

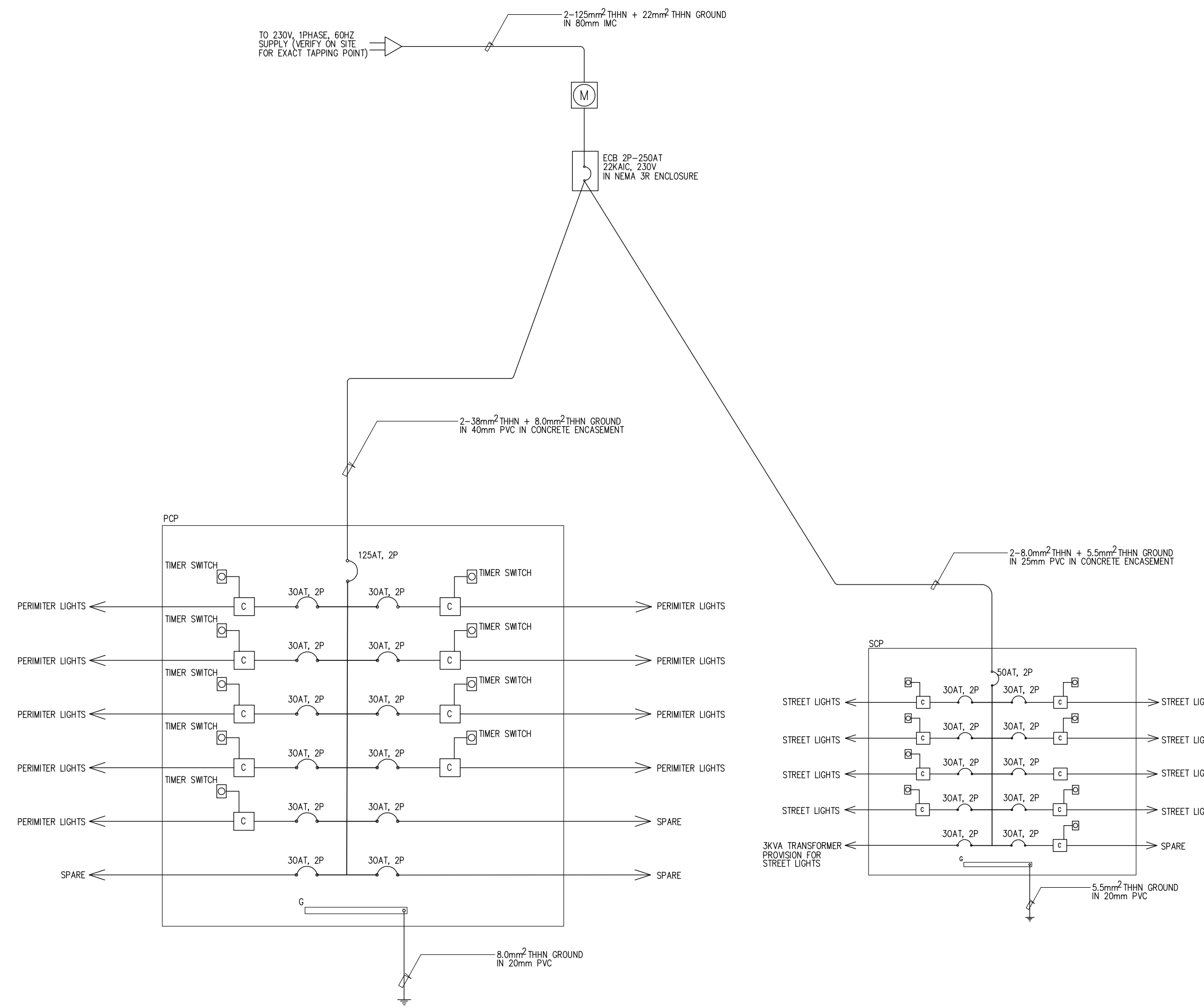
# GENERAL NOTES

- ALL ELECTRICAL WORKS HEREIN SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE RULES AND REGULATIONS OF THE LOCAL ENFORCING AUTHORITY AND THE REQUIREMENTS OF THE LOCAL POWER, TELEPHONE & CATV COMPANIES.
- ALL ELECTRICAL WORKS HEREIN SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A DULY LICENSED ELECTRICAL ENGINEER.
- THE POWER SERVICE VOLTAGE FOR STREET LIGHTING SYSTEM SHALL BE 230V, SINGLE PHASE, 60Hz.
- ALL ELECTRICAL ITEMS INDICATED ON THE DRAWINGS ARE NEW AND SHALL BE PROVIDED BY THE CONTRACTOR UNLESS INDICATED "EXISTING" OR AS OTHERWISE NOTED.
- ALL WIRES SHALL BE COPPER & THERMOPLASTIC INSULATED TYPE "THHN/THWN" UNLESS OTHERWISE INDICATED IN THE PLANS AND SHALL BE MANUFACTURED BY PHELPS DODGE OR APPROVE EQUAL. CONDUCTOR INSULATION COLOR SHALL BE AS FOLLOWS:  
PHASE A - RED  
PHASE B - BLUE  
GROUND - GREEN
- IMC, RSC AND ENT PIPES SHALL BE BENDS USING HYDRAULIC BENDERS, MINIMUM BENDING RADIUS SHALL BE AS PER CODE REQUIREMENTS.
- EACH LAMP POST SHALL BE GROUNDED BY MEANS OF 22mm<sup>2</sup> MEDIUM DRAWN BARE COPPER WIRE, AND SHALL BE LOOPED UNDER THE FOOTING OF THE STREET LIGHT CONCRETE PEDESTAL.
- WIRING SYSTEM INSTALLATION SHALL BE DONE IN POLYVINYL CHLORIDE (PVC) CONDUIT, SCHEDULE 40. MINIMUM SIZE FOR UPVC SHALL BE 20mm DIAMETER ELECTRICAL TRADE SIZE. MELTEX, EMERALD OR APPROVED EQUAL BRAND SHALL BE USED. WHERE IN CONDUIT MAY BE SUBJECT MECHANICAL DAMAGE, RIGID STEEL CONDUIT (RSC) SHALL BE USED, SMARTUBE, PANASONIC OR APPROVED EQUAL.
- EXPOSED INSTALLATION OF CONDUITS SHALL BE SUPPORTED AND SECURED BY MEANS OF C-CHANNELS AND CLAMP OR BY U-BOLT.
- ALL ELECTRICAL EQUIPMENT SHALL BE NEW AND WARRANTED BY THE MANUFACTURER.
- ALL MATERIALS SHALL BE NEW, APPROVED FROM BOTH LOCATION AND PURPOSED INTENDED AND SHALL CONFORM TO THE INTERNATIONALLY ACCREDITED RECOGNIZED STANDARD, ON WHERE SUCH STANDARD HAS BEEN ESTABLISHED FOR PARTICULAR TYPES OF MATERIALS.
- PULLBOXES SHALL BE PROVIDED EVEN IF NOT INDICATED ON THE PLANS IF THE FIELD CONDITIONS REQUIRES AND SHALL BE ACCORDING TO CODE REQUIREMENT.
- PRIOR TO INSTALLING ANY ELECTRICAL ITEM, VERIFY ITS FINAL LOCATION. COORDINATE AND ADJUST LOCATIONS AS REQUIRED.
- ALL STREET LUMINAIRE ASSEMBLY INCLUDING POLE AND FOUNDATION SHALL WITHSTAND WINDS UP TO 250 KPH PER HOUR, GUSTING, WITHOUT PERMANENT DEFORMATION.
- THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF SERVICE ENTRANCE FOR CONNECTION TO THE POWER SUPPLY.
- ALL CIRCUIT BREAKER SHALL BE UL LISTED AS SMD (SWITCHING DUTY) SUITABLE FOR HIGH INITIAL INRUSH CURRENT FOR SWITCHING THE PRESSURE SODIUM LUMINAIRES, SQUARE D, GE OR APPROVED EQUAL SHALL BE USED.
- JUNCTION, PULLBOXES AND ENCLOSED CIRCUIT BREAKERS SHALL BE GAUGE 16 FOR INDOOR AND GAUGE 14 STEEL SHEET WEATHERPROOF (NEMA 3R) TYPE FOR EXTERIOR INSTALLATION UNLESS OTHERWISE INDICATED TO BE STAINLESS STEEL NEMA 4X TYPE.
- ANY DISCREPANCY IN LOCATION AND RATINGS OF EQUIPMENT AND APPARATUS SHALL BE VERIFIED WITH THE OWNER/ENGINEER OR ANY OF HIS REPRESENTATIVES SO CHANGES SHALL BE MADE ACCORDINGLY.
- UPON COMPLETION OF ELECTRICAL CONSTRUCTION WORK, THE FOLLOWING TESTS SHALL BE PERFORMED BY THE CONTRACTOR INCLUSIVE OF THE INSTALLATION TO BE REPORTED IN DETAILS AND IN FORMS APPROVED BY THE OWNER'S REPRESENTATIVE:  
A. INSULATION RESISTANCE TEST  
B. GROUND RESISTANCE TEST  
C. OPERATIONAL TEST

## LEGEND:

- 90W LED STREET LIGHT, 7900 LUMENS (MINIMUM) 230V, 60HZ MOUNTED ON 6 METERS STEEL POLE AND 1.5 METERS OUTREACH
- CIRCUIT HOME RUN
- KHWR METER
- 30A LIGHTING CONTACTOR
- TIMER SWITCH
- OVERHEAD COMMUNICATION LINES
- 8-110MM PVC PIPE WITH PULLWIRE (PRIMARY LINES) IN CONCRETE ENCASUREMENT (TRAFFIC TYPE)
- 4-110MM PVC PIPE WITH PULLWIRE IN CONCRETE ENCASUREMENT (TRAFFIC TYPE) FOR TELEPHONE AND CATV LINES
- CONDUIT STUB-OUT
- ELECTRICAL MANHOLE
- AUXILIARY HAND HOLE

# APPENDIX E



**1**  
E-1  
SCALE  
POWER DIAGRAM  
NTS

MAIN CIRCUIT BREAKER: 2P-125AT/250AF  
KAIC RATING: 22KAIC  
MAIN WIRES: 2-38mm<sup>2</sup> THHN + 1-8.0mm<sup>2</sup> THHN GROUND  
MAIN CONDUIT: 40mm DIA. RSC CONDUIT

COMPUTATION: I<sub>b</sub> = 95.17 AMPS

CIRCUIT NO.	LOAD DESCRIPTION	VOLTAGE	AMPERE	VOLT-AMPERE	CIRCUIT BREAKER			WIRES		CONDUIT	
					P	A	AF	KAIC	PHASE	GROUND	TYPE
1	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.00	2300	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
2	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.00	2300	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
3	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.86	2500	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
4	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.43	2400	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
5	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.43	2400	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
6	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	5.65	1300	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
7	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.43	2400	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
8	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.43	2400	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
9	PERIMETER LIGHTS (VA 30A CONTACTOR & TIMER SWITCH)	230	10.43	2400	2	30	100	10	2-14mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 32 PVC
10	SPARE	230	2.17	500	2	30	100	10			
11	SPARE	230	2.17	500	2	30	100	10			
12	SPARE	230	2.17	500	2	30	100	10			
TOTAL				21900							

MAIN CIRCUIT BREAKER: 2P-50AT/250AF  
KAIC RATING: 10KAIC  
MAIN WIRES: 2-38mm<sup>2</sup> THHN + 1-5.5mm<sup>2</sup> THHN GROUND  
MAIN CONDUIT: 25mm DIA. IMC CONDUIT

COMPUTATION: I<sub>b</sub> = 34.04 AMPS

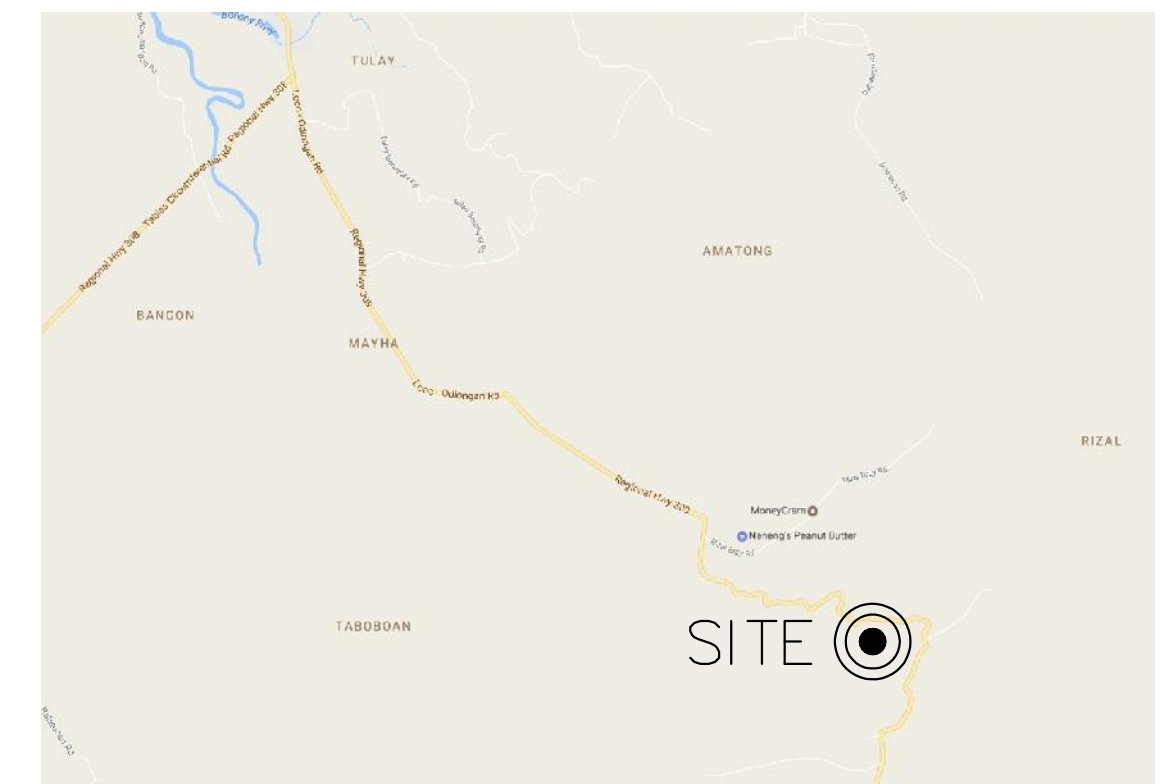
CIRCUIT NO.	LOAD DESCRIPTION	VOLTAGE	AMPERE	VOLT-AMPERE	CIRCUIT BREAKER			WIRES		CONDUIT	
					P	A	AF	KAIC	PHASE	GROUND	TYPE
1	STREET LIGHTS	230	2.35	540	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
2	STREET LIGHTS	230	2.35	540	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
3	STREET LIGHTS	230	2.35	540	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
4	STREET LIGHTS	230	2.35	540	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
5	STREET LIGHTS	230	2.74	630	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
6	STREET LIGHTS	230	2.17	500	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
7	STREET LIGHTS	230	2.35	540	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
8	STREET LIGHTS	230	2.17	500	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
9	PROVISION FOR 3KVA TRANSFORMER	230	13.04	3000	2	30	100	10	2-8.0mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 32 PVC
10	SPARE	230	2.17	500	2	30	100	10			
TOTAL				7830							

MAIN CIRCUIT BREAKER: 2P-200AT/250AF  
KAIC RATING: 10KAIC  
MAIN WIRES: 2-38mm<sup>2</sup> THHN + 1-14mm<sup>2</sup> THHN GROUND  
MAIN CONDUIT: 65mm DIA. PVC CONDUIT

COMPUTATION: I<sub>b</sub> = 129.21 AMPS

CIRCUIT NO.	LOAD DESCRIPTION	VOLTAGE	AMPERE	VOLT-AMPERE	CIRCUIT BREAKER			WIRES		CONDUIT	
					P	A	AF	KAIC	PHASE	GROUND	TYPE
1	PCP	230	95.17	21900	2P-	LUGS ONLY	2P-	38mm <sup>2</sup>	1-8.0mm <sup>2</sup>	THHN 40 PVC	
2	SCP	230	34.04	7830	2P-	LUGS ONLY	2P-	38mm <sup>2</sup>	1-5.5mm <sup>2</sup>	THHN 25 PVC	
TOTAL				29730							

**2**  
E-1  
SCALE  
LOAD SCHEDULE  
NTS



**3**  
E-1  
SCALE  
VICINITY MAP  
NTS

**FOR CONSTRUCTION**

MELISA R. RAMIREZ  
AUTHORIZED MANAGER OFFICER DATE



ENGINEER:

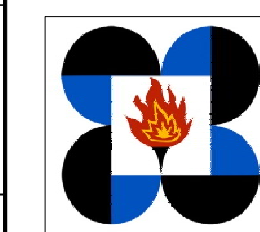
ARMANDO S. CALAGUAS  
PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.:	2375	ISSUED ON:	09-24-90
PTR NO.:	2353110	ISSUED ON:	01-03-17
TIN NO.:	146-594-412	ISSUED AT:	QUEZON CITY

PROJECT TITLE:

SITE DEVELOPMENT  
(Development of Campus Master Plan, Construction of Road Network)

LOCATION: MIMAROPA REGION CAMPUS ODIONGAN, ROMBLON



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
PHILIPPINE SCIENCE HIGH SCHOOL  
MIMAROPA REGION CAMPUS  
BRGY. RIZAL, ODIONGAN, ROMBLON

APPROVED:

EDWARD C. ALBARACIN  
CAMPUS DIRECTOR

DESIGNED BY: ACE	05/19/17	REVISIONS	
ENCODED BY: ACE	05/19/17		
CHECKED BY: ASC	05/19/17		
APPROVED BY: ASC	05/19/17		
DATE ISSUED: 06/01/17			
SCALE: AS SHOWN			
PROJECT NO.:	RBR_SD122916-RBRA-PSM-D-004		

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