

GENERAL NOTES:

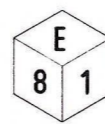
- ALL WORKS SHALL COMPLY WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE RULES & REGULATIONS OF THE NATIONAL AND LOCAL AUTHORITY CONCERNED IN THE ENFORCEMENT OF ELECTRICAL LAWS AND ORDINANCES AND THE REGULATIONS OF THE UTILITY COMPANY CONCERNED
- POWER SERVICE TO THE BUILDING SHALL BE 230 VOLTS 3 PHASE 3 WIRE & GROUND.
- SMALLEST CONDUCTOR FOR POWER AND LIGHTING SHALL BE 3.5mm² THHN AND SMALLEST RACEWAY SHALL BE 15mm DIA. TRADE SIZE CONDUCTOR SHALL BE TYPE THHN EXCEPT AS OTHERWISE REQUIRED BY THE DRAWING AND INSULATED FOR 600 VOLTS.
- GROUNDING WIRE SHALL BE PROVIDED TO ALL EQUIPMENTS, OUTLETS AND LIGHTING CIRCUITS AND ALL NON-CURRENT CARRYING METAL PARTS.
- MATERIALS AND EQUIPMENT TO BE USED SHALL BE NEW AND OF APPROVED TYPE FOR BOTH LOCATION AND PURPOSE INTENDED. SUBMIT SAMPLES OF MATERIALS TO THE ARCHITECT/ DESIGN ENGINEER FOR APPROVAL PRIOR TO INSTALLATION
- NO BRANCH CKT. SHALL HAVE A LOAD OF MORE THAN 80% OF ITS RATING.
- EMERGENCY LIGHTING SHALL BE PROVIDED WITH A DEDICATED CIRCUIT.
- CIRCUIT BREAKERS SHALL BE BOLT ON TYPE. USE ONLY ONE BRAND ALL THROUGHOUT.
- MOUNTING HEIGHT SHALL BE AS FOLLOWS:
 - LIGHT CONTROL SWITCH - 1.52 ABOVE FINISHED FLOOR
 - CONVENIENCE OUTLET - 0.30 ABOVE FINISHED FLOOR
 - SPECIAL PURPOSE OUTLET - 0.30 ABOVE FINISHED FLOOR OR AS REQUIRED BY THE ARCHITECT
 - PANEL BOARDS, FIRE ALARM-PANEL 1.80 FROM TOP OF PANEL TO FINISHED FLOOR
- ALL WORKS SHALL BE COORDINATED WITH THE ARCHITECT AND OTHER TRADE DISCIPLINE PRIOR TO INSTALLATION
- CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS SIGNED AND SEALED BY PROFESSIONAL ELECTRICAL ENGINEER.
- CONTRACTOR TO PERFORM ALL TEST NECESSARY BUT NOT LIMITED TO THE FOLLOWING.
 - CABLE INSULATION INTEGRITY TEST
 - PHASE SEQUENCE TEST
 - LOAD TEST
 - COMPLETE TEST FOR TRANSFORMER
- ALL WIRES SHALL BE COLOR CODED AS FOLLOWS:

PHASE - A - BLACK	GROUND - GREEN
PHASE - B - RED	PHASE - C - BLUE
- NO CHANGE OR MODIFICATION SHALL BE MADE ON THESE PLANS WITHOUT THE ENGINEER'S/OWNER'S WRITTEN COMMENT.
- ALL MOTORS AND AIR-CONDITIONING UNITS MUST HAVE INDIVIDUAL ENCLOSED THERMAL MAGNETIC CIRCUIT BREAKER
- ENCLOSURE TYPE FOR PANEL BOARDS SHALL BE NEMA 3R FOR INDOORS AND NEMA 4X FOR OUTDOORS.
- ALL CONVENIENCE OUTLETS SHALL BE TAMPER-RESISTANT (TRR). GFCI CONVENIENCE OUTLETS SHALL BE USED IN WET LOCATIONS
- EMERGENCY LIGHTING AND FIRE EXIT SIGNAGE OUTLETS LOCATED ON COLUMNS SHALL BE CEILING-MOUNTED

IMPORTANT NOTES

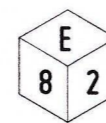
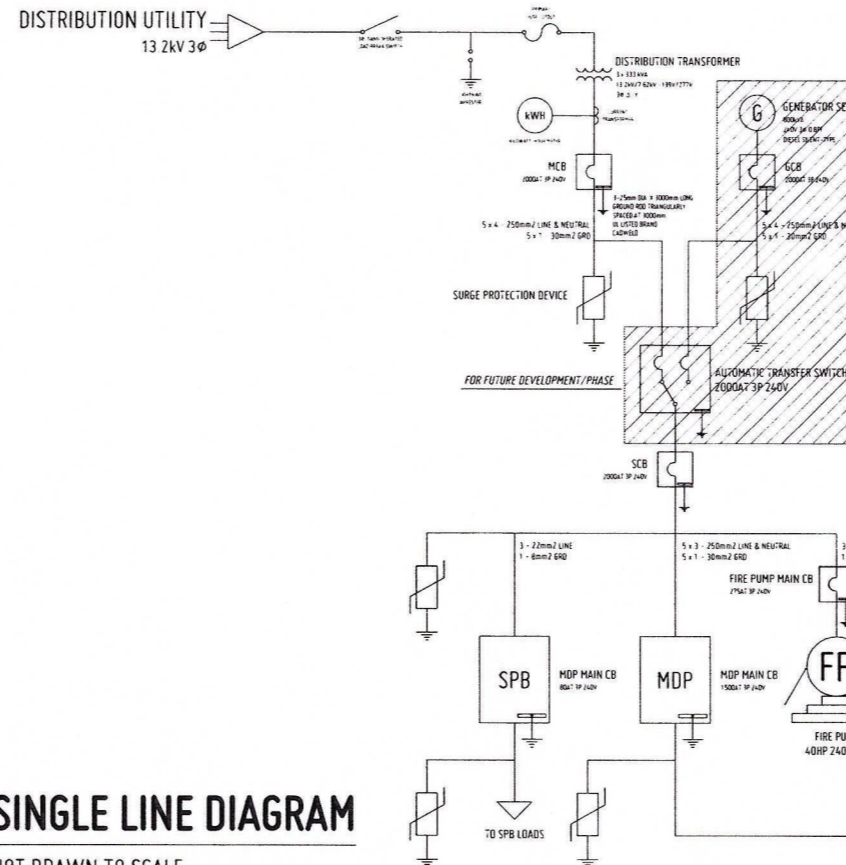
- STRUCTURAL DESIGN/DETAILS OF PEDESTAL, DUCTBANK AND GENERATOR PADS SHALL BE COORDINATED WITH STRUCTURAL ENGINEER PRIOR TO IMPLEMENTATION
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER UTILITY COMPANY FOR TOTAL LOAD REQUIREMENTS OF THE PROJECT TO ASSURE AVAILABILITY OF 3-PHASE OR 1-PHASE TO BE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

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



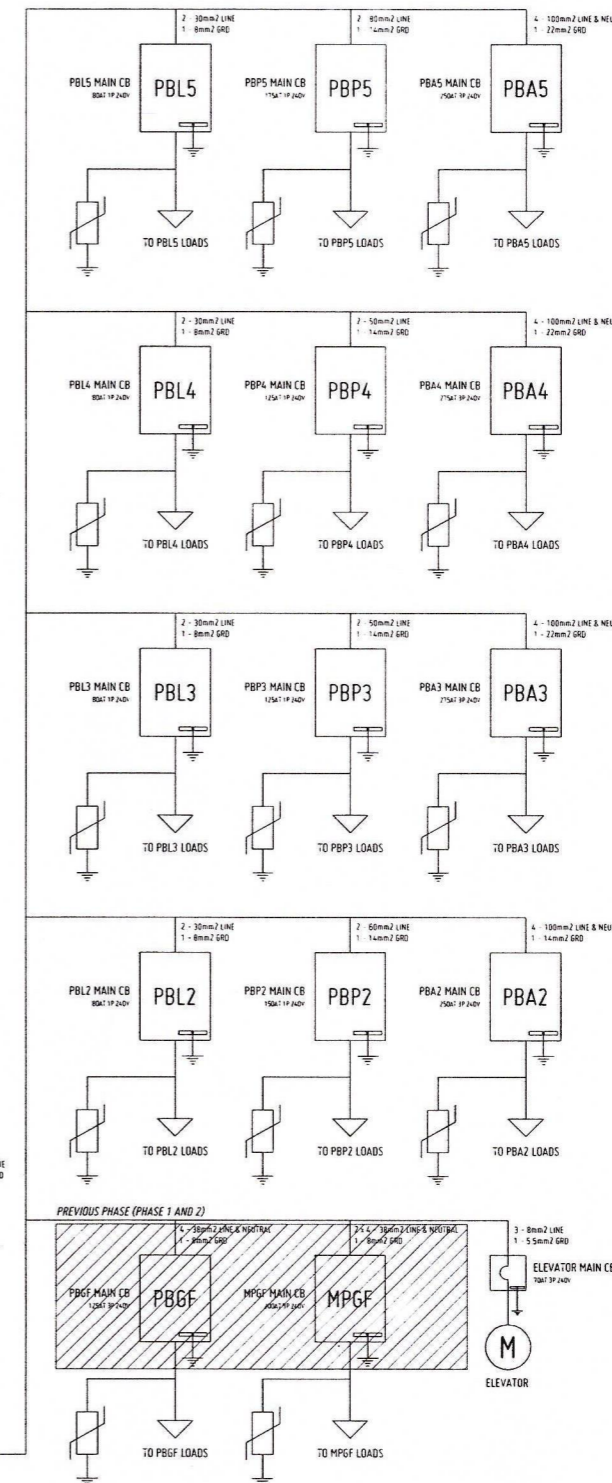
ELECTRICAL LEGEND AND SYMBOLS

NOT DRAWN TO SCALE



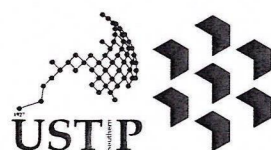
SINGLE LINE DIAGRAM

NOT DRAWN TO SCALE



REPUBLIC OF THE PHILIPPINES
OFFICE OF THE BUILDING OFFICIAL
VILLANUEVA, MISAMIS ORIENTAL

APPROVED BY:



REPUBLIC OF THE PHILIPPINES
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
CAGAYAN DE ORO CAMPUS
INFRASTRUCTURE PLANNING AND FACILITY DEVELOPMENT UNIT
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WEBSITE: www.ustp.edu.ph

PROFESSIONAL ELECTRICAL ENGINEER	PROJECT	CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
PRC NO. _____ PFR NO. _____	LOCATION	USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
DATE: _____	OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
TIN NO. _____ PLACE: _____		

RECOMMENDING APPROVAL

ENGR. GRACE C. BABA
DIRECTOR, IPFDD

RECOMMENDING APPROVAL

ATTY. ERWIN B. BUCIO
VP FOR ADMINISTRATION & LEGAL AFFAIRS

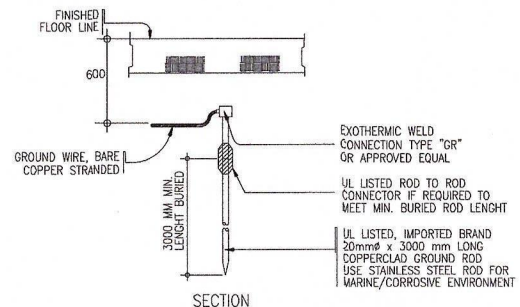
APPROVED BY:

DR. AMBRICIO B. CULTURA II
RESIDENT, USTP SYSTEM

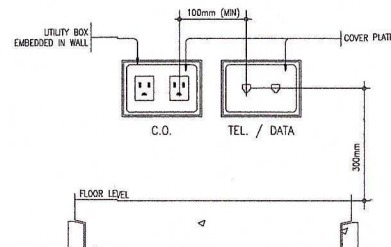
SHEET CONTENTS: ELECTRICAL LEGEND AND SYMBOLS SINGLE LINE DIAGRAM	DRAWN BY:
	DATE DRAWN:
	INT:



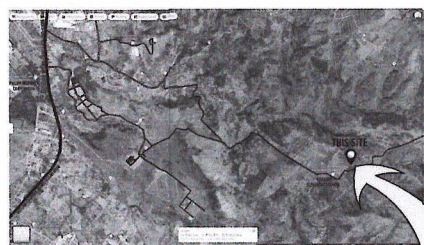
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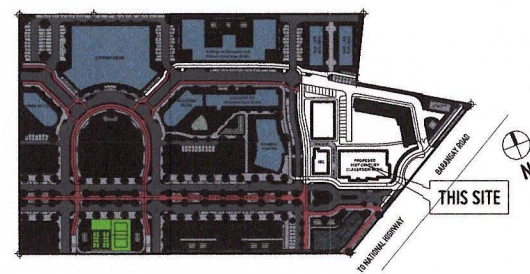
E 9 1 TYPICAL GROUND ROD DETAIL
NDTS



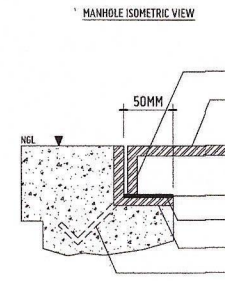
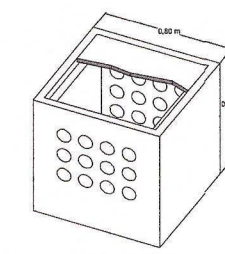
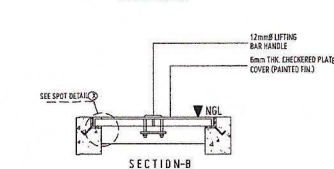
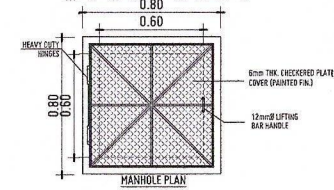
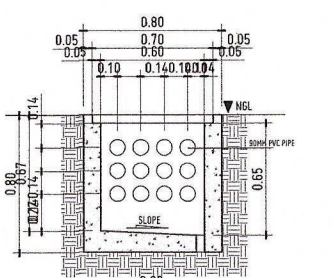
E 9 2 TYPICAL C.O. AND TELEPHONE,
DATA OUTLETS MOUNTING DETAILS
NDTS



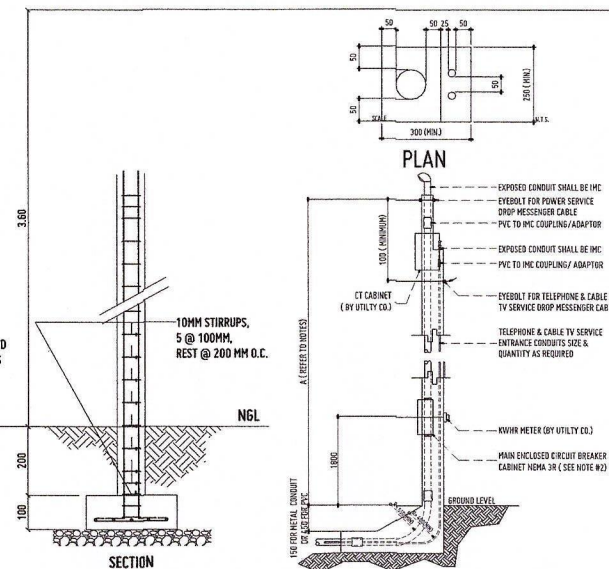
E 9 3 VICINITY MAP
NDTS



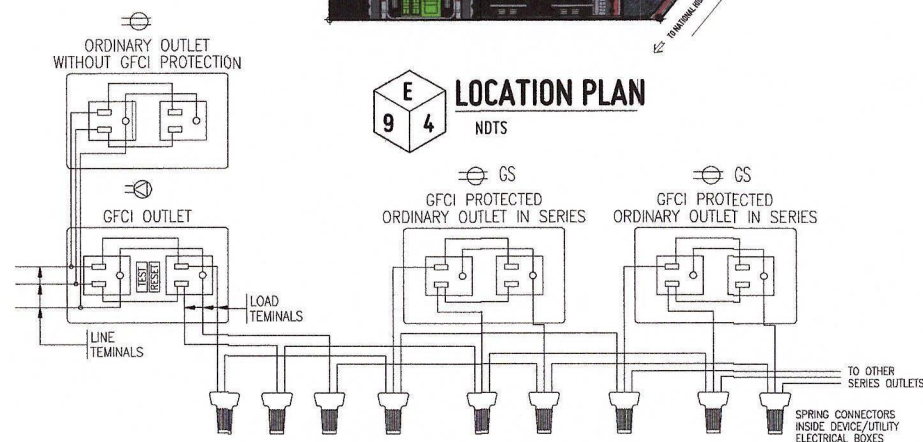
E 9 4 LOCATION PLAN
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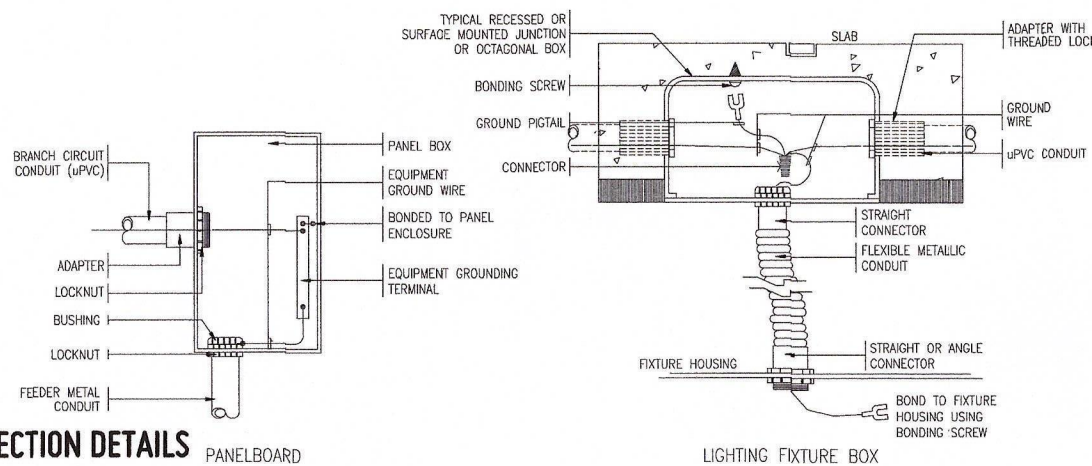
E 9 7 ELECTRICAL MANHOLE DETAIL
SCALE: 1:20 MTS



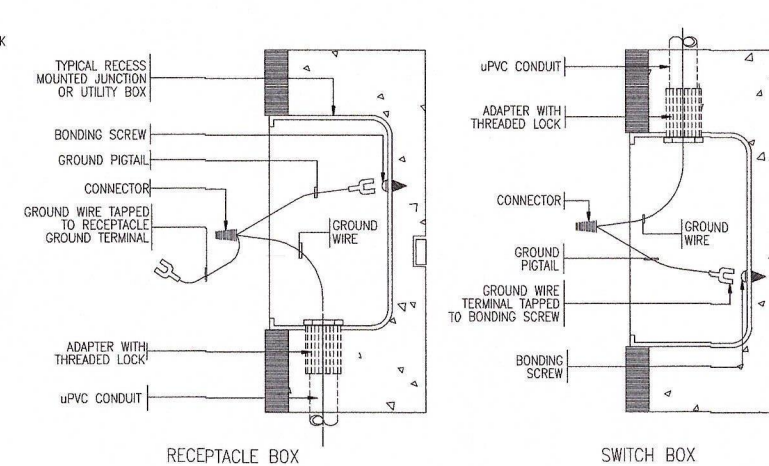
E 9 8 SERVICE PEDESTAL DETAIL
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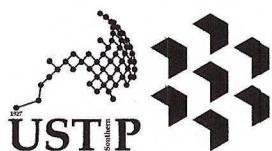
E 9 5 CONV. OUTLET IN SERIES WITH GCFI
OUTLET WIRING CONNECTION DETAIL
NDTS



E 8 6 TYPICAL GROUNDING CONNECTION DETAILS
PANELBOARD



RECEPTACLE BOX
SWITCH BOX



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PROFESSIONAL ELECTRICAL ENGINEER
PRC NO.: PTR NO.:
DATE: PLACE:
TIN NO.:

PROJECT: CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
LOCATION: USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
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DIRECTOR, IPFDO

RECOMMENDING APPROVAL:
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VP FOR ADMINISTRATION & LEGAL AFFAIRS

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

SHEET CONTENTS:
TYPICAL GROUND ROD DETAIL
TYPICAL C.O. AND TELEPHONE, DATA OUTLETS MOUNTING DETAILS
VICINITY MAP
LOCATION PLAN
CONV. OUTLET IN SERIES WITH GCFI
OUTLET WIRING CONNECTION DETAIL
TYPICAL GROUNDING CONNECTION DETAILS
ELECTRICAL MANHOLE DETAIL
SERVICE PEDESTAL DETAIL

DRAWN BY:
DATE DRAWN:
PNT:

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APPROVED BY:

DESIGN ANALYSIS						
LOAD TYPE	VA PER LOAD	VOLTAGE	FLC PER PHASE (w/ DF)			
			AB	BC	CA	3Ø
LIGHTING OUTLET	72180.00	230	124.24	5.57	121.25	0.00
CONVENIENCE OUTLET	127560.00	230	214.49	224.30	21.29	0.00
AIRCON	313656.00	230	489.50	399.00	475.00	0.00
MOTOR (NON-CONTINUOUS)	11673.11	230	0.00	0.00	0.00	29.30
MOTOR (CONTINUOUS)	13703.58	230	0.00	0.00	0.00	34.40
LARGEST MOTOR	41429.44	230	0.00	0.00	0.00	104.00
SPARE	55500.00	230	62.61	52.17	46.96	13.56
TOTAL CONNECTED VA	635702.14	230	890.84	681.03	664.50	181.26

DEMAND FACTOR CALCULATION		LINE CURRENT CALCULATION	
DEMAND FACTOR = TOTAL DEMAND VA/TOTAL CONNECTED VA		IL= LARGEST TOTAL PHASE CURRENT + TOTAL 3Ø CURRENT	
TOTAL DEMAND VA	588422.14	IL=890.839130434783(1.732) + 181.258499849382	
OVERALL DEMAND FACTOR	92.56%	1724.19187376243 A	

MCB/SCB	DEMAND FACTORS PER PB	TOTAL VA	DEMAND VA
SPB	0.93	635702.136	588422.14
MDP	1.00	18376.70	18376.70
PB6F	0.92	572896.00	526216.00
PBL2	0.72	43440.00	31152.00
PBL3	0.80	16980.00	13584.00
PBL4	0.80	17380.00	13904.00
PBL5	0.80	17380.00	13904.00
PBP2	0.80	17380.00	13904.00
PBP3	0.82	33240.00	27420.00
PBP4	0.83	27120.00	22488.00
PBP5	0.84	22260.00	18600.00
MP6F	0.84	36060.00	30204.00
PBA2	1.00	51185.00	51185.00
PBA3	1.00	64755	64755.00
PBA4	1.00	72575	72575.00
PBA5	1.00	72575	72575.00
PBA5	1.00	67566	67566.00

PB ID	PERCENT LOADING	
	% MOTOR LOAD	% STATIC LOAD
PB6F	0.00%	100.00%
PBL2	0.00%	100.00%
PBL3	0.00%	100.00%
PBL4	0.00%	100.00%
PBL5	0.00%	100.00%
PBP2	0.00%	100.00%
PBP3	0.00%	100.00%
PBP4	0.00%	100.00%
PBP5	8.32%	91.68%
MP6F	94.14%	5.86%
PBA2	95.37%	4.63%
PBA3	95.87%	4.13%
PBA4	95.87%	4.13%
PBA5	95.56%	4.44%
SPB	83.67%	16.33%

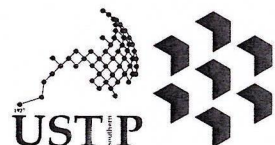
DESIGN ANALYSIS, TRANSFORMER AND GENERATOR SIZING



SCALE

NOTS

TRANSFORMER SIZING		GENERATOR SIZING	
TOTAL LINE CURRENT	CALCULATION	CALCULATION	
1724.191874	TRANSFORMER SIZE	kW LOAD	$P = (1.732 \times V \times I \times PF) / 1000$
	$S = (1.732 \times V \times I) \times 125\%$		$P = (1.732 \times 230 \times 1724.19 \times 0.80) / 1000$
	$S = (1.732 \times 230 \times 1724.19) \times 125\%$		$P = 549.4792598656kW$
	$S = 858.56134354 kVA$		RESERVE CAPACITY
THEREFORE USE 3 x 333 kVA 1P 13.2kV/240V POLE MOUNTED DISTRIBUTION TRANSFORMER		GENERATOR SIZE	$P = 549.48 \times 0.25$
			$P = 137.37kW$
			$P = 549.48 + 137.37$
			$P = 686.85kW$
		THEREFORE USE 800kVA 3P 240V 60HZ 0.8PF SILENT-TYPE DIESEL GENERATOR SET	



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SHEET CONTENTS:
DESIGN ANALYSIS
TRANSFORMER AND GENERATOR SIZING
DRAWN BY:
DATE DRAWN:
FNT:

E10

APPROVED BY:

MAIN CIRCUIT BREAKER/SECONDARY CIRCUIT BREAKER - SCHEDULE OF LOADS																								
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{SW}	S _{SW}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
MCB/SCB	C1	MDP - Main Distribution Panel										230	572896	572896	890.84	681.03	664.50	32.63	60	3	1800	(5) 4 - 250 mm ² XLPE Copper Wire	(5) 80mm ϕ Conduit - RSC	(5) 30 - 8 mm ² THHN Copper Wire
	C2	SPB - Secondary Panel Board										230	18377	18377	0.00	0.00	0.00	46.13	60	3	80	3 - 22 mm ² XLPE Copper Wire	32 mm ϕ Conduit - RSC	1 - 8 mm ² THHN Copper Wire
	C3	Fire Pump				40						230	41429	41429				104.00	60	3	275	3 - 60 mm ² THHN Copper Wire	50 mm ϕ Conduit - RSC	1 - 14 mm ² THHN Copper Wire
	C4	SPARE										230	3000	3000				6.02						
TOTAL			0	0	0	0	0	0	0	0			635702	890.84	681.03	664.50	188.79							

Calculation:	For Service Conductor	IL = (890.84 x 1.732) + 25% (104) + 188.79	1757.77 A
	For Service Protection	IL = (890.84 x 1.732) + 150% (104) + 188.79	1887.77 A
	THEREFORE USE 2000 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V USE 5 SETS OF 4 - 250 mm ² XLPE COPPER, 1 - 30 mm ² GROUND @ 80 mm ϕ Conduit - RSC		

Load Type	VA	FLC			
		AB	BC	CA	3P
LD	72180.00	124.24	5.57	121.25	0.00
CO	127560.00	214.49	224.30	21.29	0.00
ACU	313656.00	489.50	399.00	475.00	0.00
MOTOR (NC)	11673.11	0.00	0.00	0.00	29.30
MOTOR (C)	13703.58	0.00	0.00	0.00	34.40
LARGEST MOTOR	41429.44	0.00	0.00	0.00	104.00
SPARE	55500.00	62.61	52.17	46.96	13.56
TOTAL	635702.14	890.84	681.03	664.50	181.26

MAIN DISTRIBUTION PANEL - SCHEDULE OF LOADS																								
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{SW}	S _{SW}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
MDP	C1	PBG6										230	43440	43440	53.98	44.17	52.94	-	60	3	125	4 - 38 mm ² THHN Copper Wire	50mm ϕ Conduit - PVC	1 - 8 mm ² THHN Copper Wire
	C2	PBL2										230	16980	16980	58.06	-	-	-	60	2	80	2 - 30 mm ² THHN Copper Wire	40mm ϕ Conduit - PVC	1 - 8 mm ² THHN Copper Wire
	C3	PBL3										230	17380	17380	60.45	-	-	-	60	2	80	2 - 30 mm ² THHN Copper Wire	40mm ϕ Conduit - PVC	1 - 8 mm ² THHN Copper Wire
	C4	PBL4										230	17380	17380	-	-	60.45	-	60	2	80	2 - 30 mm ² THHN Copper Wire	40mm ϕ Conduit - PVC	1 - 8 mm ² THHN Copper Wire
	C5	PBL5										230	17380	17380	-	-	60.45	-	60	2	80	2 - 30 mm ² THHN Copper Wire	40mm ϕ Conduit - PVC	1 - 8 mm ² THHN Copper Wire
	C6	PBP2										230	33240	33240	-	119.22	-	-	60	2	150	2 - 60 mm ² THHN Copper Wire	50mm ϕ Conduit - PVC	1 - 14 mm ² THHN Copper Wire
	C7	PBP3										230	27120	27120	-	97.77	-	-	60	2	125	2 - 50 mm ² THHN Copper Wire	50mm ϕ Conduit - PVC	1 - 14 mm ² THHN Copper Wire
	C8	PBP4										230	22260	22260	80.87	-	-	-	60	2	125	2 - 50 mm ² THHN Copper Wire	50mm ϕ Conduit - PVC	1 - 14 mm ² THHN Copper Wire
	C9	PBP5										230	36060	36060	131.32	-	-	-	60	2	175	2 - 80 mm ² THHN Copper Wire	50mm ϕ Conduit - PVC	1 - 14 mm ² THHN Copper Wire
	C10	MPG6										230	51185	51185	81.22	65.50	73.22	-	60	3	200	(2) 4 - 38 mm ² THHN Copper Wire	(2) 50mm ϕ Conduit - PVC	(2) 1 - 8 mm ² THHN Copper Wire
	C11	PBA2										230	64755	64755	94.00	81.93	103.00	-	60	3	250	4 - 100 mm ² THHN Copper Wire	75mm ϕ Conduit - PVC	1 - 22 mm ² THHN Copper Wire
	C12	PBA3										230	72575	72575	119.00	84.22	109.72	-	60	3	275	4 - 100 mm ² THHN Copper Wire	75mm ϕ Conduit - PVC	1 - 22 mm ² THHN Copper Wire
	C13	PBA4										230	72575	72575	119.00	84.22	109.72	-	60	3	275	4 - 100 mm ² THHN Copper Wire	75mm ϕ Conduit - PVC	1 - 22 mm ² THHN Copper Wire
	C14	PBA5										230	67566	67566	91.93	104.00	95.00	-	60	3	250	4 - 100 mm ² THHN Copper Wire	75mm ϕ Conduit - PVC	1 - 22 mm ² THHN Copper Wire
	C15	Elevator										230	10000	10000	-	-	-	25.10	60	3	70	3 - 8 mm ² THHN Copper Wire	32mm ϕ Conduit - PVC	1 - 5.5mm ² THHN Copper Wire
	C16	SPARE										230	1500	1500	-	-	-	3.77						
	C17	SPARE										230	1500	1500	-	-	-	3.77						
TOTAL			0	0	0	0	0	0	0	0			572896	890.84	681.03	664.50	32.63							

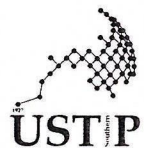
Calculation:	For Service Conductor	IL = (890.84 + 25% (28)) x 1.732 + 32.63	1587.74 A
	For Service Protection	IL = (890.84 + 150% (28)) x 1.732 + 32.63	1648.36 A
	THEREFORE USE 1800 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V USE 5 SETS OF 4 - 250 mm ² XLPE COPPER, 1 - 30 mm ² GROUND @ 80 mm ϕ Conduit - RSC		

Load Type	VA	FLC			
		AB	BC	CA	3P
LD	72180.00	124.24	5.57	121.25	0.00
CO	127560.00	214.49	224.30	21.29	0.00
ACU	313656.00	489.50	399.00	475.00	0.00
MOTOR (NC)	10000.00	0.00	0.00	0.00	25.10
MOTOR (C)	0.00	0.00	0.00	0.00	0.00
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	49500.00	62.61	52.17	46.96	0.00
TOTAL	572896.00	890.84	681.03	664.50	25.10



SCHEDULE OF LOADS

SCALE: NDS



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

PROFESSIONAL ELECTRICAL ENGINEER
PRC NO. PTR NO.
DATE: PLACE:

PROJECT: CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
LOCATION: USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, IPFDO

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

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

SHEET CONTENTS:
SCHEDULE OF LOADS
DRAWN BY:
DATE DRAWN:
PRT:



SECONDARY PANEL BOARD - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT			
							S ₁	S ₂	S ₃	S _{3W}	S _{4W}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING	
SPB	C1	Plumbing Transfer Pump - Main				4						230	4940	4940					12.40	60	3	30	3 - 5.5 mm ² THWN Copper Wire	20 mm # Conduit - RSC	1 - 5.5 mm ² THWN Copper Wire
	C2	Plumbing Transfer Pump - Backup				1						230	1673	1673					4.20	60	3	20	3 - 5.5 mm ² THWN Copper Wire	20 mm # Conduit - RSC	1 - 5.5 mm ² THWN Copper Wire
	C3	Jockey Pump				7.5						230	8764	8764					22.00	60	3	60	3 - 8.0 mm ² THWN Copper Wire	25 mm # Conduit - RSC	1 - 5.5 mm ² THWN Copper Wire
	C4	SPARE										230	1500	1500					3.77	60	2				
	C5	SPARE										230	1500	1500					3.77	60	2				
TOTAL			0	0	0	12.5	0	0	0	0	0			18377	0.00	0.00	0.00	46.13							

APPROVED BY:

Calculation:

For Service Conductor
 $IL = (0 \times 1.732) + 25\% (22) = 46.13$
 51.63 A

For Service Protection
 $IL = (0 \times 1.732) + 150\% (22) = 46.13$
 79.13 A

THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V
 USE 3 - 22 mm² THWN COPPER, 1 - 8 mm² GROUND @ 32 mm # Conduit - RSC

Load Type	VA	FLC			
		AB	BC	CA	3P
LD	0.00	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00	0.00
ACU	0.00	0.00	0.00	0.00	0.00
MOTOR (NC)	1673.11	0.00	0.00	0.00	4.20
MOTOR (C)	13703.58	0.00	0.00	0.00	34.40
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	3000.00	0.00	0.00	0.00	7.53
TOTAL	18376.70	0.00	0.00	0.00	46.13

PANEL BOARD 6F - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{3W}	S _{4W}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
LPB1	C1	Lighting Outlet	16				1	2	1			230	100	1600	5.57	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C2	Lighting Outlet	16				1	2	1			230	100	1600	5.57	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C3	Lighting Outlet	15				2		1			230	100	1500	-	-	5.22	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C4	Lighting Outlet	15				2		1			230	100	1500	-	-	5.22	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C5	Lighting Outlet	9				1		1			230	100	900	-	3.13	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C6	Lighting Outlet	7					2				230	100	700	-	2.43	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C7	Lighting Outlet	21							1		230	100	2100	7.30	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	17	2			5	1	1			230	100	2060	7.17	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C9	Lighting Outlet	15				2		1			230	100	1500	-	-	5.22	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C10	Lighting Outlet	16				4	2		1		230	100	1600	-	-	5.57	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C11	Convenience Outlet and Emergency Light	11									230	180	1980	-	6.89	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C12	Convenience Outlet	11									230	180	1980	-	6.89	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C13	Convenience Outlet and Emergency Light	18									230	180	3240	11.27	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C14	Convenience Outlet and Emergency Light	12									230	180	2160	7.51	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C15	Convenience Outlet and Emergency Light	16									230	180	2880	-	-	10.02	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C16	Convenience Outlet and Emergency Light	18									230	180	3240	-	-	11.27	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C17	Convenience Outlet	12									230	180	2160	-	7.51	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C18	Convenience Outlet	11									230	180	1980	-	6.89	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C19	Convenience Outlet and Emergency Light	7									230	180	1260	4.38	-	-	-	60	2	32	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C20	SPARE										230	1500	1500	5.22	-	-	-	60	2	32			
	C21	SPARE										230	1500	1500	-	-	5.22	-	60	2	32			
	C22	SPARE										230	1500	1500	-	-	5.22	-	60	2	32			
	C23	SPARE										230	1500	1500	-	-	5.22	-	60	2	32			
	C24	SPARE										230	1500	1500	-	-	5.22	-	60	2	32			
TOTAL			263	2	0	0	18	11	7	2	0			43440	53.98	44.17	52.94							

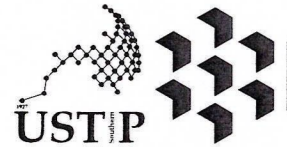
Calculation:

For Service Conductor
 $IL = 53.98 \times 1.732 \times 125\%$
 116.87

For Service Protection
 $IL = 53.98 \times 1.732 \times 125\%$
 116.87

THEREFORE USE 125 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V
 USE 4 - 38 mm² THHN COPPER, 1 - 8 mm² GROUND @ 50 mm # Conduit - PVC

Load Type	VA	FLC			
		AB	BC	CA	3P
LD	15060.00	25.60	5.57	21.22	0.00
CO	20880.00	23.17	28.17	21.29	0.00
ACU	0.00	0.00	0.00	0.00	0.00
MOTOR (NC)	0.00	0.00	0.00	0.00	0.00
MOTOR (C)	0.00	0.00	0.00	0.00	0.00
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	7500.00	5.22	10.43	10.43	0.00
TOTAL	43440.00	53.98	44.17	52.94	0.00



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PROFESSIONAL ELECTRICAL ENGINEER
 PRC NO.:
 PFR NO.:
 DATE:
 PLACE:

PROJECT: CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
 LOCATION: USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
 OWNER: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
 ENGR. GRACE C. BABA
 DIRECTOR, IPFDD

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

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

SHEET CONTENTS:
 SCHEDULE OF LOADS

DRAWN BY:
 DATE DRAWN:
 FNT:



APPROVED BY:

PANEL BOARD LIGHTING 3F - SCHEDULE OF LOADS																						
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT			
							S ₁	S ₂	S ₃	S _{2W}	S _{3W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING	
PBL3	C1	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C2	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C3	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C4	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C5	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C6	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C7	Lighting Outlet	11				1	2			1		230	100	1100	3.83	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	16	1			3	2	1				230	100	1780	6.19	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C9	Lighting Outlet	13				2	2			1		230	100	1300	4.52	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C10	Lighting Outlet	12					1					230	100	1200	4.17	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C11	SPARE											230	1500	1500	5.22	60	2	15			
	C12	SPARE											230	1500	1500	5.22	60	2	15			
TOTAL			142	1	0	0	18	7	7	2	0			17380	60.45							

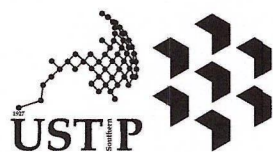
Calculation:	For Service Conductor IL = 60.45 x 125% 75.57	For Service Protection IL = 60.45 x 125% 75.57	THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 30 mm ² THHN COPPER, 1 - 8 mm ² GROUND @ 40 mm # Conduit - PVC
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Load Type	VA	FLC
LD	14380.00	50.02
CD	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	17380.00	60.45

PANEL BOARD LIGHTING 4F - SCHEDULE OF LOADS																						
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT			
							S ₁	S ₂	S ₃	S _{2W}	S _{3W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING	
PBL4	C1	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C2	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C3	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C4	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C5	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C6	Lighting Outlet	15				2		1			230	100	1500	5.22	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C7	Lighting Outlet	11				1	2			1		230	100	1100	3.83	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C8	Lighting Outlet and Exhaust Fan	16	1			3	2	1				230	100	1780	6.19	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C9	Lighting Outlet	13				2	2			1		230	100	1300	4.52	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C10	Lighting Outlet	12					1					230	100	1200	4.17	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C11	SPARE											230	1500	1500	5.22	60	2	15			
	C12	SPARE											230	1500	1500	5.22	60	2	15			
TOTAL			142	1	0	0	18	7	7	2	0			17380	60.45							

Calculation:	For Service Conductor IL = 60.45 x 125% 75.57	For Service Protection IL = 60.45 x 125% 75.57	THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 30 mm ² THHN COPPER, 1 - 8 mm ² GROUND @ 40 mm # Conduit - PVC
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Load Type	VA	FLC
LD	14380.00	50.02
CD	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	17380.00	60.45



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PROFESSIONAL ELECTRICAL ENGINEER
PRC NO.:
PTR NO.:
DATE:
PLACE:

PROJECT
CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III,
VILLANUEVA CAMPUS
LOCATION
USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

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

SHEET CONTENTS:
SCHEDULE OF LOADS

DRAWN BY:
DATE DRAWN:
FNT:

E13

APPROVED BY:

PANEL BOARD LIGHTING 5F - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{3W}	S _{3W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
PBL5	C1	Lighting Outlet	14					3	1			230	100	1400	4.87	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C2	Lighting Outlet	14					3	1			230	100	1400	4.87	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C3	Lighting Outlet	14					2	1			230	100	1400	4.87	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C4	Lighting Outlet	14					2	2			230	100	1400	4.87	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C5	Lighting Outlet	14					2	2			230	100	1400	4.87	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C6	Lighting Outlet	8					2	1	1		230	100	800	2.78	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C7	Lighting Outlet	10					1	1	1	1	230	100	1000	3.48	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C8	Lighting Outlet	16		1			3	2	1		230	100	1780	6.19	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C9	Lighting Outlet	19					2	2		1	230	100	1900	6.61	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C10	Lighting Outlet	12						1			230	100	1200	4.17	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C11	Lighting Outlet	7							1		230	100	700	2.43	60	2	15	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire
	C12	SPARE										230	1500	1500	5.22	60	2	15			
	C13	SPARE										230	1500	1500	5.22	60	2	15			
TOTAL			142	1	0	0	20	14	4	2	0			17380	60.45						

Calculation:

For Service Conductor
IL = 60.45 x 125%
75.57

For Service Protection
IL = 60.45 x 125%
75.57

THEREFORE USE 80 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V
USE 2 - 30 mm² THHN COPPER, 1 - 8 mm² GROUND @ 40 mm ϕ Conduit - PVC

Load Type	VA	FLC
LD	14380.00	50.02
CO	0.00	0.00
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	17380.00	60.45

PANEL BOARD POWER 2F - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{3W}	S _{3W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
PBP2	C1	Convenience Outlet	5								230	180	900	3.13	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C2	Convenience Outlet	7								230	180	1260	4.38	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C3	Convenience Outlet	16								230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C4	Convenience Outlet	16								230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C5	Convenience Outlet	16								230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C6	Convenience Outlet	10								230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C7	Convenience Outlet	11								230	180	1980	6.89	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C8	Convenience Outlet	10								230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C9	Convenience Outlet	10								230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C10	Convenience Outlet	10								230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C11	Convenience Outlet	10								230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C12	Convenience Outlet	14								230	180	2520	8.77	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C13	Convenience Outlet	10								230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C14	Convenience Outlet - Emergency	11								230	180	1980	6.81	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C15	Convenience Outlet - Emergency	12								230	180	2160	7.39	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C16	SPARE									230	1500	1500	5.22	60	2	20				
	C17	SPARE									230	1500	1500	5.22	60	2	20				
TOTAL			0	168	0	0	0	0	0	0			33240	119.22							

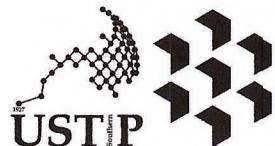
Calculation:

For Service Conductor
IL = 119.22 x 125%
149.02

For Service Protection
IL = 119.22 x 125%
149.02

THEREFORE USE 150 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V
USE 2 - 60 mm² THHN COPPER, 1 - 14 mm² GROUND @ 50 mm ϕ Conduit - PVC

Load Type	VA	FLC
LD	0.00	0.00
CO	30240.00	108.78
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	33240.00	119.22



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PROFESSIONAL ELECTRICAL ENGINEER
PRC NO.:
PTR NO.:
DATE:
PLACE:
TIN NO.:

PROJECT: CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
LOCATION: USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, IPFDO

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

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

SHEET CONTENTS:
SCHEDULE OF LOADS
DRAWN BY:
DATE DRAWN:
PNT:

E14

APPROVED BY:

PANEL BOARD POWER 3F - SCHEDULE OF LOADS																					
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.D.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{3W}	S _{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
PBP3	C1	Convenience Outlet		10							230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C2	Convenience Outlet		16							230	180	2880	10.02	25	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C3	Convenience Outlet		16							230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C4	Convenience Outlet		16							230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C5	Convenience Outlet		10							230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C6	Convenience Outlet		12							230	180	2160	7.51	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C7	Convenience Outlet		9							230	180	1620	5.63	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C8	Convenience Outlet		13							230	180	2340	8.14	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C9	Convenience Outlet		10							230	180	1800	6.26	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C10	Convenience Outlet - Emergency		10							230	180	1800	7.83	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C11	Convenience Outlet - Emergency		12							230	180	2160	9.39	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C12	SPARE									230	1500	1500	5.22	60	2	20				
	C13	SPARE									230	1500	1500	5.22	60	2	20				
TOTAL			0	134	0	0	0	0	0	0			27120	97.77							

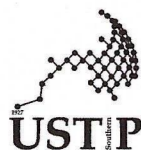
Calculation:	For Service Conductor IL = 97.77 x 125% 122.22	For Service Protection IL = 97.77 x 125% 122.22	THEREFORE USE 125 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 50 mm ² THHN COPPER, 1 - 14 mm ² GROUND @ 50 mm ϕ Conduit - PVC
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Load Type	VA	FLC
LD	0.00	0.00
CO	24120.00	87.34
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	27120.00	97.77

PANEL BOARD POWER 4F - SCHEDULE OF LOADS																					
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.D.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{3W}	S _{4W}					F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING
PBP4	C1	Convenience Outlet		9							230	180	1620	5.63	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C2	Convenience Outlet		8							230	180	1440	5.01	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C3	Convenience Outlet		8							230	180	1440	5.01	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C4	Convenience Outlet		8							230	180	1440	5.01	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C5	Convenience Outlet		9							230	180	1620	5.63	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C6	Convenience Outlet		12							230	180	2160	7.51	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C7	Convenience Outlet		9							230	180	1620	5.63	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C8	Convenience Outlet		13							230	180	2340	8.14	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C9	Convenience Outlet		9							230	180	1620	5.63	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C10	Convenience Outlet - Emergency		10							230	180	1800	7.83	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C11	Convenience Outlet - Emergency		12							230	180	2160	9.39	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm ϕ Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C12	SPARE									230	1500	1500	5.22	60	2	20				
	C13	SPARE									230	1500	1500	5.22	60	2	20				
TOTAL			0	107	0	0	0	0	0	0			22260	80.87							

Calculation:	For Service Conductor IL = 80.87 x 125% 101.09	For Service Protection IL = 80.87 x 125% 101.09	THEREFORE USE 125 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 50 mm ² THHN COPPER, 1 - 14 mm ² GROUND @ 50 mm ϕ Conduit - PVC
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Load Type	VA	FLC
LD	0.00	0.00
CO	19260.00	70.43
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	22260.00	80.87



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PROFESSIONAL ELECTRICAL ENGINEER
PRC NO.:
PTR NO.:
DATE:
PLACE:
TIN NO.:

PROJECT
CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III,
VILLANUEVA CAMPUS
LOCATION
USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, IPFDD

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

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

SHEET CONTENTS:
SCHEDULE OF LOADS

DRAWN BY:
DATE DRAWN:
FNT:

E15

APPROVED BY:

PANEL BOARD POWER 5F - SCHEDULE OF LOADS																					
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)	SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{SW}	S _{SW}					F	P	T	WIRE (sq. mm)		CONDUIT
PBP5	C1	Convenience Outlet		13							230	180	2340	8.14	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C2	Convenience Outlet		16							230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C3	Convenience Outlet		14							230	180	2520	8.77	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C4	Convenience Outlet		15							230	180	2700	9.39	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C5	Convenience Outlet		16							230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C6	Convenience Outlet		18							230	180	3240	11.27	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C7	Convenience Outlet		16							230	180	2880	10.02	60	2	25	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C8	Convenience Outlet		5							230	180	900	3.13	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C9	Convenience Outlet		11							230	180	1980	6.89	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C10	Convenience Outlet		13							230	180	2340	8.14	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C11	Convenience Outlet		9							230	180	1620	5.63	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C12	Refrigerator 1				1					230	1500	1500	6.52	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C13	Refrigerator 2				1					230	1500	1500	6.52	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C14	Convenience Outlet - Emergency			9						230	180	1620	7.04	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C15	Convenience Outlet - Emergency			12						230	180	2160	9.39	60	2	20	2 - 3.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 3.5 mm ² THHN Copper Wire	
	C16	SPARE									230	1500	1500	5.22	60	2	20				
	C17	SPARE									230	1500	1500	5.22	60	2	20				
TOTAL			0	167	2	0	0	0	0	0			36060	131.32							

Calculation:	For Service Conductor IL = 131.32 x 125% 164.15	For Service Protection IL = 131.32 x 125% 164.15	THEREFORE USE 175 AMPERE CIRCUIT BREAKER, 1 PHASE, 230V USE 2 - 80 mm ² THHN COPPER, 1 - 14 mm ² GROUND @ 50 mm # Conduit - PVC
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Load Type	VA	FLC
LD	0.00	0.00
CO	33060.00	120.89
ACU	0.00	0.00
MOTOR (NC)	0.00	0.00
MOTOR (C)	0.00	0.00
LARGEST MOTOR	0.00	0.00
SPARE	3000.00	10.43
TOTAL	36060.00	131.32

MOTOR PANEL 6F - SCHEDULE OF LOADS																								
PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT		
							S ₁	S ₂	S ₃	S _{SW}	S _{SW}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)		CONDUIT
MP6F	C1	ACCU-1-01				5					230	6440	6440	28.00					60	2	70	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C2	ACCU-1-02				3					230	3910	3910	17.00					60	2	50	2 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C3	ACCU-1-02				3					230	3910	3910	17.00					60	2	50	2 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C4	ACCU-1-02				3					230	3910	3910	17.00					60	2	50	2 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C5	ACCU-1-02				3					230	3910	3910	17.00					60	2	50	2 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C6	ACCU-1-03				4					230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C7	ACCU-1-03				4					230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C8	ACCU-1-04				4					230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C9	ACCU-1-04				4					230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C10	ACCU-1-05				4					230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C11	ACCU-1-05				4					230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C12	ACCU-1-06				1.5					230	2300	2300	10.00					60	2	25	2 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C13	ACCU-1-07				3					230	3910	3910	17.00					60	2	50	2 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C14	Plumbing Transfer Pump - Main				4					230	4939.664	4939.664	21.40					60	3	30	3 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C15	Plumbing Transfer Pump - Backup				1					230	1673.112	1673.112	7.40					60	3	20	3 - 5.5 mm ² THHN Copper Wire	20 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C16	Jockey Pump				7.5					230	8763.92	8763.92	39.00					60	3	60	3 - 8.0 mm ² THHN Copper Wire	25 mm # Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C17	SPARE									230	1500	1500	5.22					60	2	20			
	C18	SPARE									230	1500	1500	5.22					60	2	20			
TOTAL			0	0	0	58	0	0	0	0			77716.696	107.00										

Calculation:	For Service Conductor IL = (107 + 25% (28)) x 1.732 + 38.6 236.05 A	For Service Protection IL = (107 + 150% (28)) x 1.732 + 38.6 296.68 A	THEREFORE USE 300 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V USE 3 - 150 mm ² THHN COPPER, 1 - 22 mm ² GROUND @ 75 mm # Conduit - PVC
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Load Type	VA	FLC			
		AB	BC	CA	3P
LD	0.00	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00	0.00
ACU	59340.00	107.00	79.00	72.00	0.00
MOTOR (NC)	1673.11	0.00	0.00	0.00	4.20
MOTOR (C)	13703.58	0.00	0.00	0.00	34.40
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	3000.00	0.00	5.22	5.22	0.00
TOTAL	77716.70	107.00	84.22	77.22	38.60



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PROFESSIONAL ELECTRICAL ENGINEER
PRC NO.:
PTR NO.:
DATE:
TIN NO.:
PLACE:

PROJECT
LOCATION
OWNER
CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III,
VILLANUEVA CAMPUS
USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL
ENGR. GRACE C. BABA
DIRECTOR, IPFDD

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

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

SHEET CONTENTS:
SCHEDULE OF LOADS

DRAWN BY:
DATE DRAWN:
FMT:

E16

APPROVED BY:

MOTOR PANEL GF - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT			
							S ₁	S ₂	S ₃	S _{3W}	S _{3W}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING	
MPGF	C1	ACCU-1-01				3						230	3910	3910	17.00					60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C2	ACCU-1-02				3						230	3910	3910	17.00					60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C3	ACCU-1-02				3						230	3910	3910			17.00			60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C4	ACCU-1-02				3						230	3910	3910			17.00			60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C5	ACCU-1-02				3						230	3910	3910		17.00				60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C6	ACCU-1-03				3						230	3910	3910		17.00				60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C7	ACCU-1-03				3						230	3910	3910	17.00					60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C8	ACCU-1-04				3						230	3910	3910	17.00					60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C9	ACCU-1-04				3						230	3910	3910			17.00			60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C10	ACCU-1-05				3						230	3910	3910			17.00			60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C11	ACCU-1-05				3						230	3910	3910		17.00				60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C12	ACCU-1-06				2.5						230	3335	3335		14.50				60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C13	ACCU-1-07				1						230	1840	1840	8.00					60	2	32	2 - 5.5 mm ² THHN Copper Wire	32 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C14	SPARE										230	1500	1500	5.22					60	2	32			
	C15	SPARE										230	1500	1500			5.22			60	2	32			
TOTAL			0	0	0	36.5	0	0	0	0	0			51185	81.22	65.50	73.22	0.00							

Calculation:

For Service Conductor
 $IL = (81.22 + 25\% (17)) \times 1.732 = 0$
 148.03 A

For Service Protection
 $IL = (81.22 + 150\% (17)) \times 1.732 = 0$
 184.84 A

THEREFORE USE 200 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V
 USE 2 SETS OF 4 - 38 mm² THHN COPPER, 1 - 8 mm² GROUND @ 50 mm Ø Conduit - PVC

Load Type	VA	FLC			
		AB	BC	CA	3P
LD	0.00	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00	0.00
ACU	48185.00	76.00	65.50	68.00	0.00
MOTOR (NC)	0.00	0.00	0.00	0.00	0.00
MOTOR (C)	0.00	0.00	0.00	0.00	0.00
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	3000.00	5.22	0.00	5.22	0.00
TOTAL	51185.00	81.22	65.50	73.22	0.00

PANEL BOARD ACU 2F - SCHEDULE OF LOADS

PANEL NO.	CKT NO.	LOAD DESCRIPTION	L.O.	C.O.	OTHER LOADS	HP RATING	SWITCHES					VOLTAGE RATING	OUTLET (VA) RATING	VA PER CIRCUIT	CIRCUIT LOAD CURRENT (W/DF)				SIZE OF BREAKERS			SIZE OF HOMERUN CKT			
							S ₁	S ₂	S ₃	S _{3W}	S _{3W}				AB	BC	CA	3P	F	P	T	WIRE (sq. mm)	CONDUIT	GROUNDING	
PBA2	C1	ACCU-2-01				1						230	1840	1840	8.00					60	2	20	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C2	ACCU-2-02				2.5						230	3335	3335	14.50					60	2	40	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C3	ACCU-2-02				1						230	3335	3335			14.50			60	2	40	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C4	ACCU-2-02				1						230	3335	3335			14.50			60	2	40	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C5	ACCU-2-02				1						230	3335	3335		14.50				60	2	40	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C6	ACCU-2-03				1						230	5175	5175			22.50			60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C7	ACCU-2-03				1						230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C8	ACCU-2-04				1						230	5175	5175	22.50					60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C9	ACCU-2-04				1						230	5175	5175			22.50			60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C10	ACCU-2-05				1						230	5175	5175			22.50			60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C11	ACCU-2-05				1						230	5175	5175			22.50			60	2	60	2 - 8.0 mm ² THHN Copper Wire	25 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C12	ACCU-2-06				1						230	2760	2760						60	2	30	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C13	ACCU-2-06				1						230	2760	2760	12.00					60	2	30	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C14	ACCU-2-07				1						230	3335	3335	14.50					60	2	30	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C15	ACCU-2-08				1						230	3335	3335			14.50			60	2	40	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C16	ACCU-2-08				1						230	3335	3335			14.50			60	2	40	2 - 5.5 mm ² THHN Copper Wire	20 mm Ø Conduit - PVC	1 - 5.5 mm ² THHN Copper Wire
	C17	SPARE										230	1500	1500				5.22		60	2	20			
	C18	SPARE										230	1500	1500				5.22		60	2	20			
TOTAL			0	0	16	46.5	0	0	0	0	0			64755	94.00	81.93	103.00	0.00							

Calculation:

For Service Conductor
 $IL = (103 + 25\% (22.5)) \times 1.732 = 0$
 188.14 A

For Service Protection
 $IL = (103 + 150\% (22.5)) \times 1.732 = 0$
 236.86 A

THEREFORE USE 250 AMPERE CIRCUIT BREAKER, 3 PHASE, 230V
 USE 4 - 100 mm² THHN COPPER, 1 - 22 mm² GROUND @ 75 mm Ø Conduit - PVC

Load Type	VA	FLC			
		AB	BC	CA	3P
LD	0.00	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00	0.00
ACU	61755.00	94.00	71.50	103.00	0.00
MOTOR (NC)	0.00	0.00	0.00	0.00	0.00
MOTOR (C)	0.00	0.00	0.00	0.00	0.00
LARGEST MOTOR	0.00	0.00	0.00	0.00	0.00
SPARE	3000.00	0.00	10.43	0.00	0.00
TOTAL	64755.00	94.00	81.93	103.00	0.00



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PROFESSIONAL ELECTRICAL ENGINEER
 PRC NO.: _____ PTR NO.: _____
 DATE: _____ PLACE: _____
 TIN NO. _____

PROJECT
 LOCATION
 OWNER

CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III,
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SHEET CONTENTS:
 SCHEDULE OF LOADS

DRAWN BY:
 DATE DRAWN:
 FNT:

E17