:

PROJECT TITLE:	
REHABILITATION OF THE ELECTRIC SYSTEM OF COLLEGES (CAS)	
LOCATION:	MMSU CITY OF BATAC, ILOCOS NORTE

CHECKED/REVIEWED BY:	
	AIDA V. CABA CHIEF NFRA, ARCHITECT
RECOMMENDING APPROVAL:	
	ROMEO R. DULZ DIRECTOR, PPGSD

ONFORME:

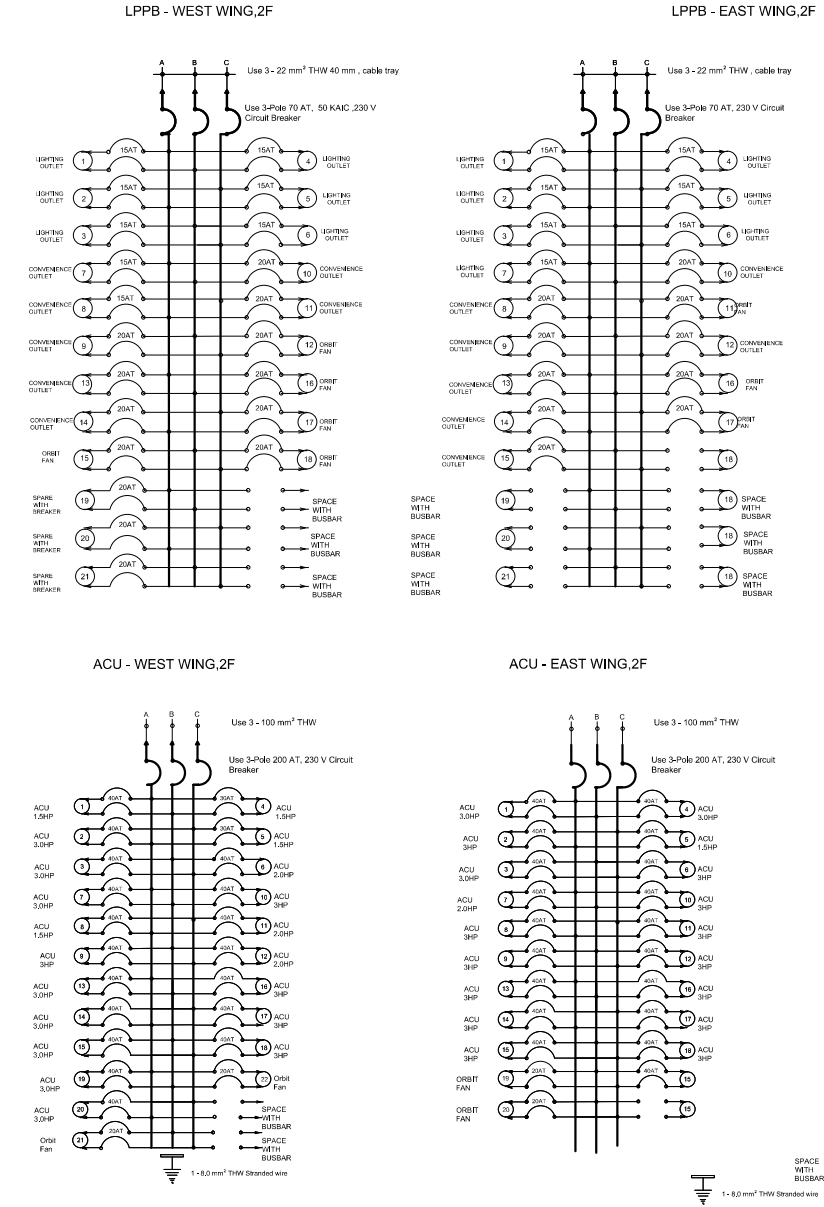
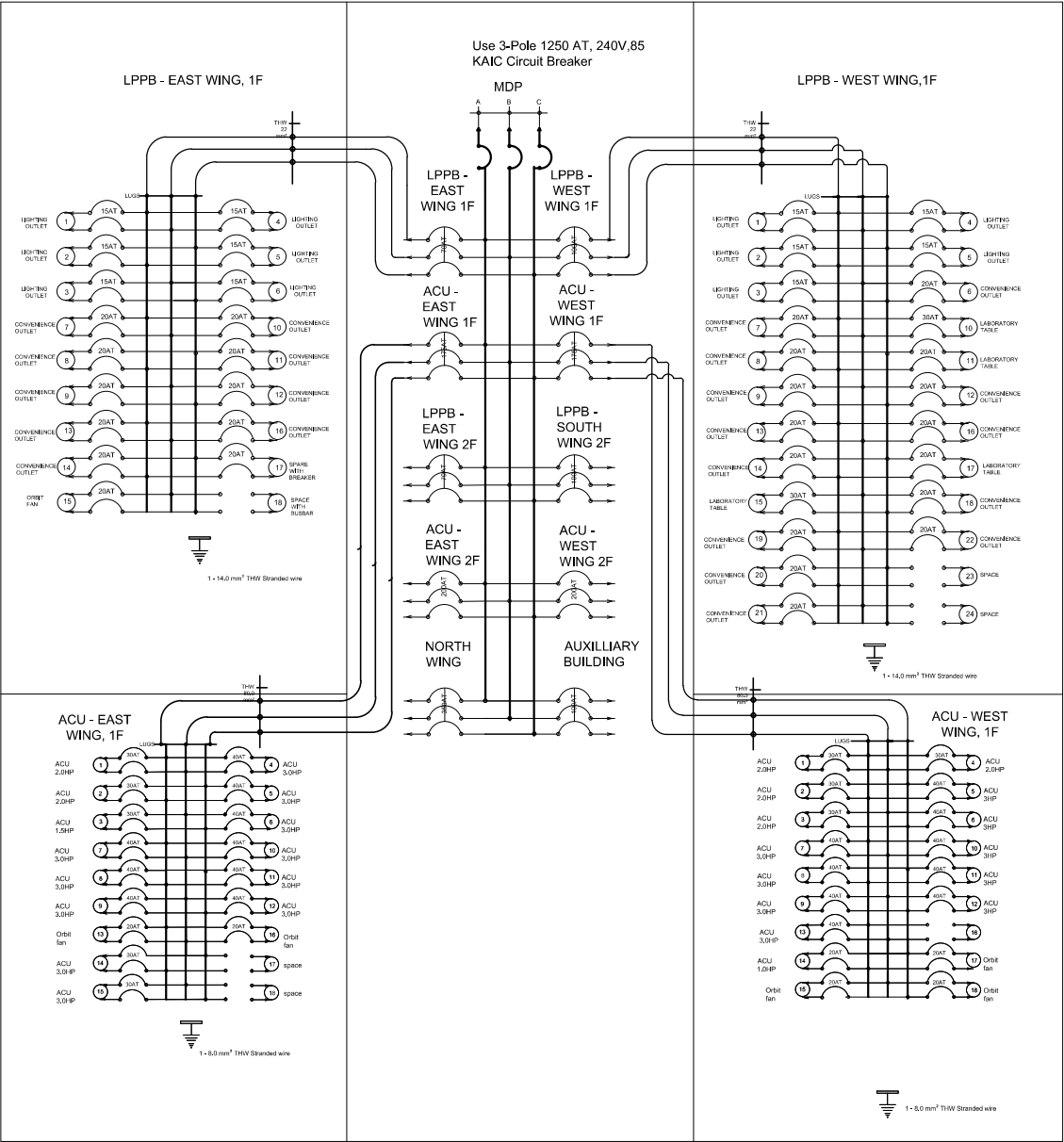
MARIVIC M. ALIMBUYUGUEN
DEAN, CAFSD

APPROVED BY:	
	SHIRLEY C. AGRUPIS

SCHEDULE OF LOADS

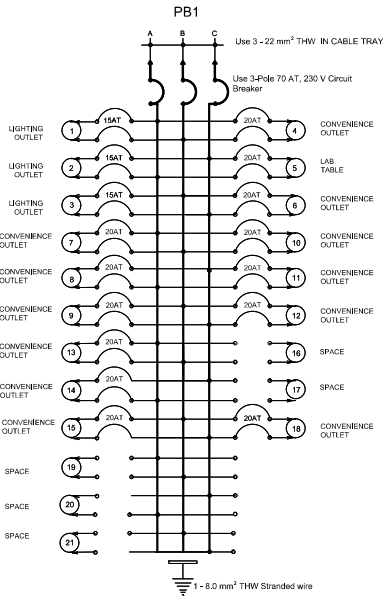


UNITIZED PANEL

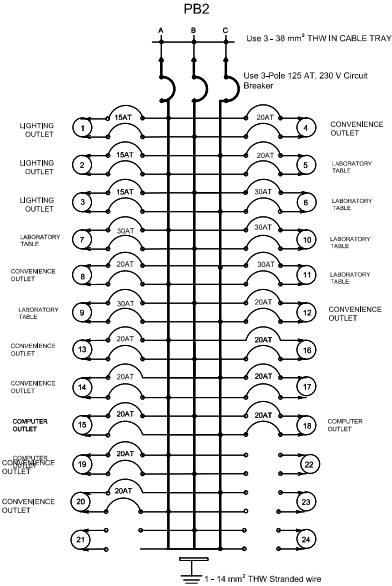


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	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	FREDDIE MICHAEL S. BALANAY REGISTERED MASTER ELECTRICIAN		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CAS)	aida v. cabang CHIEF BATTAL ARCHITECT	MARIVIC M. ALIMBUYUGUEN DEAN, CATED	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	PANEL BOARD DIAGRAM	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRCSS	DATE:		ROMEO R. DULDULAO DIRECTOR, PRCSS				
			DATE:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE					

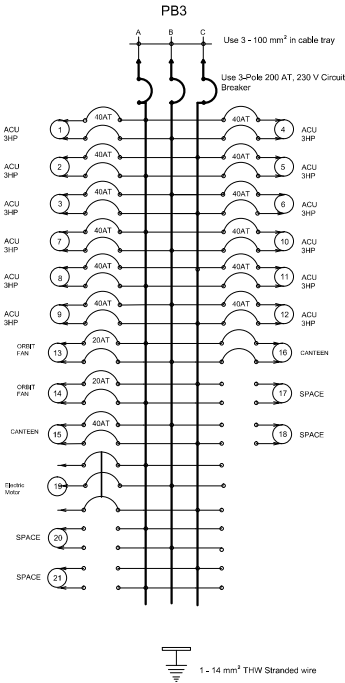
LPPB - NORTH WING,1F



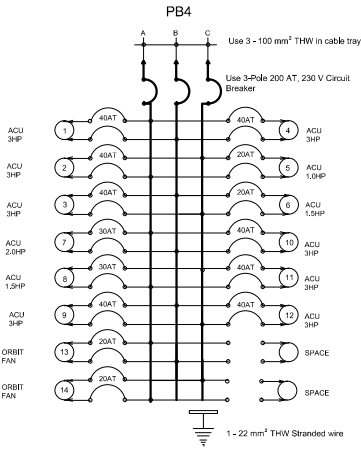
LPPB - NORTH WING,2F



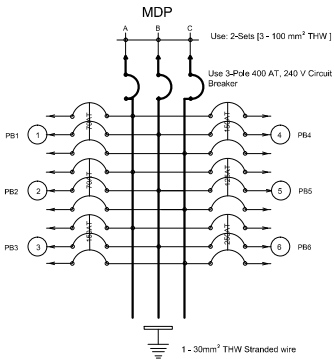
ACU - NORT WING,1F



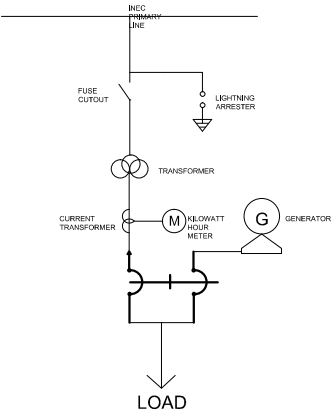
LPPB - NORTH WING,2F



MDP- NORTH WING,2F



SINGLE LINE DIAGRAM



FROM THE OFFICE:

PHYSICAL PLANT AND GENERAL SERVICES DIVISION

2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY
City of Batac, 2008 Ilocos Norte
Telefax: +63 (77) 792-3191

PREPARED BY:

FREDDIE MICHAEL S. BALANAY
REGISTERED MASTER ELECTRICIAN

CHECKED BY:

RIGOR G. GABUR
ELECTRICAL ENGINEER, PRC

PROFESSIONAL ELECTRICAL ENGINEER:

PROJECT TITLE:

REHABILITATION OF THE ELECTRICAL
SYSTEM OF COLLEGES (CAS)

LOCATION:

MMSU CITY OF BATAc, ILOCOS NORTE

CHECKED/REVIEWED BY:

AIDA V. CABANG
CHIEF BATAc, ARCHITECT

RECOMMENDING APPROVAL:

ROMEO R. DULDULAO
DIRECTOR, PRC

CONFORME:

MARIVIC M. ALIMBUYUGUEN
DEAN, CAS

APPROVED BY:

SHIRLEY C. AGRUPIS
UNIVERSITY PRESIDENT

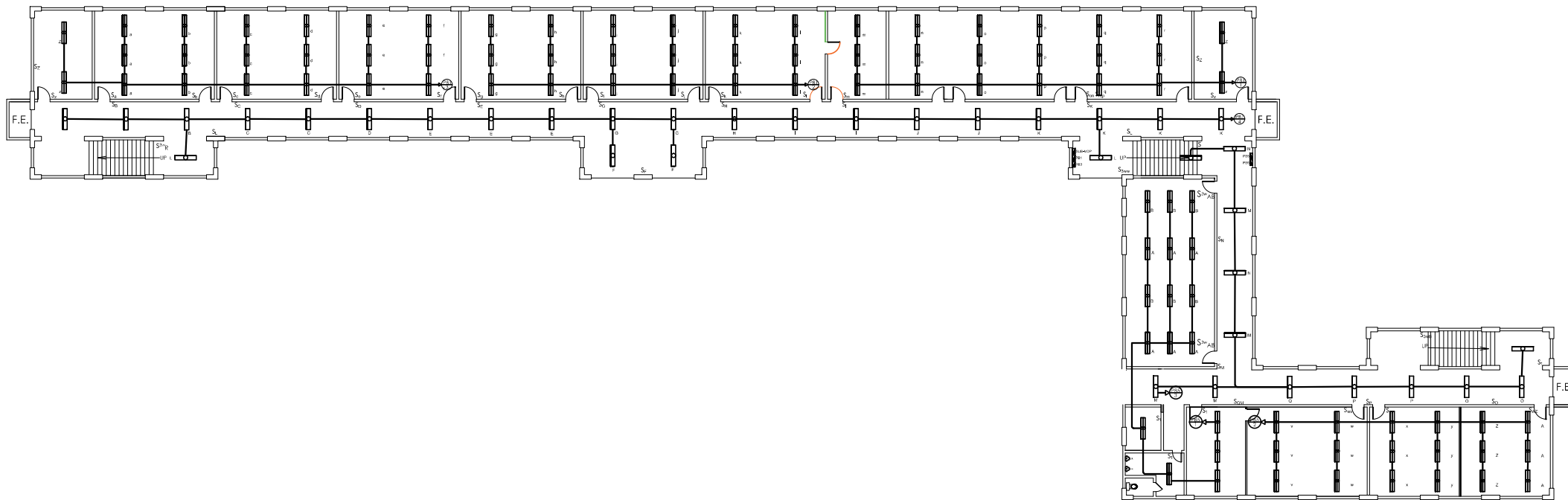
SHEET CONTENTS:

PANEL BOARD DIAGRAM

SHEET NO:

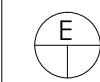
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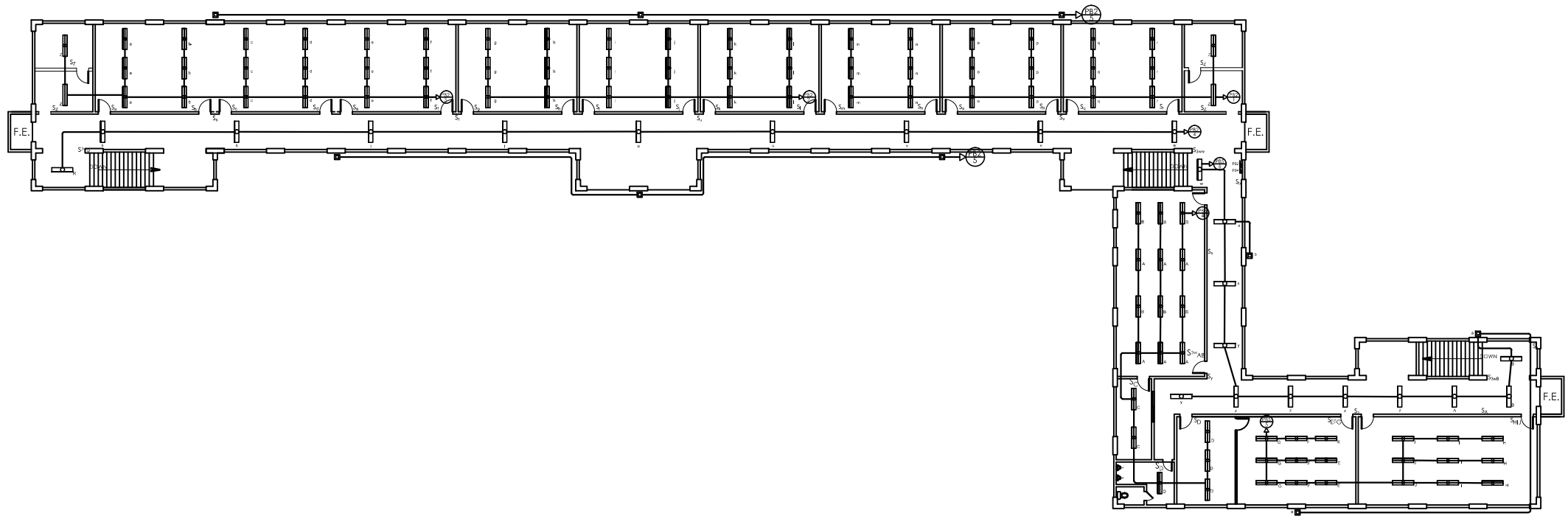
ELECTRICAL PLANS



1/F LIGHTING LAYOUT PLAN

NOTE: Use existing lighting fixtures

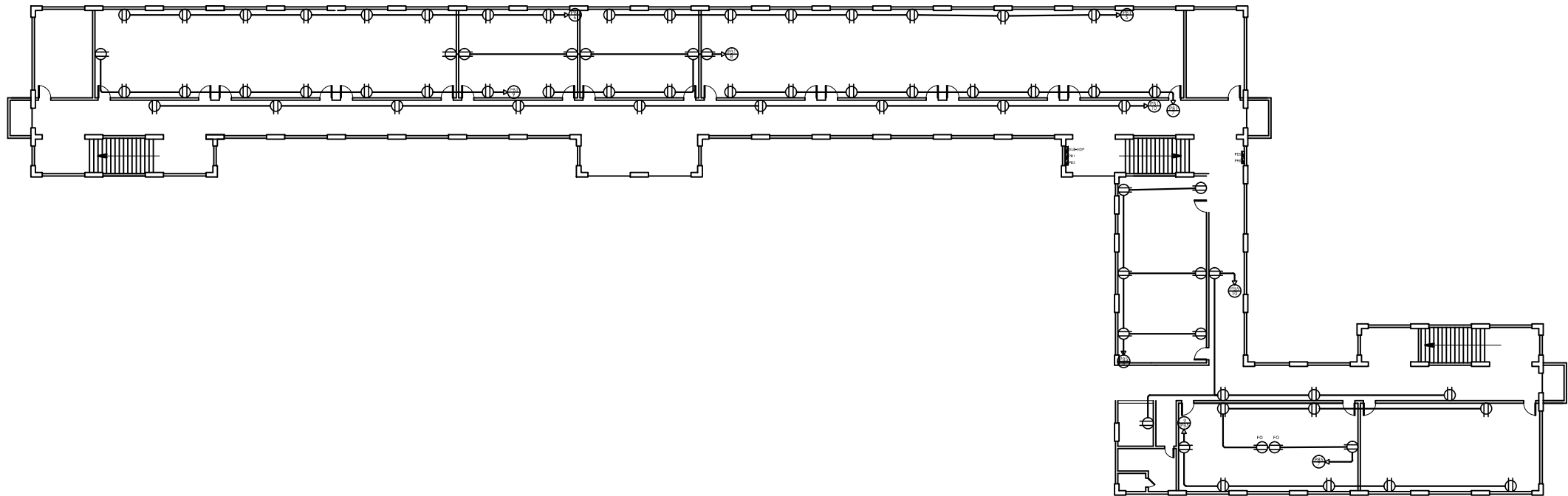
	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batas, 2903, Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: CARLO HUMPER P. GUMTANG ENGINEER I	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CHS)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF ENCL. ARCHITECT IV	CONFORME: MANOLITA S. CRISOSTOMO DEAN, CHS	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: LIGHTING LAYOUT PLAN	SHEET NO:  ELECTRICAL PLANS
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER - PROJECT	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC				



2/F LIGHTING LAYOUT PLAN

NOTE: Use existing lighting fixtures

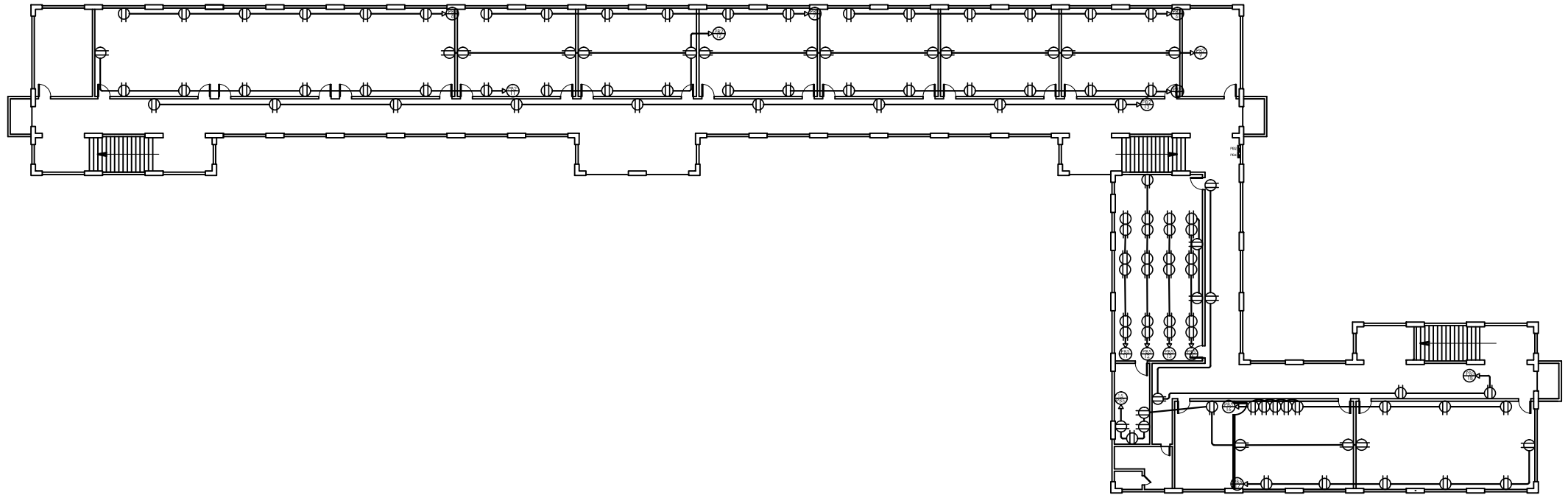
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		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER - PROJECT	PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	LOCATION: MMSU CITY OF BATANG, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DEPARTMENT PRINCIPAL				



1/F POWER OUTLET LAYOUT PLAN

NOTE: Install brand new C.O.

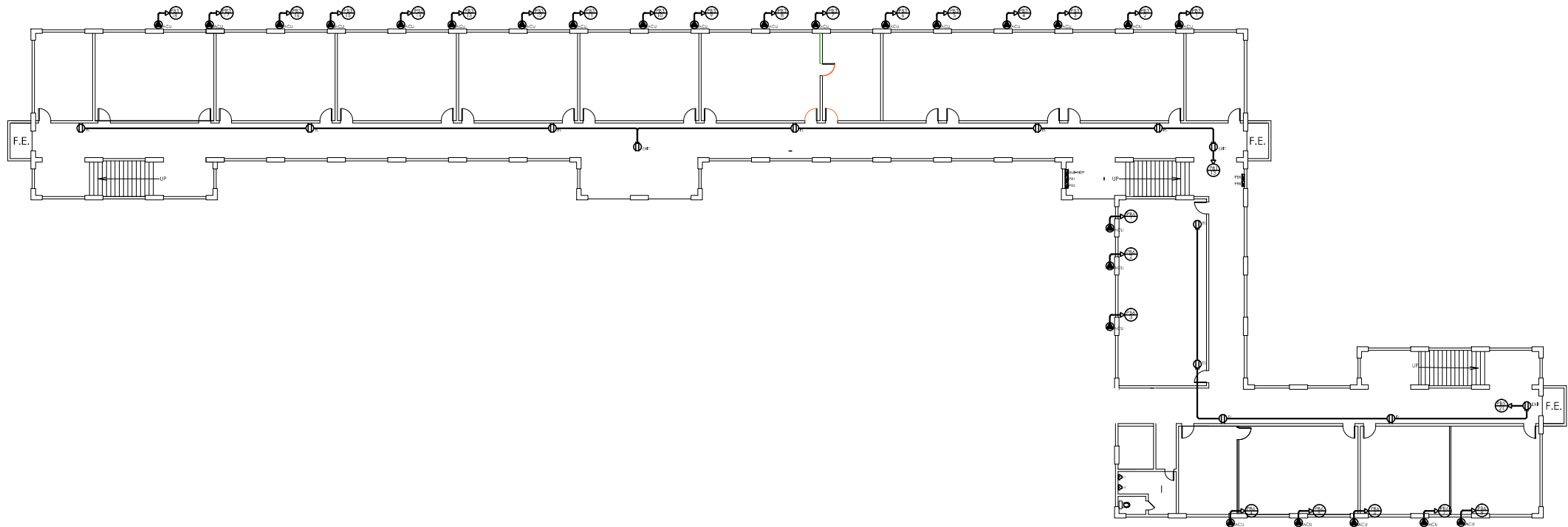
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		CHECKED BY:	PRC NO./VALIDITY:	LOCATION: MMSU CITY OF BATANG, ILOCOS NORTE	AIDA V. CABANG CHIEF ELECTRICAL ARCHITECT	MANOLITA S. CRISOSTOMO DEAN, CHS	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	CONVENIENCE OUTLET LAYOUT PLAN	
		RIGOR G. GABUR ELECTRICAL ENGINEER - PROJECT	DATE:		RECOMMENDING APPROVAL:				
			TIN:		ROMEO R. DULDULAO DIRECTOR, PRC				



2/F POWER OUTLET LAYOUT PLAN

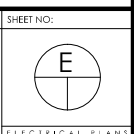
NOTE: Install brand new C.O.

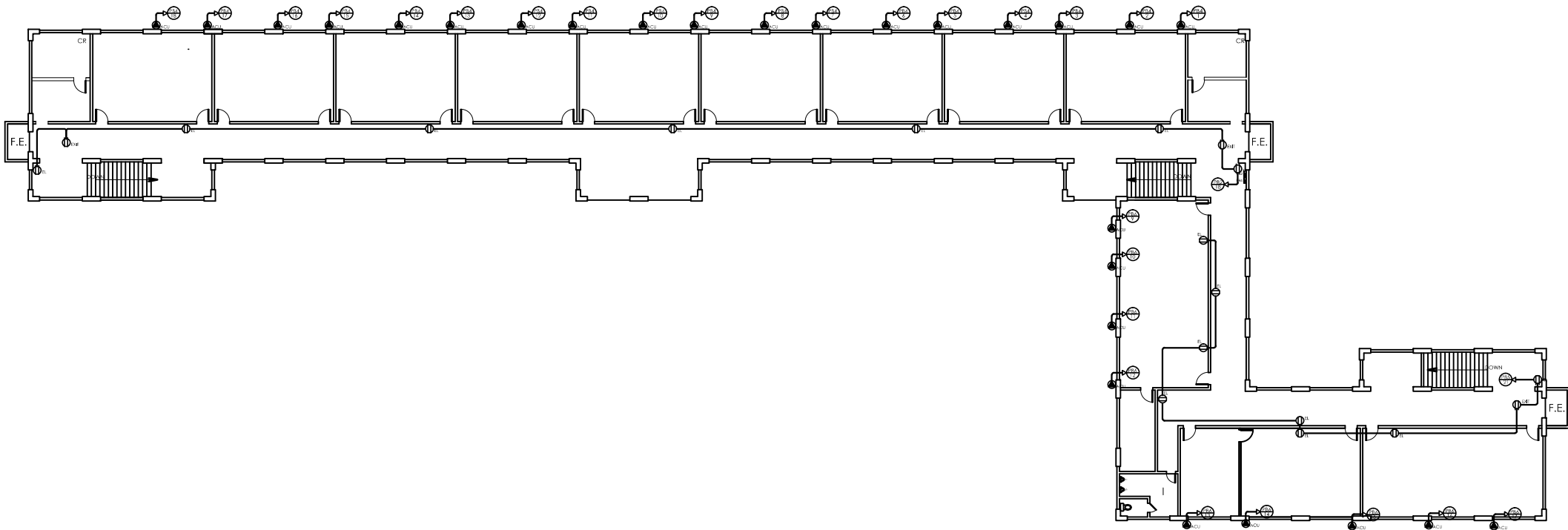
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	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2905 Baco, Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER I		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CHS)	AIDA V. CABANG CHIEF ENCL. ARCHITECT IV	MANOLITA S. CRISOSTOMO DEAN, CHS	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	CONVENIENCE OUTLET LAYOUT PLAN	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER - PROPOSED	PLACE ISSUED:		ROMEO R. DULDULAO DEPARTMENT PRINCIPAL				
			DATE:	LOCATION:					
			TIN:	MMSU CITY OF BATAC, ILOCOS NORTE					



1/F ACU OUTLET LAYOUT PLAN

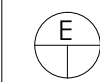
NOTE: Install NEMA3r w/ CB for ACU outlet

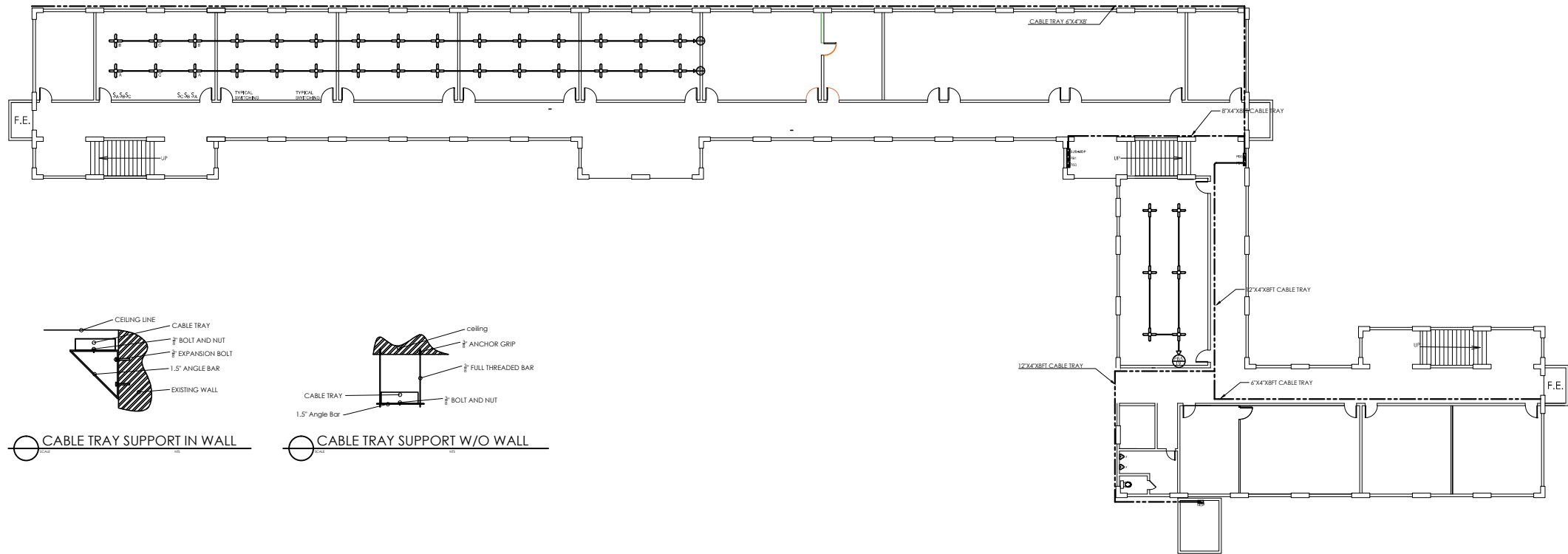
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2/F ACU OUTLET LAYOUT PLAN

NOTE: Install NEMA3r w/ CB for ACU outlet

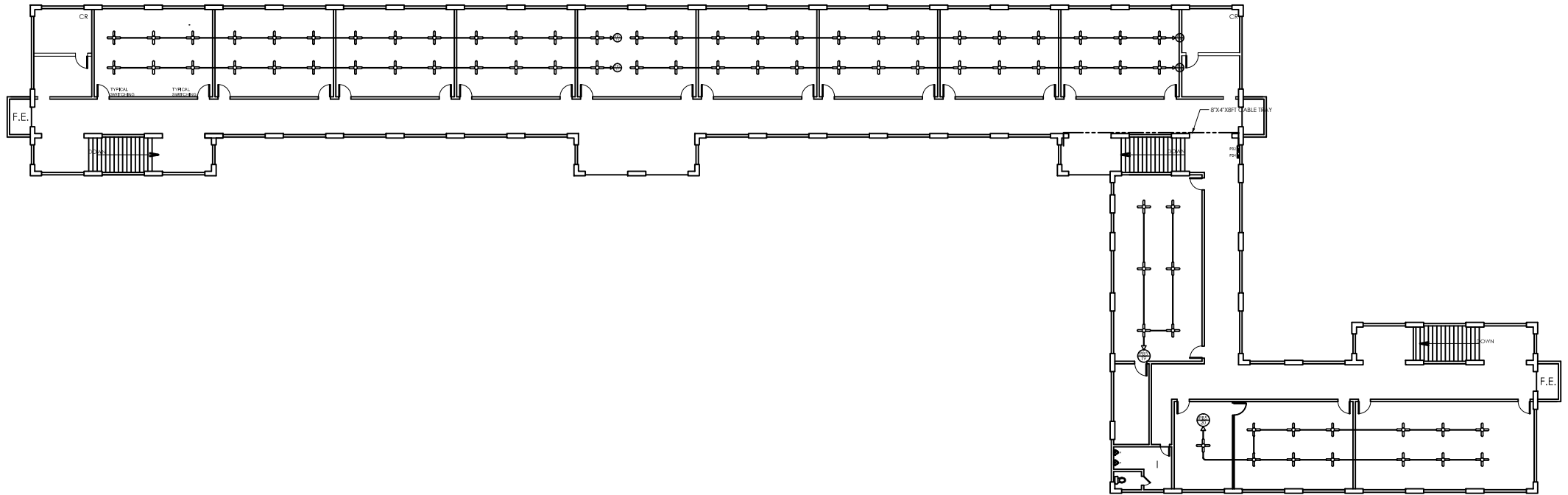
	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang 2005 Baco Norte Telefax: +63 (77) 792-3191	PREPARED BY: CARLO HUMPER P. GUMTANG ENGINEER I	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CHS)	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO.:
		CHECKED BY:	PRC NO./VALIDITY:		AIDA V. CABANG CHIEF ELECTRICAL ARCHITECT	MANOLITA S. CRISOSTOMO DEAN, CHS	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	POWER OUTLET LAYOUT PLAN	
		RIGOR G. GABUR ELECTRICAL ENGINEER - PROJECT	DATE:	LOCATION:	RECOMMENDING APPROVAL:				
			DATE:	MMSU CITY OF BATANG, ILOCOS NORTE	ROMEO R. DULDULAO DEPARTMENT PRINCIPAL				



1/F FAN OUTLET AND CABLE TRAY LAYOUT PLAN

NOTE: Install brand new orbit fan

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang 2005 Baco Norte Telefax: +63 (77) 792-3191	PREPARED BY: CARLO HUMPER P. GUMTANG ENGINEER I CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER - PROPOSED	PROFESSIONAL ELECTRICAL ENGINEER: PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CHS) LOCATION: MMSU CITY OF BATANG, ILOCOS NORTE	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF ELECTRICAL ARCHITECT RECOMMENDING APPROVAL: ROMEO R. DULDULAO DEPUTY CHIEF	CONFORME: MANOLITA S. CRISOSTOMO DEPUTY CHIEF	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: FAN AND CABLE TRAY LAYOUT PLAN	SHEET NO:  E ELECTRICAL PLANS
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2/F FAN OUTLET AND CABLE TRAY LAYOUT PLAN

NOTE: Install brand new orbit fan

	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO.:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2905 Baco, Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG (ENGINEER I)		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CHS)	AIDA V. CABANG (CHIEF ELECTRICAL ARCHITECT IV)	MANOLITA S. CRISOSTOMO (DEAN, CHS)	SHIRLEY C. AGRUPIS (UNIVERSITY PRESIDENT)	FAN AND CABLE TRAY LAYOUT PLAN	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR (ELECTRICAL ENGINEER, PROJECT)	PLACE ISSUED:		ROMEO R. DULDULAO (DIRECTOR, PROJECT)				
			DATE:						
			TEL:	LOCATION:	MMSU CITY OF BATAC, ILOCOS NORTE		ELECTRICAL PLANS		

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT		
						POLE	AT	AT	SIZE	TYPE	DIAMETER	TYPE	TYPE
1	20 sets 200W Fluorescent Lamp	1120	4.87			2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
2	18 sets 200W Fluorescent Lamp	1008		4.38		2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
3	20 sets 200W Fluorescent Lamp	1120			4.87	2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
4	24 sets 100W Fluorescent Lamp	672	2.92			2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
5	8 sets 180VA Convenience Outlet	1440		6.26		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
6	8 sets 180VA Convenience Outlet	1440			6.26	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
7	8 sets 180VA Convenience Outlet	1440	6.26			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
8	9 sets 180VA Convenience Outlet	1420		7.04		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
9	8 sets 180VA Convenience Outlet	1440			6.26	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
10	8 sets 180VA Convenience Outlet	1440	6.26			3	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
11	15 sets 80VA Fan Outlet	1200		5.21		4	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
12	15 sets 80VA Fan Outlet	1200			5.21	5	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
13	8 sets 180VA Emergency Light Outlet	1440	6.26			6	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
14	SPACE					2	125						
15	SPACE					2	125						
16	SPACE					2	125						
17	SPACE					2	125						
18	SPACE					2	125						
TOTAL		16580	26.57	22.89	22.60								

FEEDER CONDUCTOR
 $IFL = \sqrt{3} (26.57) = 46.02 \text{ A}$
 USE: 3 - 30 mm² & 1 - 8.0 mm² THW Cu. wire in 32mm $\varnothing$ EMT
 FEEDER PROTECTION
 USE: 3 POLE 100AT, 240V, 12SAF, 60HZ, MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT		
						POLE	AT	AT	SIZE	TYPE	DIAMETER	TYPE	TYPE
1	1 set 3HP Inverter ACU Outlet	2898	12.6			2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
2	1 set 3HP Inverter ACU Outlet	2898		12.6		2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
3	1 set 3HP Inverter ACU Outlet	2898			12.6	2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
4	1 set 3HP Inverter ACU Outlet	2898	12.6			2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
5	1 set 3HP Inverter ACU Outlet	2898		12.6		2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
6	1 set 3HP Inverter ACU Outlet	2898			12.6	2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
7	1 set 3HP Inverter ACU Outlet	2898	12.6			2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
8	1 set 3HP Inverter ACU Outlet	2898		12.6		2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
9	1 set 3HP Inverter ACU Outlet	2898			12.6	2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
10	1 set 3HP Inverter ACU Outlet	2898	12.6			2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
11	1 set 3HP Inverter ACU Outlet	2898		12.6		2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
12	1 set 3HP Inverter ACU Outlet	2898			12.6	2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
13	1 set 3HP Inverter ACU Outlet	2898	12.6			2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
14	1 set 3HP Inverter ACU Outlet	2898		12.6		2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
15	1 set 3HP Inverter ACU Outlet	2898			12.6	2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
16	1 set 3HP Inverter ACU Outlet	2898	12.6			2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
17	1 set 3HP Inverter ACU Outlet	2898		12.6		2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
18	1 set 3HP Inverter ACU Outlet	2898			12.6	2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT	
19	SPACE					2	225						
20	SPACE					2	225						
21	SPACE					2	225						
22	SPACE					2	225						
23	SPACE					2	225						
24	SPACE					2	225						
TOTAL		52164	75.6	75.6	75.6								

FEEDER CONDUCTOR
 $IFL = \sqrt{3} (75.6A + 12.6 @ 25\%) = 136.39A$
 USE: 3 - 100 mm² & 1 - 8.0 mm² THW Cu. wire in 32mm $\varnothing$ EMT
 FEEDER PROTECTION
 $IFL = \sqrt{3} (63A + 12.6 @ 250\%) = 163.68A$
 USE: 3 POLE 200AT, 240V, 22SAF, 60HZ, MCCB

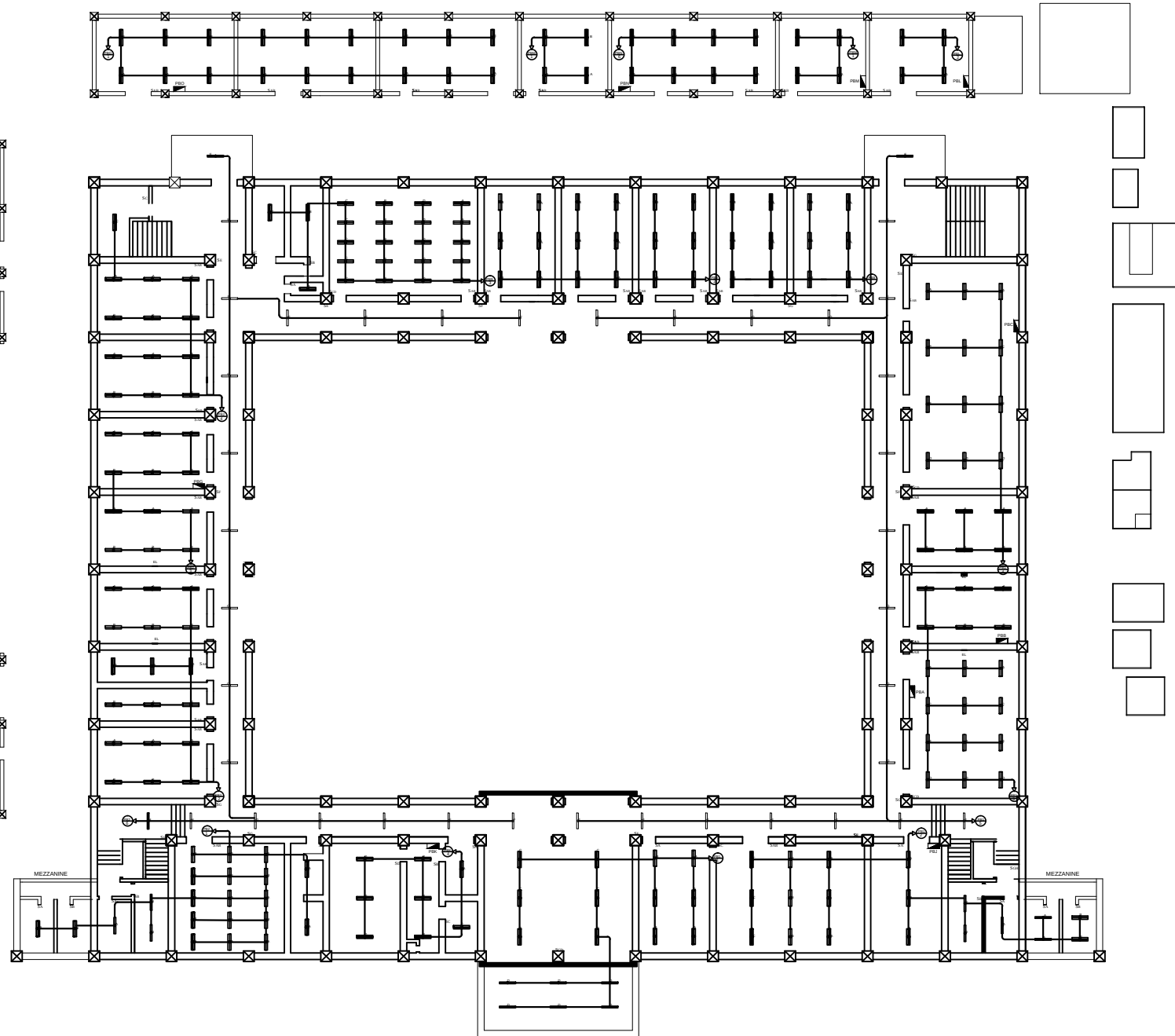
DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT		
						POLE	AT	AT	SIZE	TYPE	DIAMETER	TYPE	TYPE
1	PB1	16580	26.57	22.89	22.60	3	225	100	3-30mm ² & 1-8.0mm ²	THHN	32mm	EMT	
2	PB2	20088	28.95	28.55	33.64	3	225	100	3-30mm ² & 1-8.0mm ²	THHN	32mm	EMT	
3	PB3	52164	75.6	75.6	75.6	3	225	200	3-100mm ² & 1-8.0mm ²	THHN	50mm	EMT	
4	PB4	52164	75.6	75.6	75.6	3	225	200	3-100mm ² & 1-8.0mm ²	THHN	50mm	EMT	
5	PB5	23128	32.24	33.61	34.64	3	225	100	3-30mm ² & 1-8.0mm ²	THHN	32mm	EMT	
6	PB6	49226	63	75.6	75.6	3	225	200	3-100mm ² & 1-8.0mm ²	THHN	50mm	EMT	
7	SPACE					3	225						
TOTAL		214150	301.96	311.85	317.68								

FEEDER CONDUCTOR
 $IFL = \sqrt{3} (317.68A + 12.6 @ 25\%) = 555.69A$
 USE: 3 SETS (3 - 100 mm² & 1 - 38 mm²) THW Cu. wire in 50mm $\varnothing$ EMT
 FEEDER PROTECTION
 $IFL = \sqrt{3} (305.08A + 12.6 @ 250\%) = 582.97A$
 USE: 3 POLE 600AT, 240V, 800AF, 60HZ, MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT		
						POLE	AT	AT	SIZE	TYPE	DIAMETER	TYPE	TYPE
1	20 sets 200W Fluorescent Lamp	1120	4.87			2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
2	18 sets 200W Fluorescent Lamp	1008		4.38		2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
3	20 sets 200W Fluorescent Lamp	1120			4.87	2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
4	10 sets 100W Fluorescent Lamp	280	1.22			2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
5	8 sets 100W LED Flood Light	800		3.48		2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT	
6	4 sets 180VA Convenience Outlet	1080			4.69	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
7	4 sets 180VA Convenience Outlet	1080	4.69			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
8	4 sets 180VA Convenience Outlet	1080		4.69		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
9	8 sets 180VA Convenience Outlet	1440			6.26	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
10	8 sets 180VA Convenience Outlet	1440	6.26			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
11	8 sets 180VA Convenience Outlet	1440		6.26		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
12	8 sets 180VA Convenience Outlet	1440			6.26	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
13	9 sets 180VA Convenience Outlet	1620	7.04			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
14	14 sets 80VA Fan Outlet	1120		4.87		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
15	13 sets 80VA Fan Outlet	1040			4.52	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
16	14 sets 80VA Fan Outlet	1120	4.87			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
17	13 sets 80VA Fan Outlet	1040		4.87		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
18	7 sets 180VA Emergency Light Outlet	1620			7.04	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT	
TOTAL		30888	28.95	28.55	33.64								

FEEDER CONDUCTOR
 $IFL = \sqrt{3} (33.64) = 58.26 \text{ A}$
 USE: 3 - 30 mm² & 1 - 8.0 mm² THW Cu. wire in 32mm $\varnothing$ EMT
 FEEDER PROTECTION
 USE: 3 POLE 100AT, 240V, 12SAF, 60HZ, MCCB

DEMAND LOAD TABULATION													
PES		LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR		CONDUIT	
CIRCUIT NUMBER							POLE	AT	AT	SIZE	TYPE	DIAMETER	TYPE
1		17 sets 200W Fluorescent Lamp	952	4.14			2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
2		18 sets 200W Fluorescent Lamp	1008		4.38		2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
3		12 sets 100W Fluorescent Lamp	336			1.46	2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
4		18 sets 200W Fluorescent Lamp	1008	4.38			2	125	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT
5		12 sets 100W Fluorescent Lamp	336		4.38		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
6		3 sets 100W LED Flood Light	336			1.89	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
7		6 sets 180VA Convenience Outlet	1080	4.69			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
8		6 sets 180VA Convenience Outlet	900		4.69		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
9		6 sets 180VA Convenience Outlet	1080			3.91	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
10		6 sets 180VA Convenience Outlet	900	3.91			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
11		6 sets 180VA Convenience Outlet	1080		4.69		2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
12		6 sets 180VA Convenience Outlet	1260			5.48	2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
13		6 sets 180VA Convenience Outlet	1080	4.69			2	125	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
14		8 sets 180VA Convenience Outlet	1440		6.26		2	125	21	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
15		8 sets 180VA Convenience Outlet	1440			6.26	2	125	22	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
16		8 sets 180VA Convenience Outlet	1440	6.26			2	125	23	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
17		6 sets 180VA Convenience Outlet	1080		4.69		2	125	24	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
18		6 sets 180VA Convenience Outlet	1080			4.69	2	125	25	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
19		12 sets 80VA Fan Outlet	960	4.17			2	125	26	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
20		13 sets 80VA Fan Outlet	1040		4.52		2	125	27	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
21		14 sets 180VA Emergency Light Outlet	2520			10.93	2	125	28	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
22		SPACE					2						
23		SPACE					2						
24		SPACE					2						
TOTAL			23128	32.24	33.61	34.64							



NOTE: USE EXISTING
FUNCTIONAL LUMINAIRES TO
CONFORM THE NEW APPROVED
ELECTRICAL PLAN



FROM THE OFFICE:
PHYSICAL PLANT AND GENERAL SERVICES DIVISION
2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY
City of Batac, 2008 Ilocos Norte
Telefax: +63 (77) 792-3191

PREPARED BY:
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ENGINEER III
CHECKED BY:
RIGOR G. GABUR
ELECTRICAL ENGINEER, PROSD

PROFESSIONAL ELECTRICAL ENGINEER:
PROJECT TITLE:
**REHABILITATION OF THE ELECTRICAL
SYSTEM OF COLLEGES (COE)**
LOCATION:
MMSU CITY OF BATAC, ILOCOS NORTE

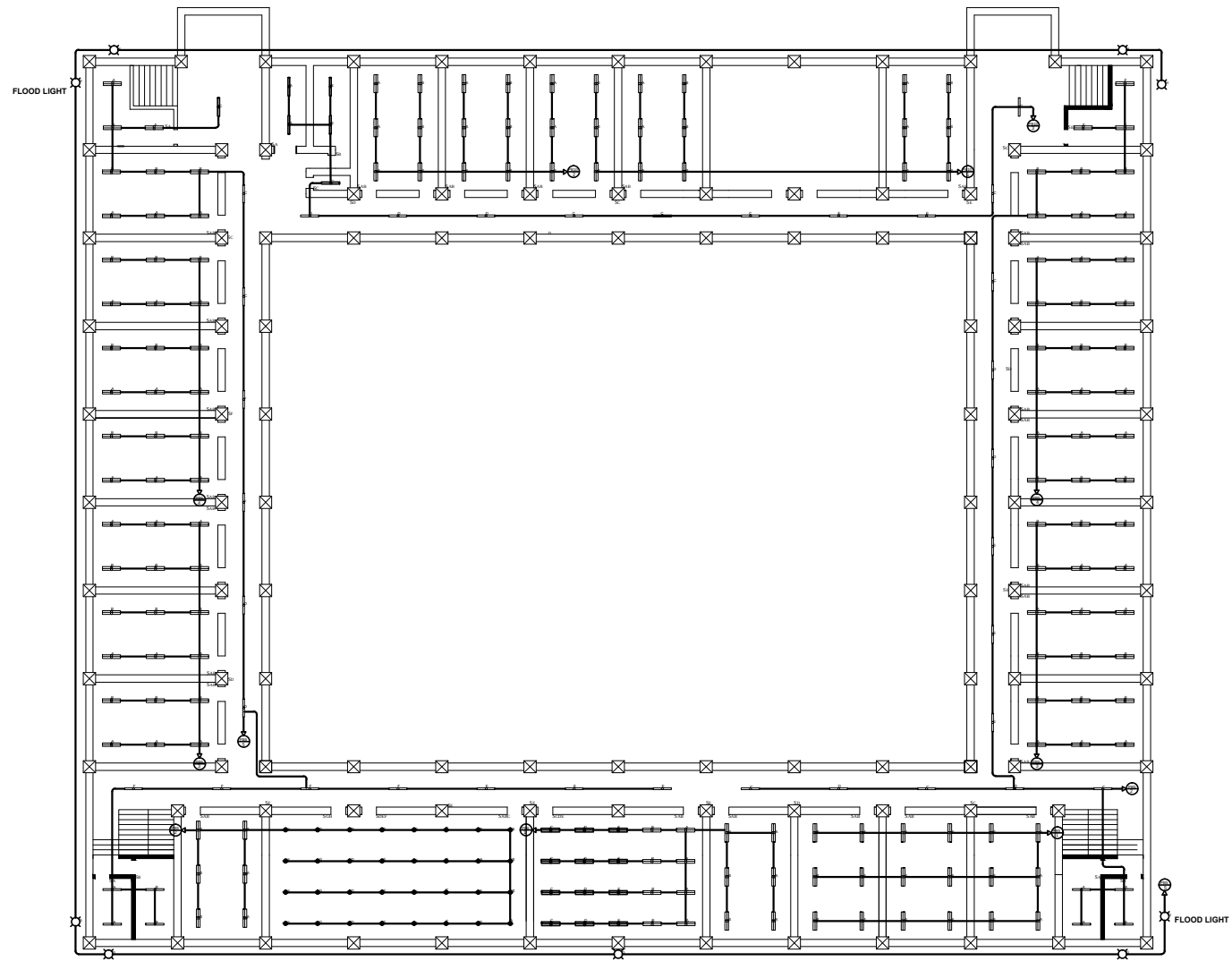
CHECKED/REVIEWED BY:
AIDA V. CABANG
CHIEF ENGINEER, STRUCTURE
RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR, PROSD

CONFORME:
NATHANIEL R. ALIBUYOG
DEAN, COE

APPROVED BY:
SHIRLEY C. AGRUPIS
UNIVERSITY PRESIDENT

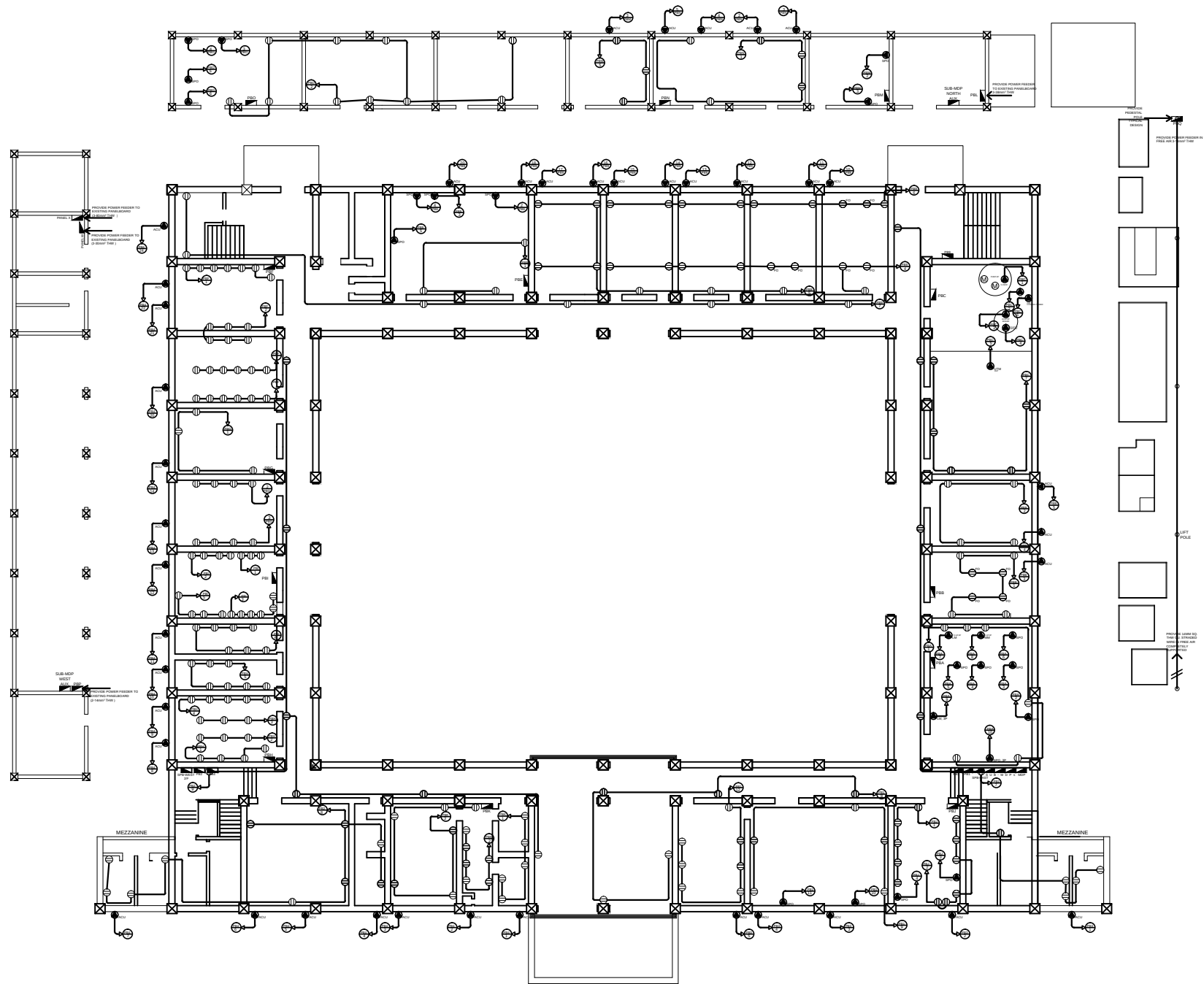
SHEET CONTENTS:
**GROUND FLOOR LIGHTING
LAYOUT PLAN (NTS)**

SHEET NO:
E-1
ELECTRICAL PLANS



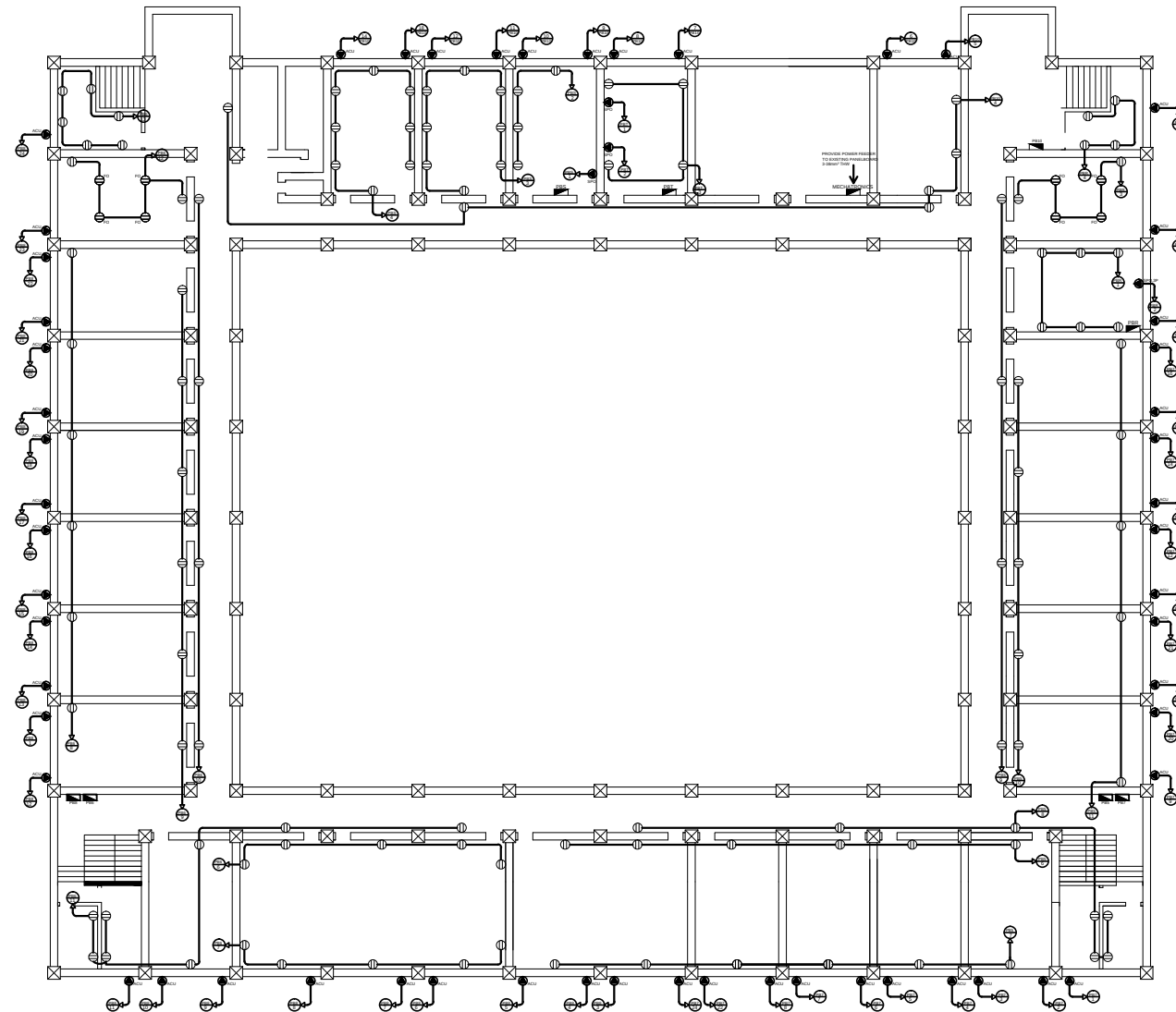
NOTE: USE EXISTING
FUNCTIONAL LUMINAIRES TO
CONFORM THE NEW APPROVED
ELECTRICAL PLAN

	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER I		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (COE)	AIDA V. CABANG CHIEF ENGINEER - STRUCTURE	NATHANIEL R. ALIBUYOG DEAN, COE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SECOND FLOOR LIGHTING LAYOUT PLAN (NTS)	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRC-20	DATE:		ROMEO R. DULDULAO DIRECTOR, PRC-20				
		LOCATION:	MMSU CITY OF BATAC, ILOCOS NORTE						



NOTE: ALL POWER OUTLETS
SHALL BE BRAND NEW

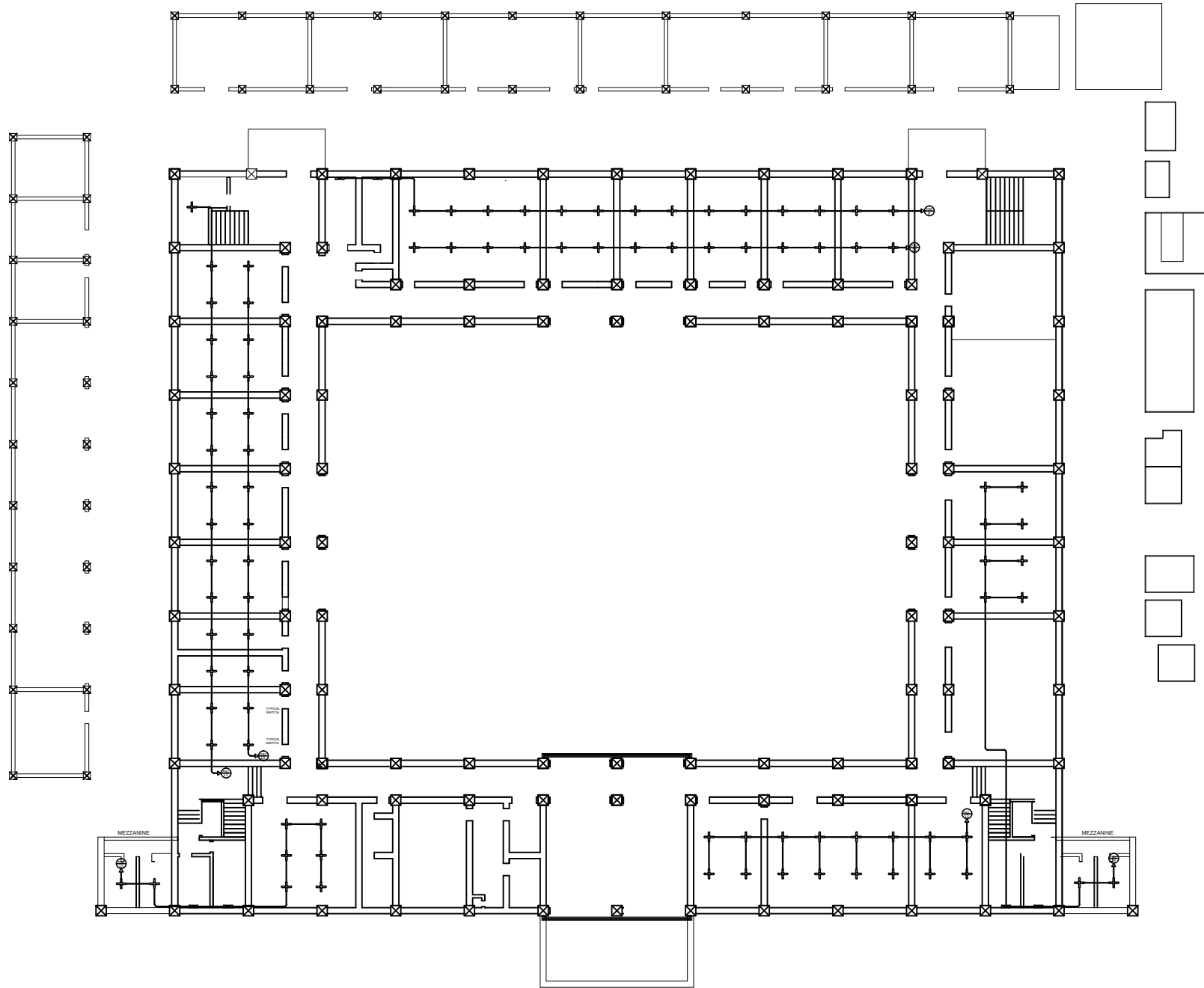
	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang, Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: CARLO HUMPER P. GUMTANG ENGINEER I	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (COE)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF ELECTRICAL ENGINEER	CONFORME:	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: GROUND FLOOR POWER LAYOUT PLAN (NTS)	SHEET NO: E-1
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PHD	DATE: JAN 10, 2018	LOCATION: MMSU CITY OF BATANG, ILOCOS NORTE	RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PPSSD	NATHANIEL R. ALBUYOG DEAN, COE			



NOTE: ALL POWER OUTLETS
SHALL BE BRAND NEW



FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER I		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (COE)	AIDA V. CABANG CHIEF ELECTRICAL INSPECTOR	NATHANIEL R. ALIBUYOG DEAN, COE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SECOND FLOOR POWER LAYOUT PLAN (NTS)	E-1 ELECTRICAL PLANS
	CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
	RIGOR G. GABUR ELECTRICAL ENGINEER, PROSD	PLACE ISSUED:		ROMEO R. DULDULAO DIRECTOR, PROSD				
		DATE:						
		TIN:	LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE					



NOTE: USE EXISTING
FUNCTIONAL ORBIT FAN TO
CONFORM THE NEW APPROVED
ELECTRICAL PLAN



FROM THE OFFICE:
PHYSICAL PLANT AND GENERAL SERVICES DIVISION
2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY
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PROFESSIONAL ELECTRICAL ENGINEER:
PROJECT TITLE:
**REHABILITATION OF THE ELECTRICAL
SYSTEM OF COLLEGES (COE)**
LOCATION:
MMSU CITY OF BATAC, ILOCOS NORTE

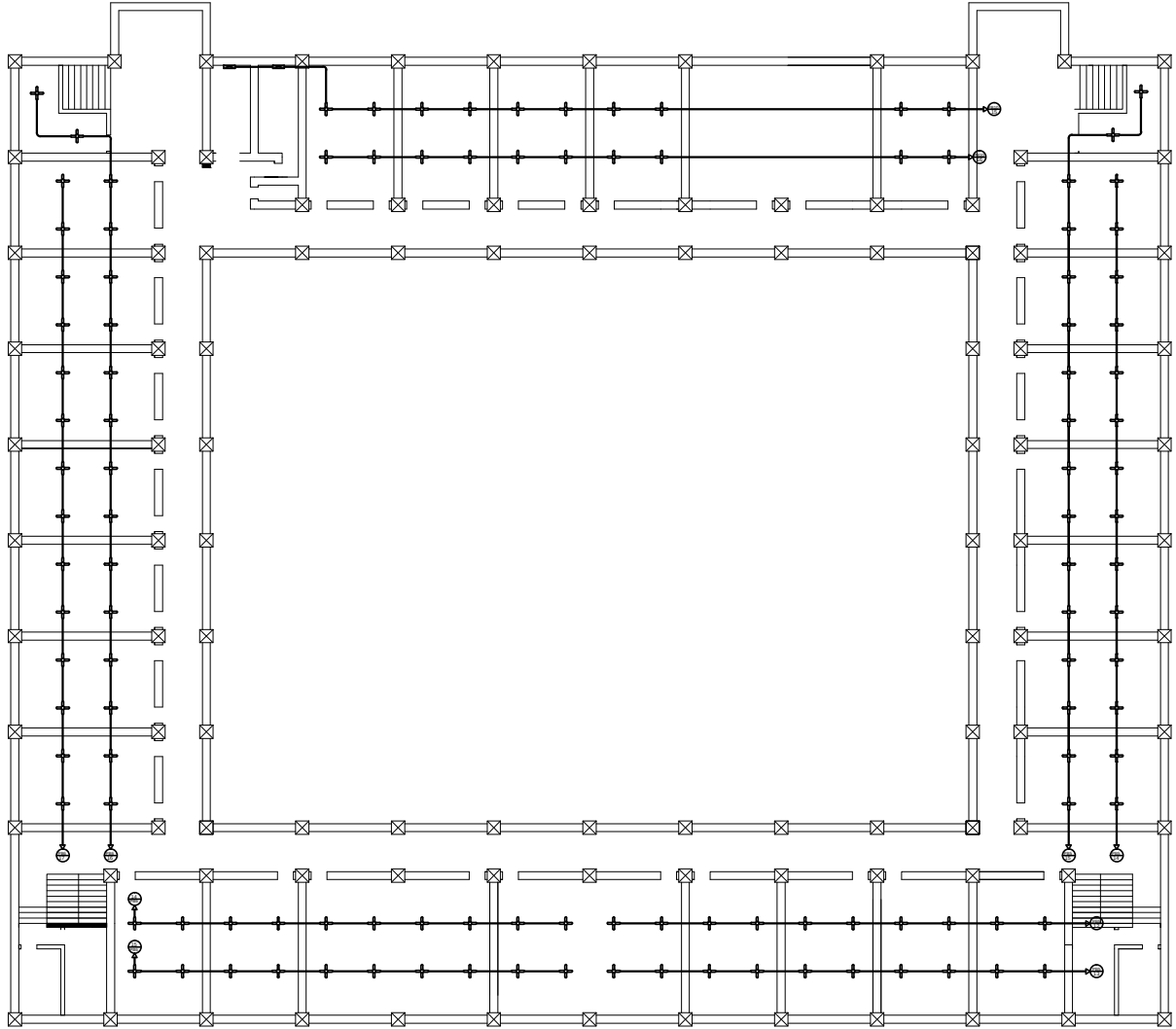
CHECKED/REVIEWED BY:
AIDA V. CABANG
CHIEF ENGINEER, STRUCTURE
RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR, PROPOSED

CONFORME:
NATHANIEL R. ALIBUYOG
DEAN, COE

APPROVED BY:
SHIRLEY C. AGRUPIS
UNIVERSITY PRESIDENT

SHEET CONTENTS:
**GROUND FLOOR FAN LAYOUT
PLAN (NTS)**

SHEET NO:
E-1
ELECTRICAL PLANS



NOTE: USE EXISTING
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ELECTRICAL PLAN



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2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY
City of Batac, 2008 Ilocos Norte
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ELECTRICAL ENGINEER, PROSS

PROFESSIONAL ELECTRICAL ENGINEER:
PROJECT TITLE:
**REHABILITATION OF THE ELECTRICAL
SYSTEM OF COLLEGES (COE)**
LOCATION:
MMSU CITY OF BATAC, ILOCOS NORTE

CHECKED/REVIEWED BY:
AIDA V. CABANG
CHIEF ELECTRICAL STRUCTURE
RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR, PROSS

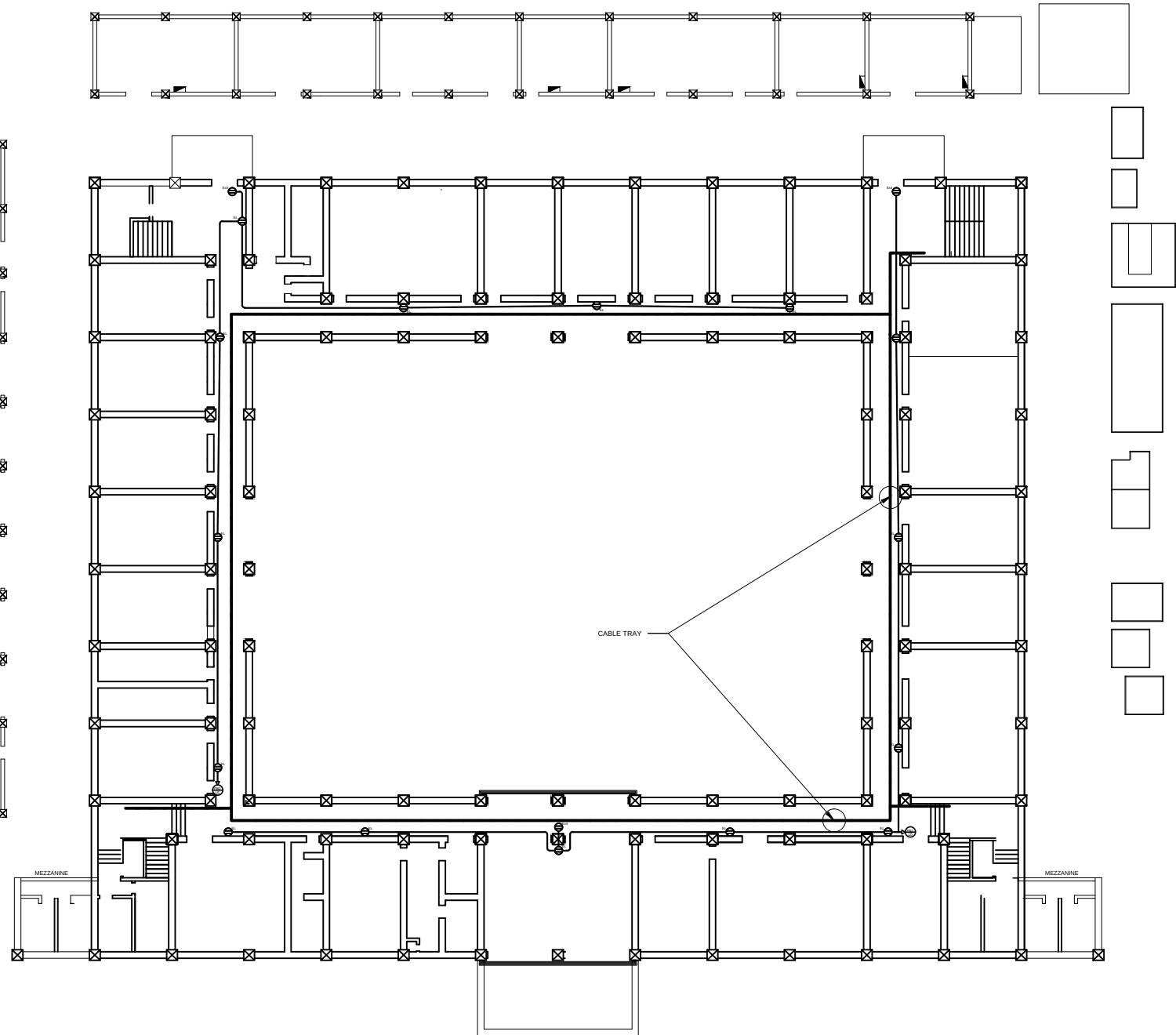
CONFORME:
NATHANIEL R. ALIBUYOG
DEAN, COE

APPROVED BY:
SHIRLEY C. AGRUPIS
UNIVERSITY PRESIDENT

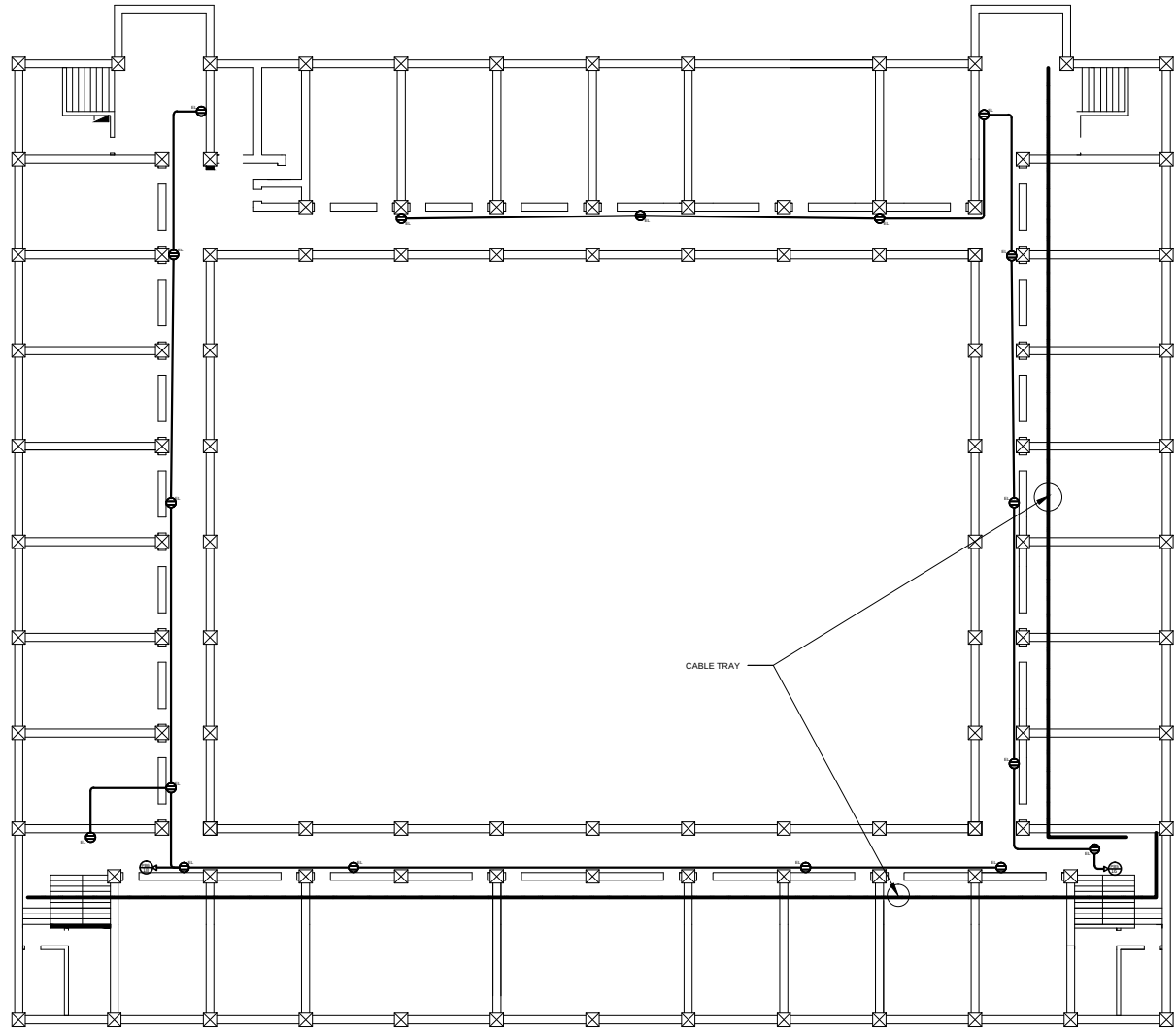
SHEET CONTENTS:
**SECOND FLOOR FAN LAYOUT
PLAN (NTS)**

SHEET NO:
E-1

ELECTRICAL PLANS



	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER-1		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (COE)	AIDA V. CABANG CHIEF ENGINEER-STRUCTURE	NATHANIEL R. ALIBUYOG DEAN, COE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	GROUND FLOOR EL LAYOUT PLAN (NTS) GROUND FLOOR CABLE TRAY LAYOUT PLAN (NTS)	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PROSD	DATE:		ROMEO R. DULDULAO DIRECTOR, PROSD				
		LOCATION:	MMSU CITY OF BATAC, ILOCOS NORTE						ELECTRICAL PLANS



FROM THE OFFICE:
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City of Batac, 2008 Ilocos Norte
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CHECKED BY:
RIGOR G. GABUR
ELECTRICAL ENGINEER, PHD

PROFESSIONAL ELECTRICAL ENGINEER:
PROJECT TITLE:
**REHABILITATION OF THE ELECTRICAL
SYSTEM OF COLLEGES (COE)**
LOCATION:
MMSU CITY OF BATAC, ILOCOS NORTE

CHECKED/REVIEWED BY:
AIDA V. CABANG
CHIEF ENGINEER-STRUCTURE
RECOMMENDING APPROVAL:
ROMEO R. DULDULAO
DIRECTOR, PHD

CONFORME:
NATHANIEL R. ALIBUYOG
DEAN, COE

APPROVED BY:
SHIRLEY C. AGRUPIS
UNIVERSITY PRESIDENT

SHEET CONTENTS:
**SECOND FLOOR EL LAYOUT
PLAN (NTS)
SECOND FLOOR CABLE TRAY
LAYOUT PLAN (NTS)**

SHEET NO:
E-1

ELECTRICAL PLANS

DEMAND LOAD TABULATION														
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR			CONDUIT		
						POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE	DIAMETER	TYPE
1	100 WATT POWER SUPPLY	672	3.03			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
2	100 WATT POWER SUPPLY	794	4.02			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
3	100 WATT POWER SUPPLY	1400				2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
4	100 WATT POWER SUPPLY	1400				2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
5	100 WATT POWER SUPPLY	4214	1.9			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
6	100 WATT POWER SUPPLY	960	3.43			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
7	100 WATT POWER SUPPLY	1800	7.82			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
8	100 WATT POWER SUPPLY	920	3.93			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
9	100 WATT POWER SUPPLY	920	3.93			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
10	100 WATT POWER SUPPLY	2500	10.87			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
11	100 WATT POWER SUPPLY	2500	10.87			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
12	100 WATT POWER SUPPLY	1200	5.48			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
13	100 WATT POWER SUPPLY	1200	5.48			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
14	100 WATT POWER SUPPLY	900	3.93			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
15	100 WATT POWER SUPPLY	900	3.93			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
16	SPACE					2	60							
17	SPACE					2	60							
18	SPACE					2	60							
TOTAL		16768	29.7	25.4	17.68									

FEEDER CONDUCTOR
 IFL = 13 (22.23A + 31.4A)
 USE: 3-14 mm² & 1-5.5 mm² THW Cu. wire in 25mm² EMT
 FEEDER PROTECTION
 USE: 3 POLE 250AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION														
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR			CONDUIT		
						POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE	DIAMETER	TYPE
1	100 WATT POWER SUPPLY	584	4.99			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
2	100 WATT POWER SUPPLY	584	4.99			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
3	100 WATT POWER SUPPLY	672	3.03			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
4	100 WATT POWER SUPPLY	794	4.02			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
5	100 WATT POWER SUPPLY	1400				2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
6	100 WATT POWER SUPPLY	1400				2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
7	100 WATT POWER SUPPLY	4214	1.9			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
8	100 WATT POWER SUPPLY	960	3.43			2	60	15	2-3.5mm ² & 1-2.0mm ²	THHN	15mm	EMT		
9	100 WATT POWER SUPPLY	1800	7.82			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
10	100 WATT POWER SUPPLY	920	3.93			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
11	100 WATT POWER SUPPLY	920	3.93			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
12	100 WATT POWER SUPPLY	2500	10.87			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
13	100 WATT POWER SUPPLY	2500	10.87			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
14	100 WATT POWER SUPPLY	1200	5.48			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
15	100 WATT POWER SUPPLY	1200	5.48			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT		
16	SPACE					2	60							
17	SPACE					2	60							
18	SPACE					2	60							
TOTAL		11188	13.03	17.44	18.22									

FEEDER CONDUCTOR
 IFL = 13 (18.23A + 31.4A)
 USE: 3-14 mm² & 1-5.5 mm² THW Cu. wire in 25mm² EMT
 FEEDER PROTECTION
 USE: 3 POLE 250AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION														
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR			CONDUIT		
						POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE	DIAMETER	TYPE
1	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
2	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
3	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
4	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
5	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
6	SPACE					2	125							
7	SPACE					2	125							
8	SPACE					2	125							
9	SPACE					2	125							
10	SPACE					2	125							
11	SPACE					2	125							
12	SPACE					2	125							
TOTAL		14000	25.26	25.26	12.6									

FEEDER CONDUCTOR
 IFL = 13 (25.26A + 12.6A @ 25%) = 45.10A
 USE: 3-38 mm² & 1-8.0 mm² THW Cu. wire in 32mm² EMT

MAIN OVER CURRENT PROTECTION
 IFL = 13 (12.6A + 12.6A @ 250%) = 76.38 A
 USE: 3 POLE 250AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION														
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	AB	CA	BC	CIRCUIT BREAKER			CONDUCTOR			CONDUIT		
						POLE	AF	AT	SIZE	TYPE	DIAMETER	TYPE	DIAMETER	TYPE
1	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
2	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
3	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
4	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
5	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
6	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
7	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
8	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
9	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
10	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
11	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
12	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
13	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
14	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
15	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
16	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
17	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
18	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
19	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
20	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
21	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
22	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
23	SPACE					2	125							
24	100 WATT POWER SUPPLY	2000	12.6			2	125	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT		
TOTAL		66564	100.80	97.48	100.80									

FEEDER CONDUCTOR
 IFL = 13 (100.80A + 12.6A @ 25%) = 180.04 A
 USE: 2-80 mm² & 1-22 mm² THW Cu. wire in 50mm² EMT

MAIN OVER CURRENT PROTECTION
 IFL = 13 (88.20A + 12.6A @ 250%) = 207.32 A
 USE: 3 POLE 250AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION														
PSS-LPWS EST 23'						CONDUCTOR				CONDUIT				
MANAGER	LOAD DESCRIPTION	V.A. LOAD	AB	CA	BC	CIRCUIT	WIRE	SIZE	TYPE	CONDUIT	TYPE			
1	28 MW D2000 Fluorescent Light	10000	4.38			2	60	15		2- 3.5mm ² & 1- 2.0mm ²	15mm EMT			
2	5 sets D2000 Fluorescent Light	504				2	60	15		2- 3.5mm ² & 1- 2.0mm ²	15mm EMT			
3	28 MW D2000 Fluorescent Light	10000	4.38			2	60	15		2- 3.5mm ² & 1- 2.0mm ²	15mm EMT			
4	28 MW D2000 Fluorescent Light	10000	4.38			2	60	15		2- 3.5mm ² & 1- 2.0mm ²	15mm EMT			
5	8 sets 200W LED Flood Light	800	3.48			2	60	15		2- 3.5mm ² & 1- 2.0mm ²	15mm EMT			
6	8 sets LEDVANCE Consequence Light	800	3.48			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
7	7 sets LEDVANCE Consequence Light	1260	5.48			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
8	9 sets LEDVANCE Consequence Light	900	3.91			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
9	9 sets LEDVANCE Consequence Light	900	3.91			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
10	9 sets LEDVANCE Consequence Light	900	3.91			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
11	10 sets LEDVANCE Fluor. Outlet	900	3.91			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
12	10 sets LEDVANCE Fluor. Outlet	900	3.48			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
13	10 sets LEDVANCE Fluor. Outlet	900	3.48			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
14	14 sets LEDVANCE Fluor. Outlet	1120	4.87			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
15	18 sets LEDVANCE Fluor. Outlet	1260	5.96			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
16	7 sets LEDVANCE Emergency Light	630	2.74			2	60	20		2- 3.5mm ² & 1- 3.5mm ²	15mm EMT			
17	SPACE					2	60							
18	SPACE					2	60							
19	SPACE					2	60							
20	SPACE					2	60							
21	SPACE					2	60							
22	SPACE					2	60							
23	SPACE					2	60							
24	SPACE					2	60							
TOTAL		15338	71.83	22.83	22.02									

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER	CONDUCTOR	CONDUIT				
							POLE	SIZE	TYPE	DIAMETER	TYPE		
							AT						
1	15 mW 200W Fluorescent Lamp	672	3.05				2	225	15	2-3.5mm ² & 1-2.5mm ²	THHN	15mm	EMT
2	15 mW 200W Fluorescent Lamp	672	3.05				2	225	15	2-3.5mm ² & 1-2.5mm ²	THHN	15mm	EMT
3	25 mW 300W Fluorescent Lamp	1280	5.6				2	225	15	2-3.5mm ² & 1-2.5mm ²	THHN	15mm	EMT
4	9 mW 100VA Convenience Outlet	1280	7.6				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
5	7 mW 100VA Convenience Outlet	1280	5.45				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
6	9 mW 100VA Convenience Outlet	1280	7.6				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
7	9 mW 100VA Convenience Outlet	1280	4.89				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
8	SPACE						2	225					
9	16 mW 180VA Fan Outlet	1280		5.58			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
10	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
11	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
12	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
13	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
14	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
15	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
16	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
17	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
18	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
19	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
20	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
21	16 mW 180VA Fan Outlet	1280		4.87			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
22	SPACE						2	225					
23	SPACE						2	225					
24	SPACE						2	225					
TOTAL		45714	65.05	59.17	60.87								

FEEDER CONDUCTOR
 FL = $\sqrt{3} (65.05A \times 12.8A @ 25\%) = 118.12 A$
 USE: 3 - 60 mm² & 1-22 mm² THW Cu. wire in 50mm² EMT

MAIN OVER CURRENT PROTECTION
 FL = $\sqrt{3} (12.8A \times 12.8A @ 250\%) = 145.40 A$
 USE: 3 POLE 150AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER	CONDUCTOR	CONDUIT				
							POLE	SIZE	TYPE	DIAMETER	TYPE		
							AT						
1	15 mW 200W Fluorescent Lamp	640	3.05				2	225	15	2-3.5mm ² & 1-2.5mm ²	THHN	15mm	EMT
2	15 mW 200W Fluorescent Lamp	640	3.05				2	225	15	2-3.5mm ² & 1-2.5mm ²	THHN	15mm	EMT
3	15 mW 200W Fluorescent Lamp	640	1.83				2	225	15	2-3.5mm ² & 1-2.5mm ²	THHN	15mm	EMT
4	9 mW 100VA Convenience Outlet	1280	4.89				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
5	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
6	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
7	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
8	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
9	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
10	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
11	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
12	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
13	SPACE						2	225					
14	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
15	12 mW 150VA Fan Outlet	960		4.17			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
16	10 mW 150VA Fan Outlet	800	3.48				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
17	SPACE						2	225					
18	1 mW 30W Inverter Type ACU	2880	12.8				2	225	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
19	SPACE						2	225					
20	SPACE						2	225					
21	SPACE						2	225					
22	SPACE						2	225					
23	SPACE						2	225					
24	SPACE						2	225					
TOTAL		33930	57.02	54.05	55.45								

FEEDER CONDUCTOR
 FL = $\sqrt{3} (56.4A \times 12.8A @ 25\%) = 118.12 A$
 USE: 3 - 60 mm² & 1-22 mm² THW Cu. wire in 50mm² EMT

MAIN OVER CURRENT PROTECTION
 FL = $\sqrt{3} (12.8A \times 12.8A @ 250\%) = 136.42 A$
 USE: 3 POLE 150AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER	CONDUCTOR	CONDUIT				
							POLE	SIZE	TYPE	DIAMETER	TYPE		
							AT						
1	9 mW 100VA Convenience Outlet	1280	4.89				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
2	1 mW 1500VA SPO	1500		6.52			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
3	1 mW 1500VA SPO	1500		6.52			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
4	1 mW 1500VA SPO	1500		6.52			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
5	1 mW 1500VA SPO	1500		6.52			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
6	1 mW 1500VA SPO	1500		6.52			2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
7	1 mW 30W Inverter Type ACU	2700.48	22				2	225	60	2-14.0mm ² & 1-5.5mm ²	THHN	25mm	EMT
8	1 mW 30W Inverter Type ACU	2700.48	6.6				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
9	1 mW 30W Inverter Type ACU	2700.48	5.6				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
10	1 mW 30W Inverter Type ACU	2700.48	6.6				2	225	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
11	SPACE						2	225					
12	SPACE						2	225					
13	SPACE						2	225					
TOTAL		20861.4	40.2	11.21	13.04	13.04							

FEEDER CONDUCTOR
 FL = $45.2A + 22.6A @ 25\% + \sqrt{3} (13.04A) = 73.28 A$
 USE: 3 - 35mm² & 1 - 14 mm² THW Cu. wire in 40mm² EMT
 FEEDER PROTECTION
 FL = $23.2A + 22.6A @ 250\% + \sqrt{3} (13.04A) = 100.78 A$
 USE: 3 POLE 150AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER	CONDUCTOR	CONDUIT				
							POLE	SIZE	TYPE	DIAMETER	TYPE		
							AT						
1	9 mW 100VA Convenience Outlet	1440	6.28				2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
2	9 mW 100VA Convenience Outlet	720		3.13			2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
3	1 mW 30W Inverter Type ACU	2880		12.8			2	60	40	2-8.0mm ² & 1-5.5mm ²	THHN	20mm	EMT
4	SPACE						2	60					
5	SPACE						2	60					
6	SPACE						2	60					
TOTAL		6558	6.28	9.05	12.4								

FEEDER CONDUCTOR
 FL = $\sqrt{3} (12.8A @ 250\%) = 31.5 A$
 USE: 3 - 14 mm² & 1-8.0 mm² THW Cu. wire in 25mm² EMT
 FEEDER PROTECTION
 USE: 3 POLE 60AT, 240V, 60HZ, MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER	CONDUCTOR	CONDUIT				
							POLE	SIZE	TYPE	DIAMETER	TYPE		
							AT						
1	7 mW 100VA Convenience Outlet	1280	5.47				2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
2	9 mW 100VA Convenience Outlet	1280	4.89				2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
3	9 mW 100VA Convenience Outlet	1280	4.89				2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
4	9 mW 100VA Convenience Outlet	1280	4.89				2	60	20	2-3.5mm ² & 1-3.5mm ²	THHN	15mm	EMT
5	SPACE	1300		6.52			2	60	20				
6	SPACE	1300		6.52			2	60	20				
TOTAL		7920	30.18	11.21	11.21								

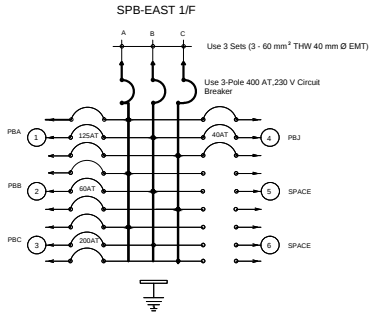
FEEDER CONDUCTOR
 FL = $\sqrt{3} (11.21A) = 19.41 A$
 USE: 3 - 8.0 mm² & 1-5.5 mm² THW Cu. wire in 25mm² EMT
 FEEDER PROTECTION
 USE: 3 POLE

DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PBA	28586.43	45.2	11.21	13.04	13.04	3	800	125
2	PBB	6550		6.26	9.05	12.6	3	800	60
3	PBC	45106.23	104.4	10.86	10.86	10.86	3	800	200
4	PBJ	7895		10.43	11.11	13.04	3	800	40
5	SPACE								
6	SPACE								
TOTAL		80230.66	149.63	38.76	44.76	49.94			

FEEDER CONDUCTOR
 $I_F = 148.60A + 22A @ 25\% + \sqrt{3} (49.54A) = 240.90 A$
 USE: 3 Sets (3 - 60 mm² & 1 - 30 mm² THW Cu. wire in 40mmØ EMT)
 FEEDER PROTECTION
 $I_F = 127.60A + 22A @ 250\% + \sqrt{3} (49.54A) = 268.41 A$
 USE: 3 POLE 400AT 240V, 60HZ, MCCB

DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PB1-LPPB NORTH 1/F	42714	69.06	58.77	50.87	3	500	125	
2	PB2-LPPB NORTH 2/F	33920	57.02	54.05	56.40	3	500	150	
3	PBE	8040	9.86	13.04	13.04	3	500	40	
4	MECHATRONICS	26750	125	5.92	6.52	9.39	3	500	125
5	PBT	7890		5.92	6.52	9.39	3	500	40
6	PBS	5100		5.92	9.39	2.38	3	500	40
TOTAL		130494	125	125.87	142.71	145.86			

FEEDER CONDUCTOR
 $I_F = 125A + \sqrt{3} (142.77A) + 12.6A @ 25\% = 377.74 A$
 USE: 3 Sets (3 - 60 mm² & 1 - 30 mm² THW Cu. wire in 50mmØ EMT)
 FEEDER PROTECTION
 $I_F = 125A + \sqrt{3} (130.17A) + 12.6A @ 250\% = 405.02 A$
 USE: 3 POLE 400AT 240V, 60HZ, MCCB

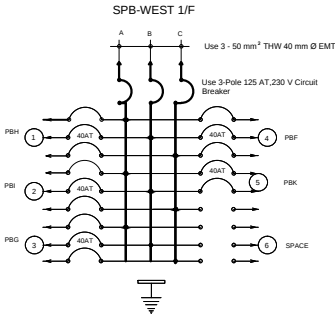


DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PBH	5480		7.54	7.51	9.86	3	125	40
2	PBI	5640		7.55	6.26	11.21	3	125	40
3	PBG	6240		9.85	9.05	9.85	3	125	40
4	PBF	7990		10.43	11.11	11.21	3	125	40
5	PBR	3990		10.23			2	125	40
6	SPACE								
TOTAL		29340		49.11	34.93	49.93			

FEEDER CONDUCTOR
 $I_F = 148.60A + 22A @ 25\% + \sqrt{3} (49.54A) = 240.90 A$
 USE: 3 - 38 mm² & 1 - 14 mm² THW Cu. wire in 40mmØ EMT
 FEEDER PROTECTION
 $I_F = 127.60A + 22A @ 250\% + \sqrt{3} (49.54A) = 268.41 A$
 USE: 3 POLE 125AT 240V, 60HZ, MCCB

DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PBL	26750		12.36	12.36	12.36	3	800	125
2	PBM	4587		4.59	9.86	5.24	3	400	40
3	PBN	7995		11.31	14.9	8.89	3	400	60
4	PBO	33142	55.32	17.72	14.72	18	3	400	125
5	PBQ	10000	25.3				3	400	40
6	SPACE								
TOTAL		84475	80.32	105.74	133.54	103.33			

FEEDER CONDUCTOR
 $I_F = 85.92A + \sqrt{3} (110.54A) + 7.4A @ 25\% = 275.18 A$
 USE: 3 Sets (3 - 60 mm² & 1 - 30 mm² THW Cu. wire in 50mmØ EMT)
 FEEDER PROTECTION
 $I_F = 85.92A + \sqrt{3} (103.14A) + 7.4A @ 250\% = 291.21 A$
 USE: 3 POLE 350AT 240V, 60HZ, MCCB

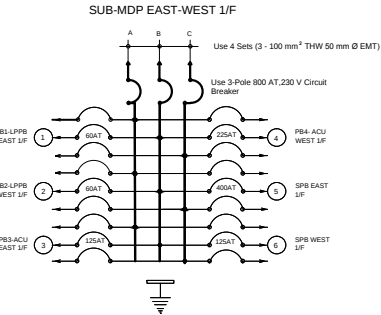


DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PB1-LPPB EAST 1/F	16760		29.7	25.4	17.66	3	800	60
2	PB2-LPPB WEST 1/F	24710		37.28	33.11	30.96	3	800	60
3	PB3-ACU EAST 1/F	14490		25.2	25.2	12.6	3	800	125
4	PB4-ACU WEST 1/F	66654	109.8	67.48	109.8	3	800	225	
5	SPB-EAST 1/F	86230.66	149.63	38.76	44.76	49.94	3	800	400
6	SPB-WEST 1/F	29340		49.11	34.93	49.93	3	800	125
TOTAL		229738.66	149.63	290.85	259.83				

FEEDER CONDUCTOR
 $I_F = 148.60A + 22A @ 25\% + \sqrt{3} (280.85A) = 640.94 A$
 USE: 4 Sets (3 - 100 mm² & 1 - 50 mm² THW Cu. wire in 50mmØ EMT)
 FEEDER PROTECTION
 $I_F = 127.60A + 22A @ 250\% + \sqrt{3} (280.85A) = 669.04 A$
 USE: 3 POLE 800AT 240V, 60HZ, MCCB

DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PANEL W	13890		60			3	400	40
2	PBP	13890		60			3	400	60
3	SPACE	13890		60			3	400	60
4	PANEL X	40250	175				3	400	175
5	SPACE						3	400	
TOTAL		61860	175	60	60	60			

FEEDER CONDUCTOR
 $I_F = 175A + 175A = 350A$
 USE: 3 Sets (3 - 60 mm² & 1 - 30 mm² THW Cu. wire in 50mmØ EMT)
 FEEDER PROTECTION
 $I_F = 175A + 175A @ 250\% + \sqrt{3} (175A) = 350A$
 USE: 3 POLE 350AT 240V, 60HZ, MCCB

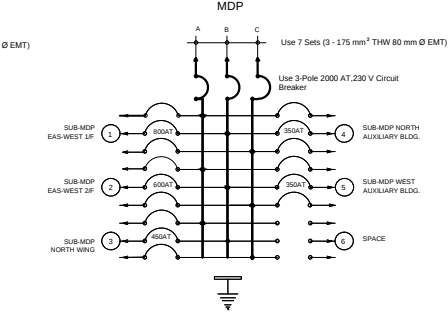
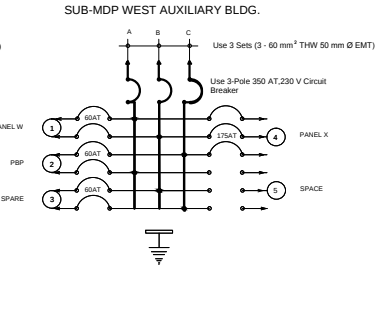
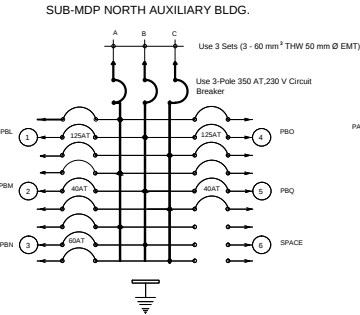
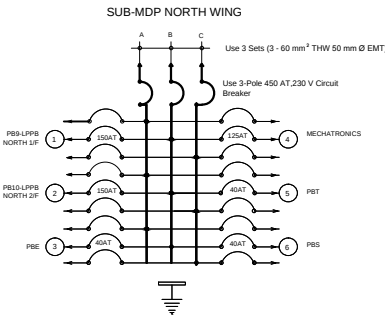
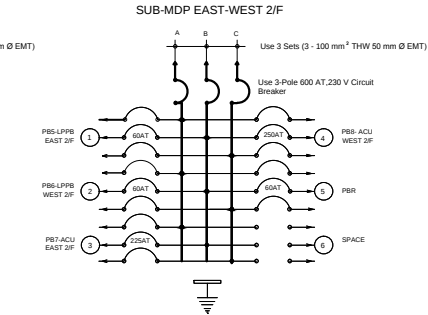


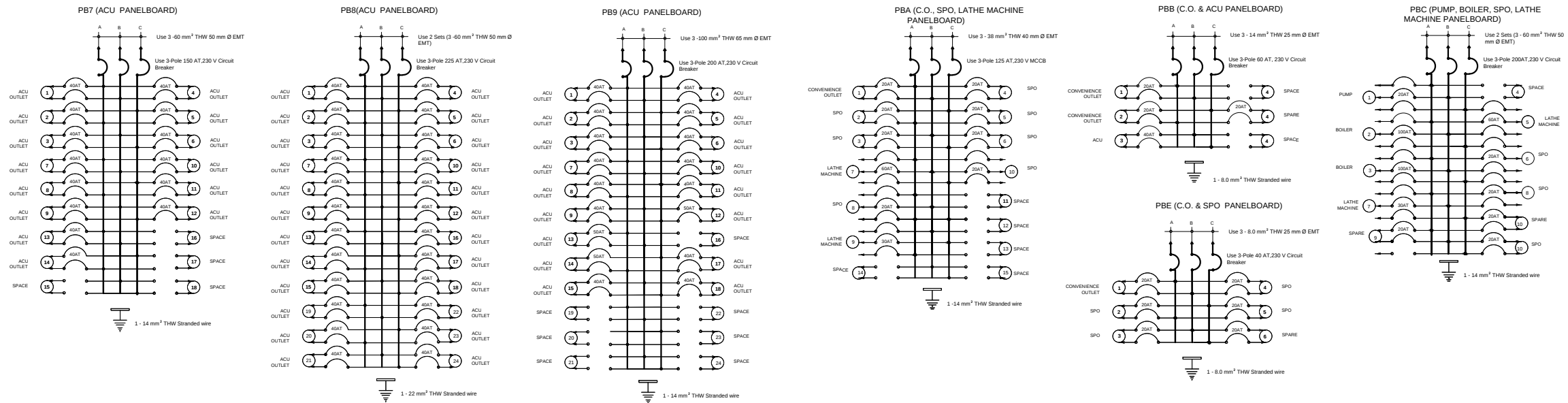
DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	PB5-LPPB EAST 2/F	13266		21.63	22.93	22.02	3	800	60
2	PB6-LPPB WEST 2/F	13266		21.64	21.23	25.48	3	800	60
3	PB7-ACU EAST 2/F	48854	109.8	67.48	109.8	3	800	225	
4	PB8-ACU WEST 2/F	77398	129.2	105.1	105.1	3	800	225	
5	PBS	7890	13.06	4.98	4.98	3.13	3	800	60
6	SPACE								
TOTAL		138879	13.06	106.86	147.53	156.61			

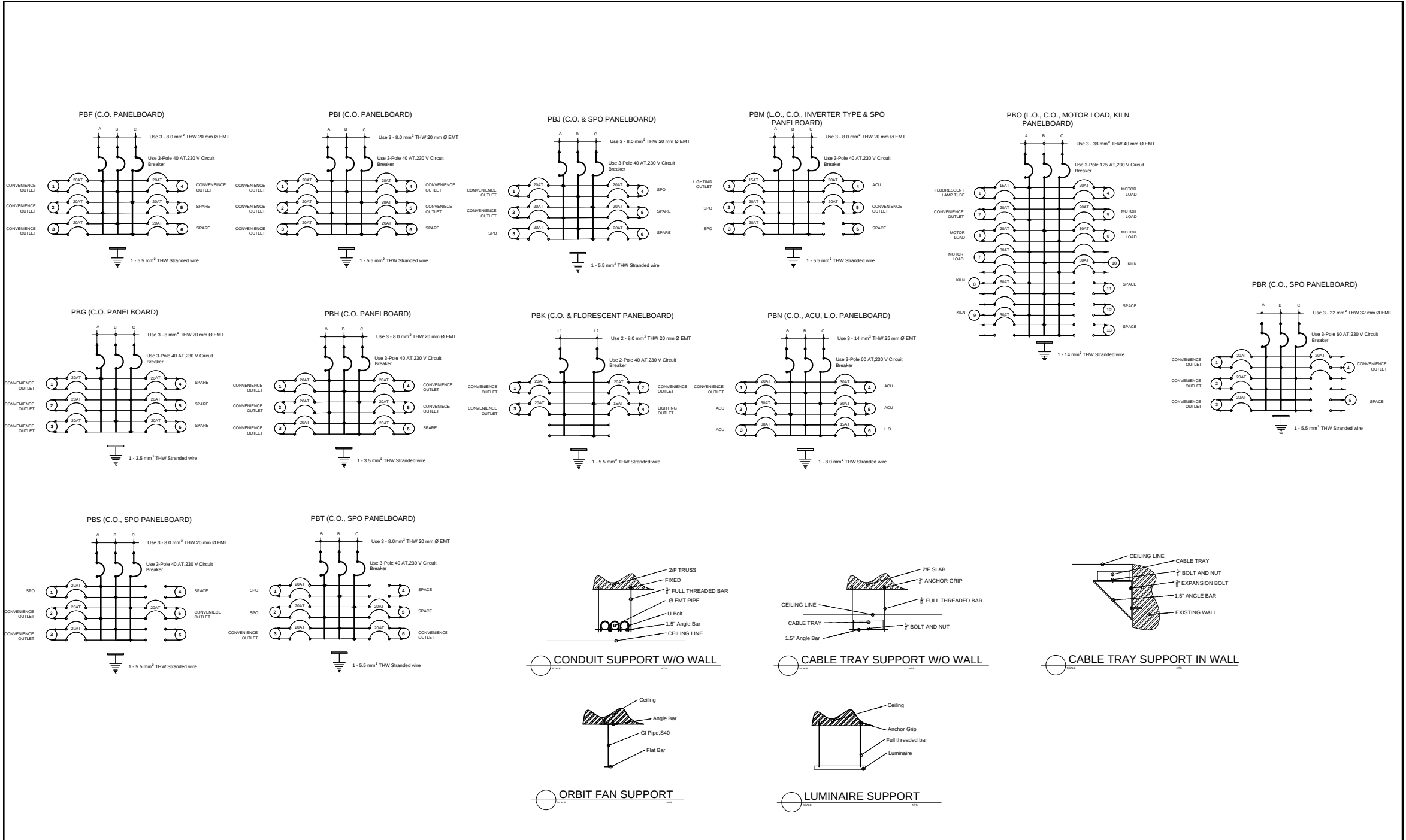
FEEDER CONDUCTOR
 $I_F = 12.55A + \sqrt{3} (258.85A) + 17A @ 25\% = 468.26 A$
 USE: 3 Sets (3 - 100 mm² & 1 - 38 mm² THW Cu. wire in 50mmØ EMT)
 FEEDER PROTECTION
 $I_F = 12.55A + \sqrt{3} (241.86A) + 17A @ 250\% = 505.07 A$
 USE: 3 POLE 600AT 240V, 60HZ, MCCB

DEMAND LOAD TABULATION									
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	3Ø Current	AB	CA	BC	CIRCUIT BREAKER		
							POLE	2P	4P
1	SUB-MDP EAST-WEST 1/F	23178.66	149.63	290.85	259.83	259.83	3	2000	800
2	SUB-MDP EAST-WEST 2/F	138879	12.55	258.86	247.53	256.61	3	2000	600
3	SUB-MDP NORTH-WING	130494	125	125.87	142.71	145.86	3	2000	450
4	SUB-MDP NORTH-AUXILIARY BLDG.	84475	80.32	105.74	133.54	103.33	3	2000	350
5	SUB-MDP WEST-AUXILIARY BLDG.	61860	175	60	60	60	3	2000	350
6	SPACE								
TOTAL		716777.66	540.81	829.42	811.72	830.43			

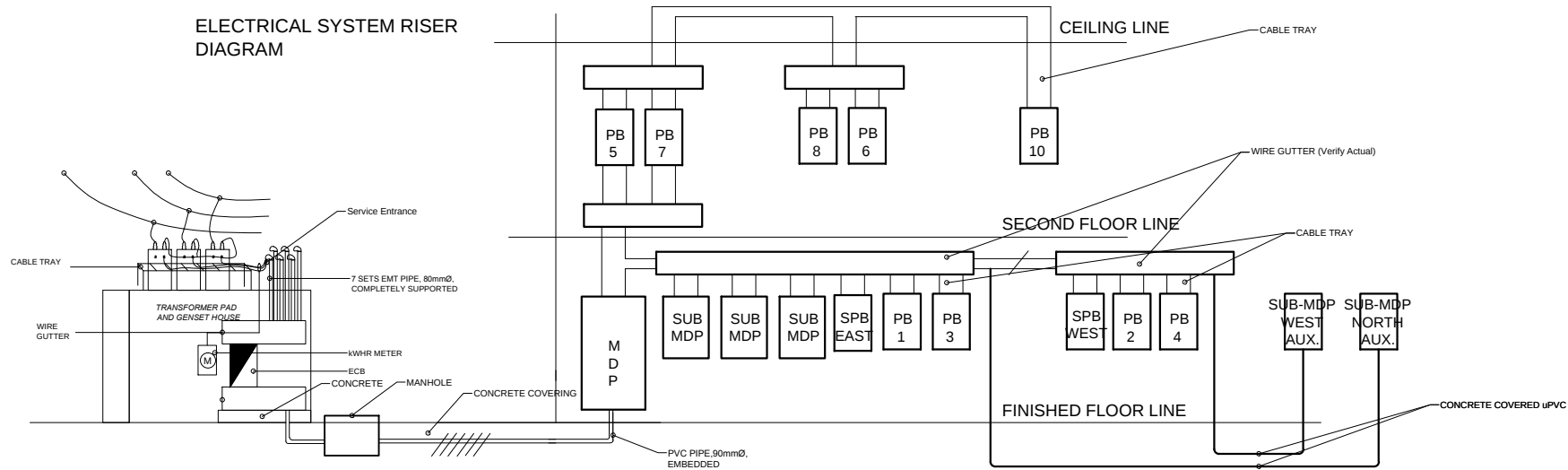
SIZING OF TRANSFORMER
 $I_{total} = (542.87A + \sqrt{3} (829.42A) = 1979.27A$
 $P_{total} = \sqrt{3} \times 230V \times 1979.27A = 788484.18VA$
 $kVA Rating / kVAr = 788484.18VA / 3 @ 80\% D.F. = 210.26kVA$
 USE: 2 Sets 250kVA Transformer Primary Voltage 13.2kV/120V Secondary Voltage 240V/120V
 Transformer Total Capacity = 750kVA
 FEEDER CONDUCTOR
 $I_F = 750.00V / 230V = 3.26A$
 USE: 7 Sets (3 - 175 mm² & 1 - 105mm² THW Cu. wire in 80mmØ IMC)
 USE: 3 POLE 2000AT 240V, 60HZ, MCCB







	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batac, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER I		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (COE)	AIDA V. CABANG CHIEF ENGINEER/INSPECTOR	NATHANIEL R. ALIBUYOG DEAN, COE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	PANEL BOARD DIAGRAM CABLE TRAY AND CONDUIT SUPPORT DETAIL	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRCSS	DATE:		ROMEO R. DULDULAO DEPARTMENT PRINCIPAL				
		LOCATION: MMSU CITY OF BATAC, ILOCOS NORTE							
ELECTRICAL PLANS									



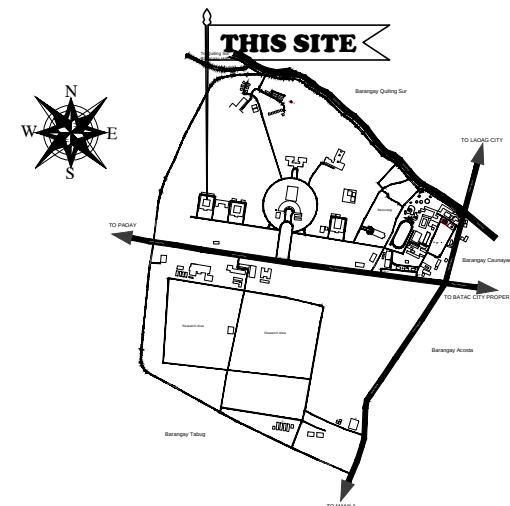
LOCATION MAP

GENERAL NOTES AND SPECIFICATIONS

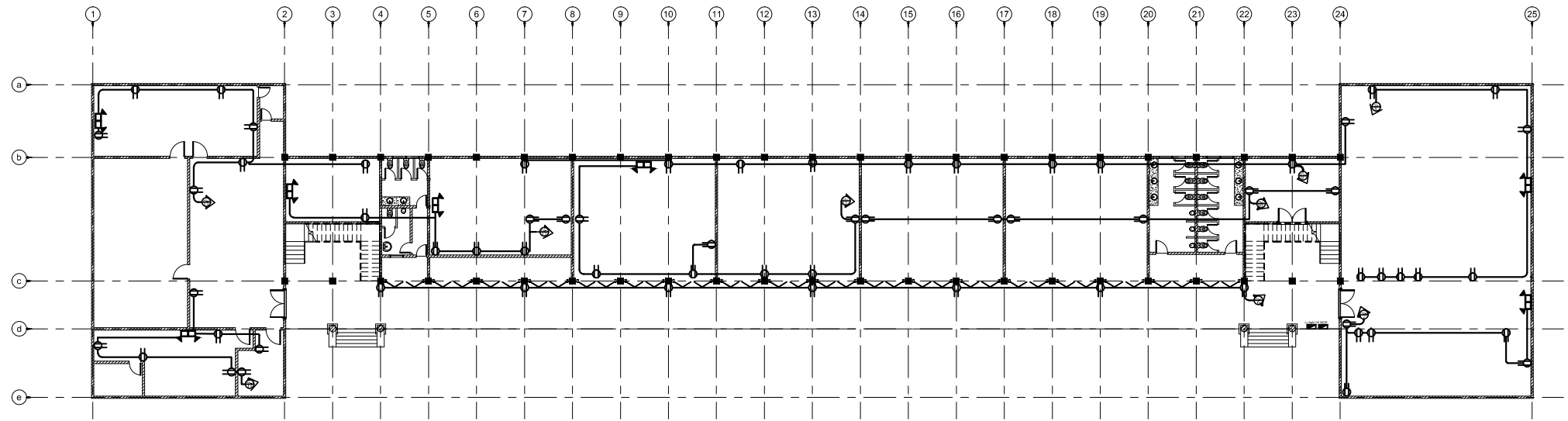
- All works herein shall be done in accordance with the plans and specifications. The applicable provisions of the latest edition of the Philippine Electrical Code, the rules and regulation of the local enforcing authority, and the requirements of the local power and telephone companies, the electrical works shall be under the immediate supervision of a duly Registered Electrical Engineer/Registered Master Electrician.
- The control wires shall be as indicated or as specified elsewhere on plans.
- The contractor shall verify and orient the actual location of service entrance for connection to the power supply.
- All pipe sleeves shall be provided with proper support or anchorage necessary for permanent connection with concrete on beam electrical code.
- All service entrance equipment, switches, panel boards, lighting fixtures and all non-current carrying metal parts shall be properly grounded in accordance with the latest edition of the Philippine Electrical Code.
- All homeruns to panelboards more than 30 meters in length shall be one step larger unless otherwise specified.
- All feeders shall be installed as indicated on plans branch circuit homerun wires shall be installed in individual homerun conduits.
- Conduit shall be properly supported for permanent installation. Conduit run in second floor ceiling shall be installed above ceiling line.
- Any discrepancy in location and rating of equipment and apparatus shall be verified with the proper authority and changes shall be made accordingly.
- 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 intended.
- The mounting heights of wiring devices shall be as follows:
 - a. Light switches - 1.4 m above finished floor
 - b. Convenience outlets - 0.3 m above finished floor or as required
 - c. Convenience outlets/SPOs - 0.3 m above finished floor or as required
 - d. ACU, Motor Outlet and SPOs - not less than 0.4 m above finished floor or as required
 - e. Telephone outlets - 0.3 m above finished floor or as required
 - f. Panelboards & cabinets - 1.8 m above finished floor to centerAll switches should be located in a very strategic location.
- Refer to the accompanying notes and specifications for more complete description/requirements of this project.

ELECTRICAL SYMBOLS

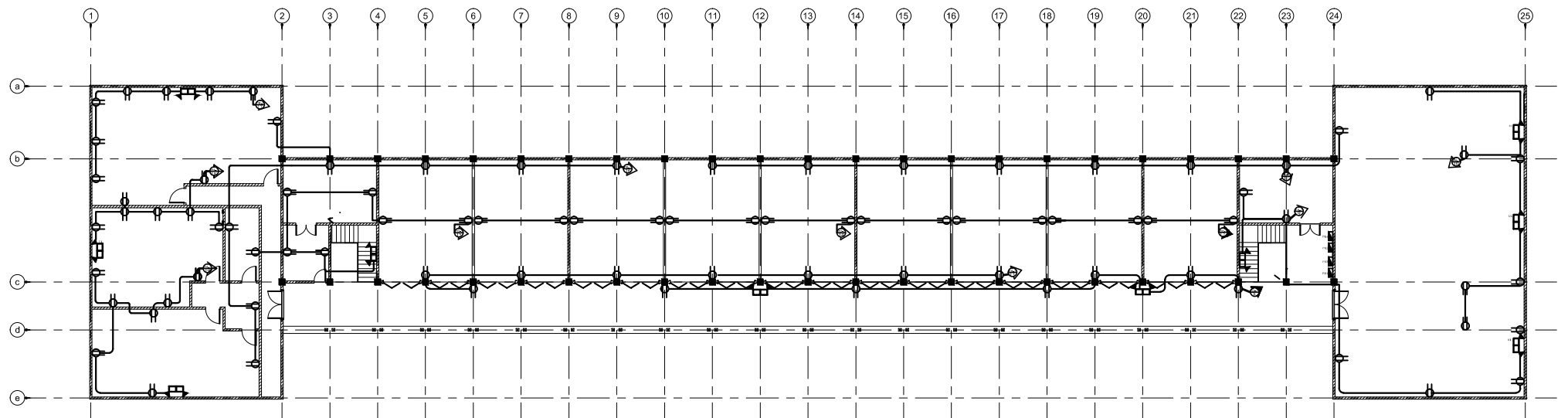
	Panelboard		Duplex Weather proof C.O.
	Circuit Breaker		Duplex Convenience Outlet
	2 x 18W LED Fluorescent Lamp Tube		SPO/NEMA 3R (Water Pump/ACU)
	LED COB High Ceiling Downlight		Distribution Line/Feeder Line
	LED Wall Lamp		Circuit Homerun
	LED Floodlight		1-Gang Switch
	LED Downlight/Dimmable		2-Gang Switch
	LED Inground Light		3-Gang Switch
	Emergency Light Outlet		3-Way Switch
	Ceiling Mounted Exhaust Fan		Fan Switch



	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Bataic, 2008 Ilocos Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER I		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (COE)	AIDA V. CABANG CHIEF ENGINEER/STRUCTURE	NATHANIEL R. ALIBUYOG DEAN, COE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	AS SHOWN	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRCSS	PTR-:		ROMEOR. DULDULAO DIRECTOR, PRCSS				
		DATE:	TIN:	LOCATION:	MMSU CITY OF BATAIC, ILOCOS NORTE				

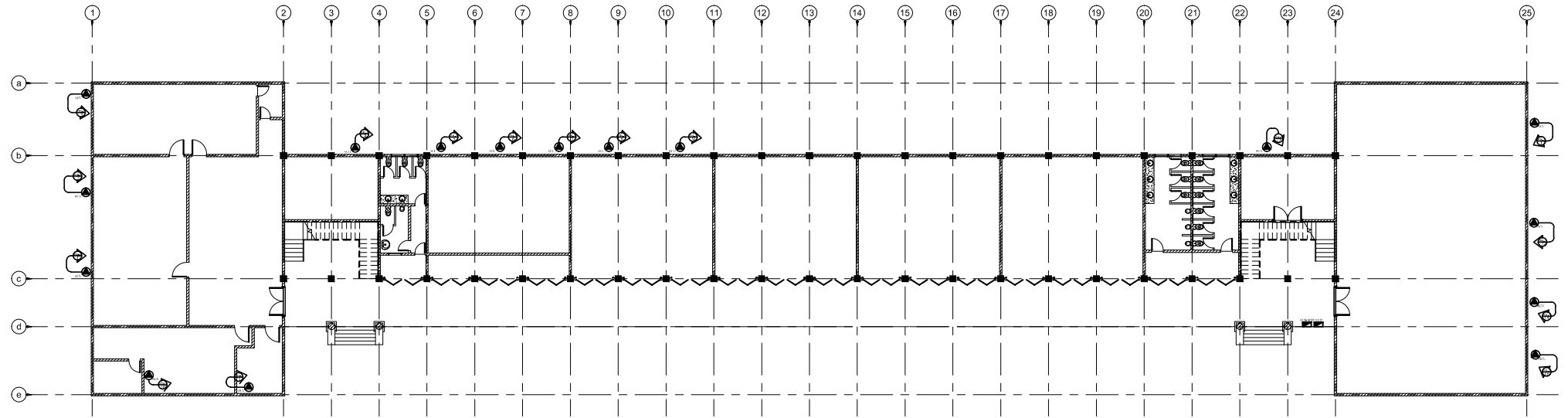


1/F POWER OUTLET LAYOUT PLAN

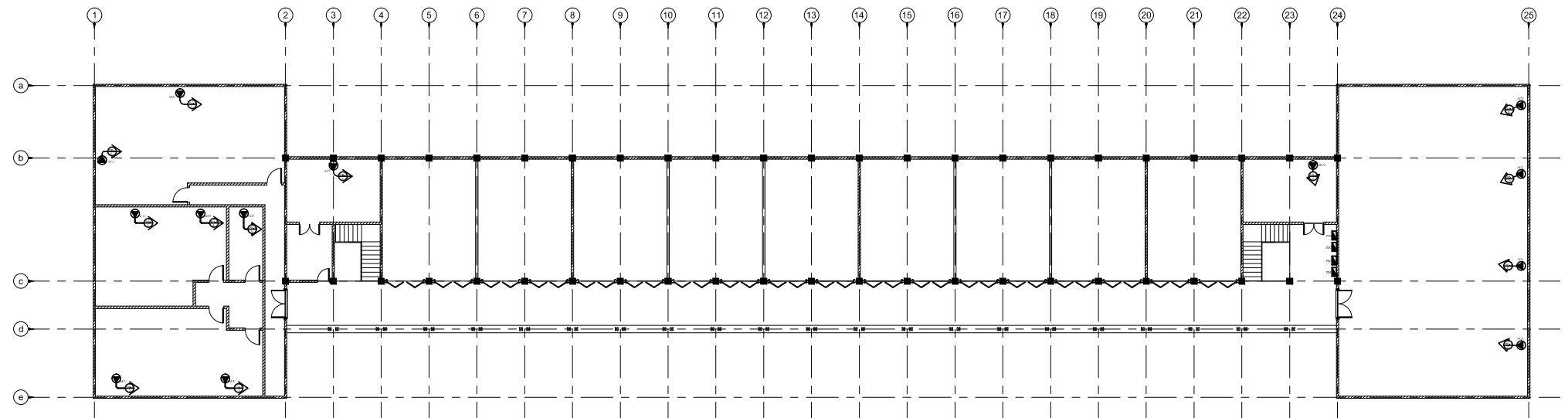


2/F POWER OUTLET LAYOUT PLAN

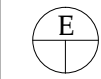
 PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang, 2006 Ilocos Norte Telefax: +63 (77) 792-3191	FROM THE OFFICE:	PREPARED BY: CARLO HUMPER P. GUMTANG ENGINEER I	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CTE)	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BUREAU, ARCHITECTURE	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO.:	
		CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC-CPD	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:	ELIZA T. SAMSON DEAN, CTE		SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	POWER OUTLET LAYOUT PLAN	
		DATE:	PLACE ISSUED:	LOCATION:	ROMEO R. DULDULAO DIRECTOR, PRC-CPD					
		TIN:		MMSU CITY OF LAOAG, ILOCOS NORTE						
										 ELECTRICAL PLANS

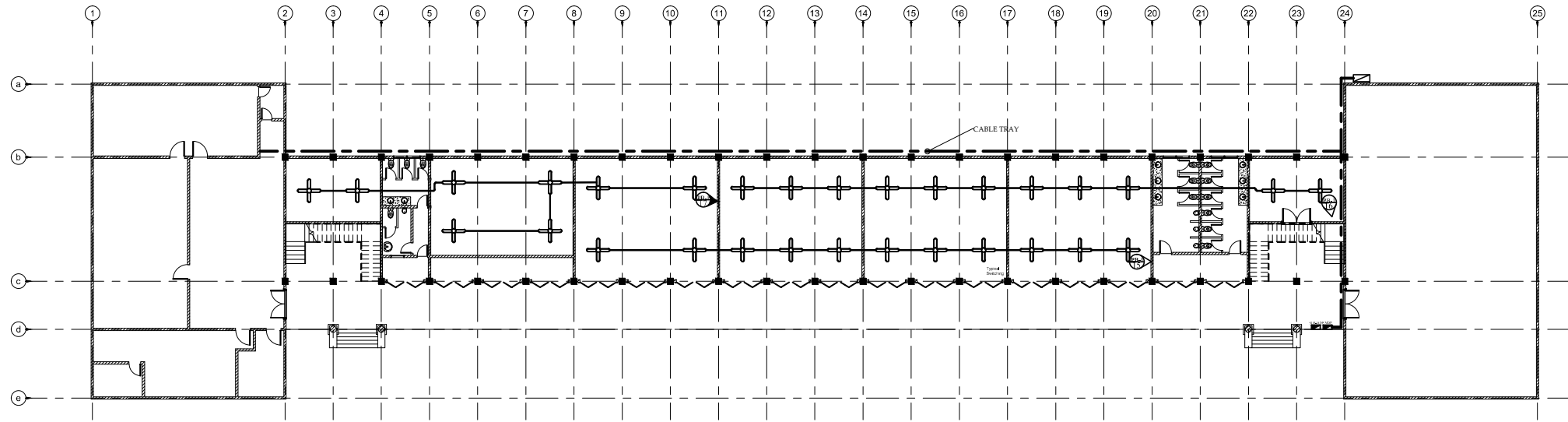


1/F ACU OUTLET LAYOUT PLAN

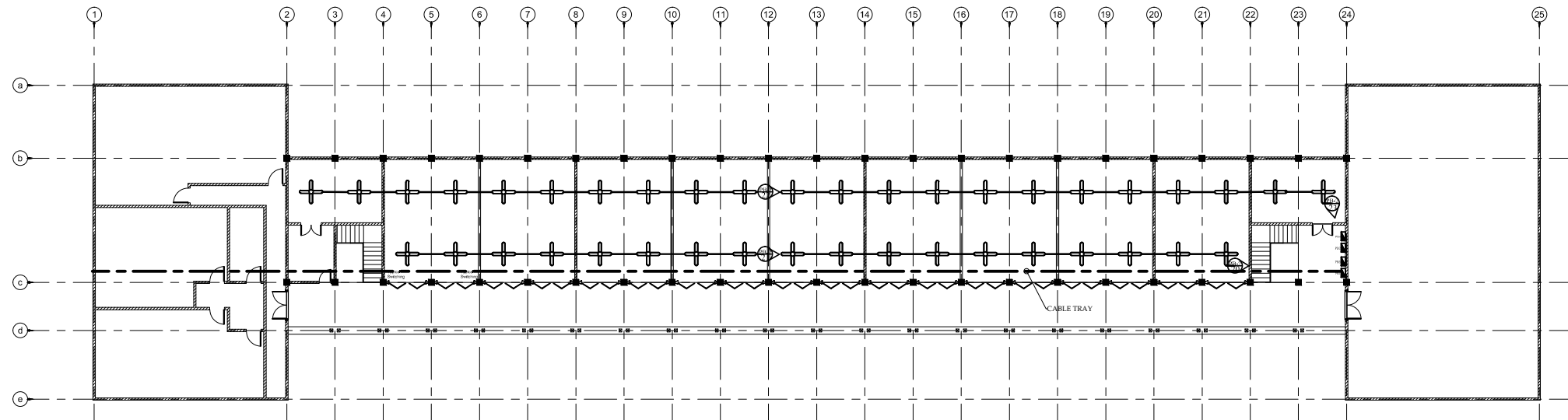


2/F ACU OUTLET LAYOUT PLAN

	FROM THE OFFICE:	PREPARED BY:	PROFESSIONAL ELECTRICAL ENGINEER:	PROJECT TITLE:	CHECKED/REVIEWED BY:	CONFORME:	APPROVED BY:	SHEET CONTENTS:	SHEET NO:
	PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang, Ilocos Norte Telefax: +63 (77) 792-3191	CARLO HUMPER P. GUMTANG ENGINEER I		REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CTE)	AIDA V. CABANG CHIEF BUREAU, ARCHITECTURE	ELIZA T. SAMSON DEAN, CTE	SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	POWER OUTLET LAYOUT PLAN CABLE TRAY LAYOUT	
		CHECKED BY:	PRC NO./VALIDITY:		RECOMMENDING APPROVAL:				
		RIGOR G. GABUR ELECTRICAL ENGINEER, PRC	DATE:		ROMEO R. DULDULAO DIRECTOR, PRC				
			LOCATION:	MMSU CITY OF LAOAG, ILOCOS NORTE					ELECTRICAL PLANS



1/F FAN OUTLET LAYOUT PLAN



2/F FAN OUTLET LAYOUT PLAN

	FROM THE OFFICE: PHYSICAL PLANT AND GENERAL SERVICES DIVISION 2/F 202 ADMINISTRATION BLDG. MARIANO MARCOS STATE UNIVERSITY City of Batang, Ilocos Norte Telefax: +63 (77) 792-3191	PREPARED BY: CARLO HUMPER P. GUMTANG ENGINEER I CHECKED BY: RIGOR G. GABUR ELECTRICAL ENGINEER, PRC-EP	PROFESSIONAL ELECTRICAL ENGINEER: PRC NO./VALIDITY: PTR: PLACE ISSUED: DATE: TIN:	PROJECT TITLE: REHABILITATION OF THE ELECTRICAL SYSTEM OF COLLEGES (CTE) LOCATION: MMSU CITY OF LAOAG, ILOCOS NORTE	CHECKED/REVIEWED BY: AIDA V. CABANG CHIEF BUREAU, ARCHITECTURE RECOMMENDING APPROVAL: ROMEO R. DULDULAO DIRECTOR, PRC-EP	CONFORME: ELIZA T. SAMSON DEAN, CTE	APPROVED BY: SHIRLEY C. AGRUPIS UNIVERSITY PRESIDENT	SHEET CONTENTS: FAN LAYOUT PLAN	SHEET NO: E ELECTRICAL PLANS
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DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	CURRENT			CIRCUIT BREAKER			CONDUCTOR			CONDUIT	
			AB	CA	RC	AT	AF	PICK	SIZE	TYPE	DIAMETER	TYPE	
1	1 SET SHIP V.1 (1.05kW) LAMP	36											
2	2 SET SHIP V.1 (1.05kW) LAMP	72	3.32			15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
3	1 SET SHIP V.1 (1.05kW) LAMP	36		2.5		15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
4	1 SET SHIP V.1 (1.05kW) LAMP	36			3.38	15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
5	10 SET SHIP V.2 (1.05kW) LAMP	360											
6	12 SET SHIP V.2 (1.05kW) LAMP	432	2.42			15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
7	7 SET SHIP V.3 (1.05kW) LAMP	252		3.76		15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
8	1 SET SHIP V.3 (1.05kW) LAMP	36											
9	7 SET SHIP V.4 (1.05kW) LAMP	252	3.47			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
10	9 SET SHIP V.4 (1.05kW) LAMP	324		7.04		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
11	9 SET SHIP V.4 (1.05kW) LAMP	324				30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
12	11 SET SHIP V.4 (1.05kW) LAMP	396				30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
13	8 SET SHIP V.4 (1.05kW) LAMP	288	6.26			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
14	8 SET SHIP V.4 (1.05kW) LAMP	288		6.26		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
15	11 SET SHIP V.4 (1.05kW) LAMP	396				30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
16	11 SET SHIP V.4 (1.05kW) LAMP	396				30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
17	8 SET SHIP V.4 (1.05kW) LAMP	288	2.78			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
18	SPACE												
19	SPACE												
20	SPACE												
21	SPACE												
22	SPACE												
23	SPACE												
24	SPACE												
TOTAL			1770	24.98	27.1	24.98							

FEEDER CONDUCTOR
IFL=V³ (27.1A) = 46.93A
USE: 3-30mm² + 8.0mm² THW CU. WIRE IN 32MM Ø MGT

FEEDER PROTECTION
USE: 3 POLE 100AT, 240V, 60HZ MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	CURRENT			CIRCUIT BREAKER			CONDUCTOR			CONDUIT	
			AB	CA	RC	AT	AF	PICK	SIZE	TYPE	DIAMETER	TYPE	
1	6 SETS SHIP V.2 (1.05kW) LAMP	216	1.8			15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
2	4 SETS SHIP V.2 (1.05kW) LAMP	144		1.35		15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
3	10 SETS SHIP V.2 (1.05kW) LAMP	360			1.95	15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
4	30 SETS SHIP V.2 (1.05kW) LAMP	1080	4.49			15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
5	24 SETS SHIP V.2 (1.05kW) LAMP	864	3.76			15	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
6	6 SETS SHIP V.2 (1.05kW) LAMP	360		1.72		30	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
7	20 SETS SHIP V.2 (1.05kW) LAMP	720	3.13			30	125	2	2.5 mm ² & 1.25mm ²	THHN	15mm	EMT	
8	6 SETS SHIP V.4 (1.05kW) LAMP	360	4.49			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
9	8 SETS SHIP V.4 (1.05kW) LAMP	480		6.36		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
10	7 SETS SHIP V.4 (1.05kW) LAMP	420	5.48			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
11	8 SETS SHIP V.4 (1.05kW) LAMP	480	6.26			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
12	4 SETS SHIP V.4 (1.05kW) LAMP	240		6.36		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
13	7 SETS SHIP V.4 (1.05kW) LAMP	420	5.48			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
14	8 SETS SHIP V.4 (1.05kW) LAMP	480	6.36			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
15	7 SETS SHIP V.4 (1.05kW) LAMP	420		5.48		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
16	5 SETS SHIP V.4 (1.05kW) LAMP	300	3.91			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
17	8 SETS SHIP V.4 (1.05kW) LAMP	480	6.36			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
18	8 SETS SHIP V.4 (1.05kW) LAMP	480		6.36		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
19	2 SETS SHIP V.4 (1.05kW) LAMP	120	0.80			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
20	10 SETS SHIP V.4 (1.05kW) LAMP	600	3.48			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
21	10 SETS SHIP V.4 (1.05kW) LAMP	600	3.48			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
22	10 SETS SHIP V.4 (1.05kW) LAMP	600	4.17			30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
23	7 SETS SHIP V.4 (1.05kW) LAMP	420		5.48		30	125	2	2.5 mm ² & 1.5mm ²	THHN	15mm	EMT	
TOTAL			2099	34.23	36.22	33.75							

FEEDER CONDUCTOR
IFL=V³ (36.22A) = 62.73A
USE: 3-30mm² + 8.0mm² THW CU. WIRE IN 32MM Ø MGT

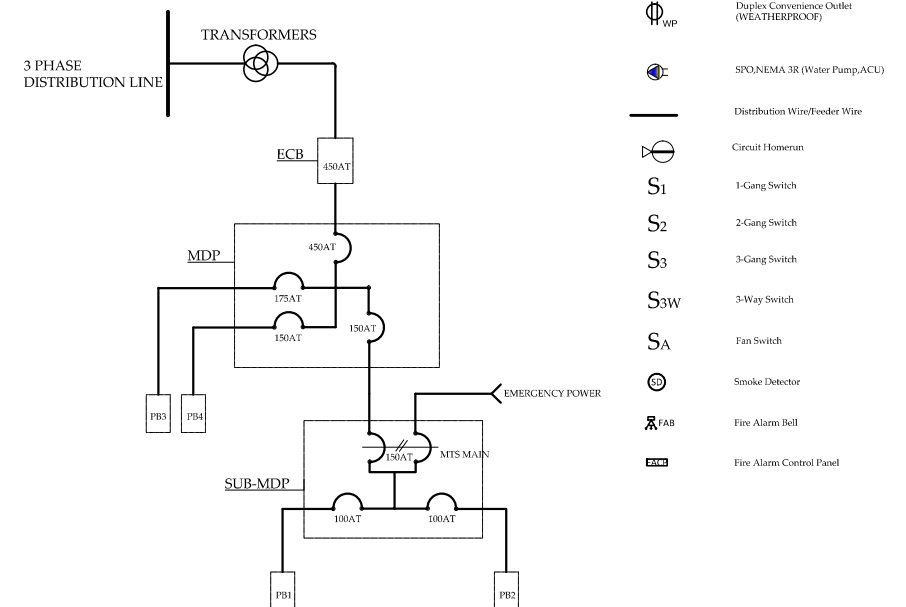
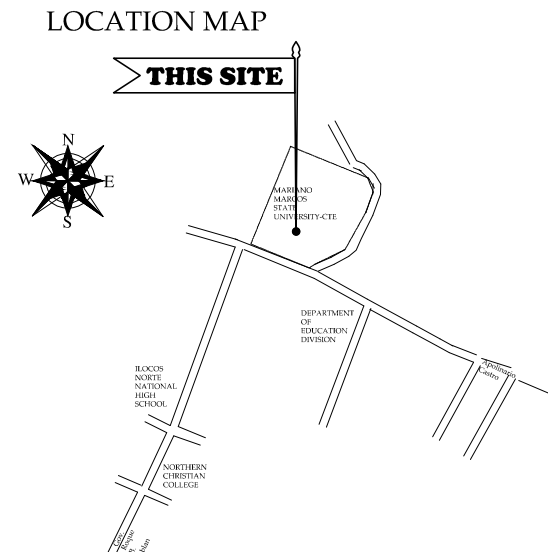
FEEDER PROTECTION
USE: 3 POLE 100AT, 240V, 60HZ MCCB

DEMAND LOAD TABULATION													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	CURRENT			CIRCUIT BREAKER			CONDUCTOR			CONDUIT	
			AB	CA	RC	AT	AF	PICK	SIZE	TYPE	DIAMETER	TYPE	
1	1 SET SHIP CONVENTIONAL ACU	360	17			60	225	2	5.5 mm ² & 1.8mm ²	THHN	25mm	EMT	
2	1 SET SHIP CONVENTIONAL ACU	360		17		60	225	2	5.5 mm ² & 1.8mm ²	THHN	25mm	EMT	
3	1 SET SHIP CONVENTIONAL ACU	360			17	60	225	2	5.5 mm ² & 1.8mm ²	THHN	25mm	EMT	
4	1 SET SHIP INVERTER ACU	120	7.4			30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
5	1 SET SHIP INVERTER ACU	120		7.4		30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
6	1 SET SHIP INVERTER ACU	120			7.4	30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
7	1 SET SHIP INVERTER ACU	120	7.4			30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
8	1 SET SHIP INVERTER ACU	240		17.6		40	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
9	1 SET SHIP INVERTER ACU	360			12.6	40	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
10	1 SET SHIP INVERTER ACU	120	7.4			30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
11	1 SET SHIP INVERTER ACU	120		7.4		30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
12	1 SET SHIP INVERTER ACU	120			7.4	30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
13	1 SET SHIP INVERTER ACU	120	7.4			30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
14	1 SET SHIP INVERTER ACU	120		7.4		30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
15	1 SET SHIP INVERTER ACU	120			7.4	30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
16	1 SET SHIP INVERTER ACU	120	7.4			30	225	2	2.5 mm ² & 1.5mm ²	THHN	20mm	EMT	
17	SPACE												
18	SPACE												
19	SPACE												
20	SPACE												
21	SPACE												
22	SPACE												
23	SPACE												
24	SPACE												
TOTAL			3628	54	31.8	91.8							

FEEDER CONDUCTOR
IFL=V³ (54A + 17A @ 25%) = 100.893A
USE: 3-80mm² + 14mm² THW CU. WIRE IN 50MM Ø MGT

FEEDER PROTECTION
IFL=V³ (37A + 17A @ 250%) = 137.70A
USE: 3 POLE 175AT, 240V, 60HZ MCCB

DEMAND LOAD TABULATION													
194													
CIRCUIT NUMBER	LOAD DESCRIPTION	VA LOAD	CURRENT			CIRCUIT BREAKER			CONDUCTOR			CONDUIT	
			AB	CA	DC	AT	AF	PICK	SIZE	TYPE	DIAMETER	TYPE	
1	1 SET SHIP INVERTER ACU	2880	12.6			40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
2	1 SET SHIP INVERTER ACU	2880		12.6		40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
3	1 SET SHIP INVERTER ACU	2880			12.6	40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
4	1 SET SHIP INVERTER ACU	2880	12.6			40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
5	1 SET SHIP INVERTER ACU	2880		12.6		40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
6	1 SET SHIP INVERTER ACU	2880			12.6	40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
7	1 SET SHIP INVERTER ACU	2880	12.6			40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
8	1 SET SHIP INVERTER ACU	2880		12.6		40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
9	1 SET SHIP INVERTER ACU	2880			12.6	40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
10	1 SET SHIP INVERTER ACU	2880	12.6			40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
11	1 SET SHIP INVERTER ACU	2880		12.6		40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
12	1 SET SHIP INVERTER ACU	2880			12.6	40	225	2	2.80 mm ² & 1.55mm ²	THHN	20mm	EMT	
13	SPACE					225	2						
14	SPACE					225	2						
15	SPACE					225	2						
16	SPACE					225	2						
17	SPACE					225	2						
18	SPACE					225	2						
	TOTAL	34776	30.4	30.4	30.4								



- ## ELECTRICAL SYMBOLS

- | | |
|--|---|
| | Panelboard |
| | Circuit Breaker |
| | Main Distribution PanelBoard |
| | 2x18Watt LED Fluorescent Lamp |
| | 1x18Watt LED Fluorescent Lamp |
| | 6W Pinlight,LED |
| | 6W Pinlight,LED |
| | Exhaust / Lighting |
| | 100W LED Floodlight |
| | 80W Orbit Fan |
| | Ceiling Mounted Exhaust Fan |
| | Twin head Emergency Light |
| | Exit Signage |
| | Duplex Convenience Outlet |
| | Duplex Convenience Outlet
(WEATHERPROOF) |
| | SPO,NEMA 3R (Water Pump,ACU) |
| | Distribution Wire/Feeder Wire |
| | Circuit Houserun |
| | 1-Gang Switch |
| | 2-Gang Switch |
| | 3-Gang Switch |
| | 3-Way Switch |
| | Fan Switch |
| | Smoke Detector |
| | Fire Alarm Bell |
| | Fire Alarm Control Panel |