# GENERAL NOTES AND SPECIFICATIONS:

1. ALL WORK HEREIN SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. ELECTRICAL WORKS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, MUNICIPAL/CITY LAWS AND ORDINANCES AND THE REGULATIONS FO THE LOCAL POWER AND TELEPHONE COMPANY.
3. THE JOB SHALL BE EXECUTED IN THE MOST THOROUGH PROMPT AND WORKMANLIKE MANNER EMPLOYING STANDARD TOOLS, EQUIPMENT, METHODS AND GOOD ENGINEERING PRACTICE. THE JOB SHALL BE DONE IN ALL ASPECTS AS REQUIRED PER PLANS AND SPECIFICATIONS AND READY FOR OPERATION.
4. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO PERSENT A GENERAL LAYOUT AND BROAD OUTLINE/DESCRIPTION OF THE PROJECT, BUT DO NOT NECESSARILY INDICATE OR DESCRIBE ACTUAL LOCATIONS, LEVELS AND DISTANCES OF THE EQUIPMENT. THE CONTRACTOR IS HEREBY REQUIRED TO MAKE SUCH ADJUSTMENTS AT THE JOBSITE THAT ARE GOVERNED BY ACTUAL FIELD CONDITION.
5. SERVICE VOLTAGE TO THE BUILDING FROM THE POWER SOURCE SHALL BE 230V.
6. SERVICE ENTRANCE WIRING SHALL BE RIGID STEEL CONDUIT (RSC).
7. FEEDER WIRING SHALL BE ELECTRICAL METALLIC TUBING (EMT).
8. BRANCH CIRCUIT WIRING ELECTRICAL METALLIC TUBING (EMT).
9. BRANCH CIRCUIT WIRING EMBEDDED IN CONCRETE SHALL BE IN PVC PIPE WITH ADEQUATE GROUND WIRE FOR EQUIPMENT GROUNDING.
10. LIGHT SWITCHES SHALL BE 15A, 230VAC.
11. ALL MATERIALS SHALL BE BRAND NEW AND OF APPROVED TYPE FOR LOCATION AND PURPOSE INTENDED.
12. DEVICES, FIXTURES LOCATED OUTDOOR SHALL BE WEATHERPROOF TYPE.
13. MOUNTING HEIGHTS ARE:

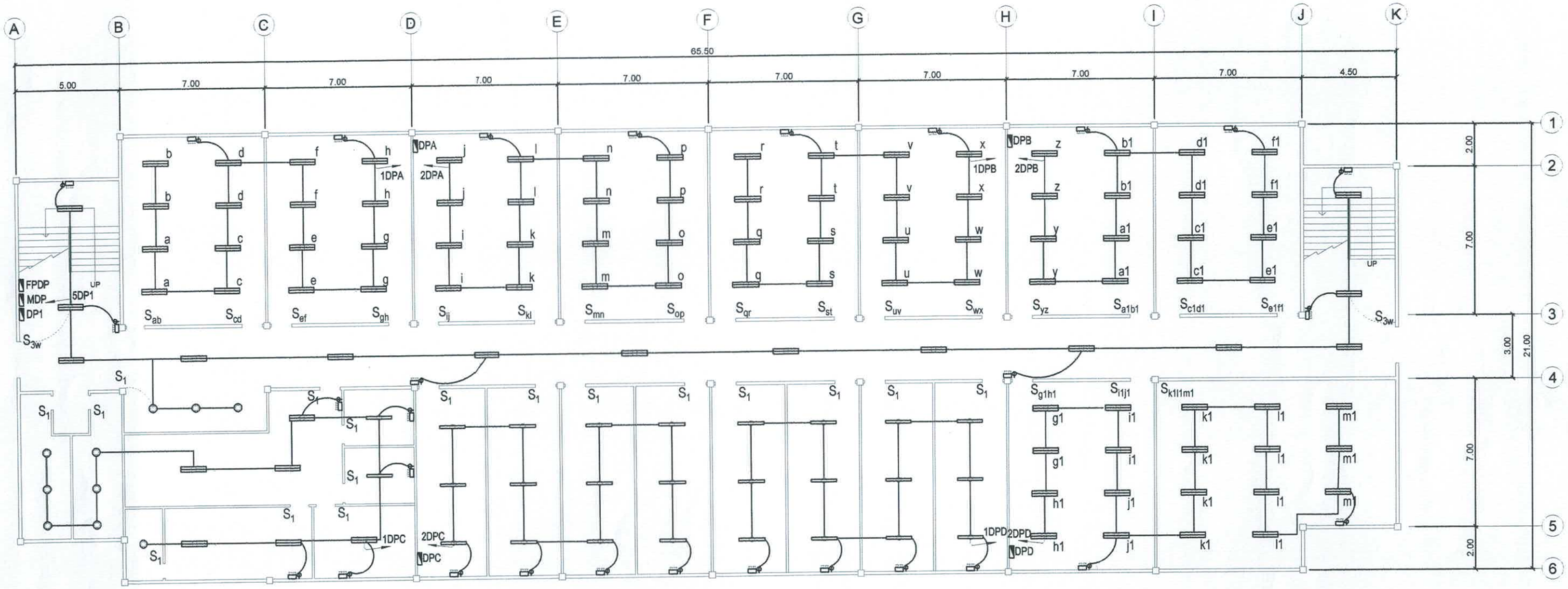
| | | |
|---|---|---|
| A. | LIGHT SWITCHES | 1.40M ABOVE FLOOR FINISH |
| B. | CONVENIENCE OUTLETS | 0.30M ABOVE FLOOR FINISH |
| C. | COUNTER TOP C.O, | 0.40M TO .50M ABOVE THE COUNTER |
| D. | TELEPHONE OUTLETS | 0.30M ABOVE FLOOR FINISH |
| E. | PANEL BOARD | 1.50M ABOVE FLOOR FINISH |
| F. | EMERGENCY LIGHT | 0.30M BELOW CEILING LINE |

14. ANY DISCREPANCY BETWEEN THE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR DECISION.
15. THE ENTIRE WORK SHALL BE DONE UNDER THE DIRECT SUPERVISION OF DULY REGISTERED ELECTRICAL ENGINEER.
16. REFER TO SHEETS E-2 TO E-4 FOR EXACT NUMBER AND LOCATION OF DEVICES/EQUIPMENT FOR ELECTRICAL SYSTEM. ANY CONFLICT ON QUANTITY AND/OR LAYOUT MUST BE VERIFIED AND CONFIRMED TO DESIGNER/CONSULTANT.
17. REFER TO LOAD SCHEDULE FOR THE RATING OF INDIVIDUAL ENCL, ACB'S IN NEMA-3R.
18. ALL ELECTRICAL CONDUITS AND TELEPHONE SERVICE ENTRANCE THAT INSTALLED BELOW THE GROUND SHALL BE IN CONCRETE ENCASEMENT.
19. ANY DEVICES OR EQUIPMENT NOT REFLECTED OR SHOWN ON PLANS BUT REQUIRED TO COMPLETE THE SYSTEM MUST BE INCLUDED ON SCOPE OF WORK.
20. REQUEST FOR TEMPORARY POWER INTERRUPTION SHOULD BE COORDINATED TO OWNER'S REPRESENTATIVE OR DESIGNER.
21. THE SIZE OF GENERATOR IS 40% OF THE TOTAL VA LOAD. THIS IS INTENDED TO SUPPLY ELECTRIC POWER FOR LIGHTINGS AND OTHER IMPORTANT APPLIANCES DURING THE POWER INTERRUPTION OF MAIN POWER SOURCE.

## LEGEND AND SYMBOLS :

| | | | |
|---|---|---|---|
| ○ | LED DOWNLIGHT, VERTICAL RECESSED, ROUND 12W w/ 6" CASING FIXTURE | | CIRCUIT BREAKER WITH NEMA 3R METAL ENCLOSURE |
| | 1-9W LED TUBE LIGHT WITH DIFFUSER, 2 FT. LENGTH (FL) | 18 AC CONDENSER | ACU CONDENSER OUT DOOR UNIT WITH NEMA 3R CIRCUIT BREAKER |
| | 2-9W LED TUBE LIGHT WITH DIFFUSER, 2 FT. LENGTH (FL) | 16 | ACU WALL/FLOOR MOUNTED, SPLIT TYPE, INDOOR UNIT |
| | 1-18W LED TUBE LIGHT WITH DIFFUSER, 4 FT. LENGTH (FL) | | 2.0 mm² THHN |
| | 2-18W LED TUBE LIGHT WITH DIFFUSER, 4 FT. LENGTH (FL) | | 3.5 mm² THHN |
| | EMERGENCY LIGHT (EL) | | CIRCUIT HOMERUN |
| $S_1$, $S_A$ | ONE GANG SWITCH | 1LPP1 | CIRCUIT NUMBER |
| $S_2$, $S_{AB}$ | TWO GANG SWITCH | | PANEL BOARD |
| $S_3$ | THREE GANG SWITCH | | SERVICE ENTRANCE |
| $S_{3W}$, $S_{a3W}$ | THREE WAY SWITCH | M | KILOWATT HOUR METER |
| | TWO GANG CONVENIENCE OUTLET | | CONCRETE ENCASEMENT |
| $_{wp}$ | WEATHER-PROOF TWO GANG CONVENIENCE OUTLET | | CABLE CHAMBER |
| | TWO GANG CONVENIENCE OUTLET (FLOOR MOUNTED) | | DISTRIBUTION TRANSFORMER |
| $_{spo}$ , $_{spo}$ | TWO GANG SPECIAL POWER OUTLET TWO GANG SPECIAL POWER OUTLET (FLOOR MOUNTED) | | PRIMARY CONCRETE POLE |
| | THREE PIN ACU OUTLET | | SERVICE ENTRANCE PEDESTAL WITH DISCONNECTING SWITCH |
| A.C. | ACU WINDOW TYPE | 3 | SECONDARY LINE |

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ PDU / OVPPD | R. M. CAJIGAL CAMPUS ADMINISTRATOR / CVSU BACOOR | R. P. PEÑA PROF. ELEC. ENGINEER | S. B. BAYOT JR. HEAD / PDU | O. B. DELOS REYES DIRECTOR / PLANNING AND DEVT. OFFICE | M. J. D. TEPORA VPPD / CVSU | J. X. B. NEPOMUCENO VPASS / CVSU | H. D. ROBLES PRES / CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS — CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 1 |

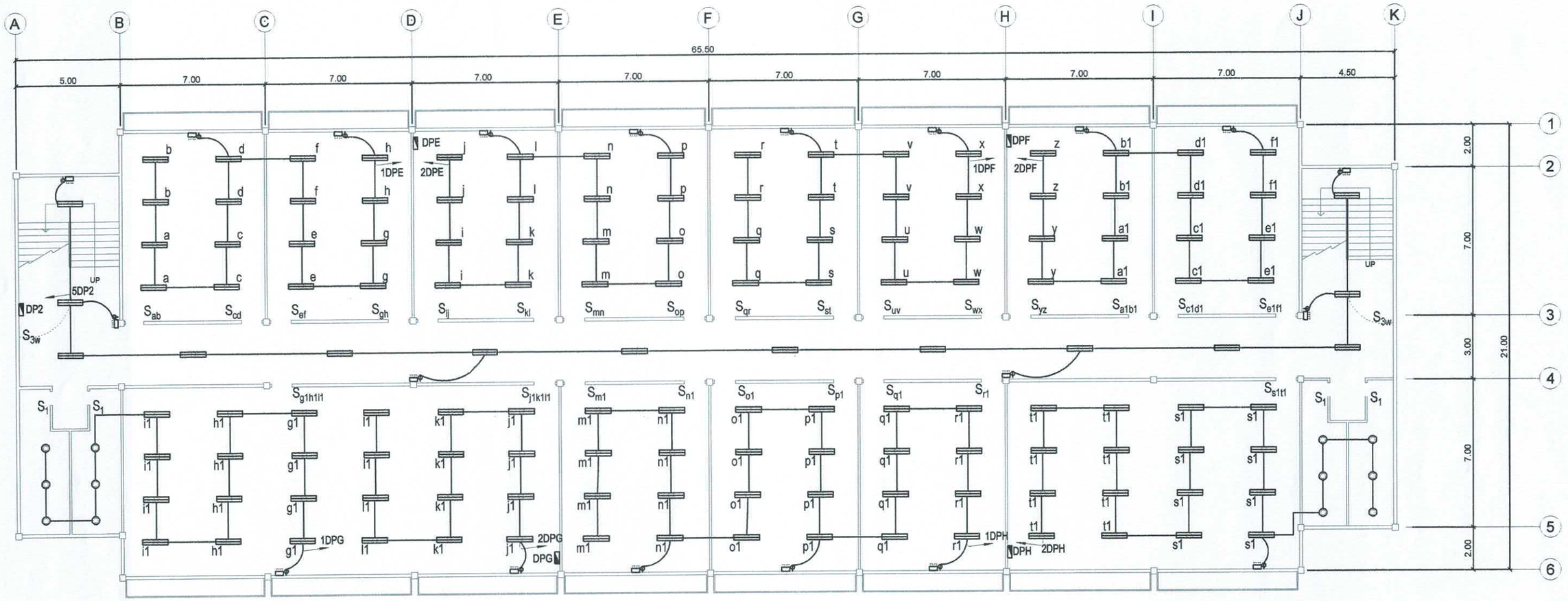



# GROUND FLOOR LIGHTING LAYOUT

E 2 | 1

SCALE 1 : 200 MTS.

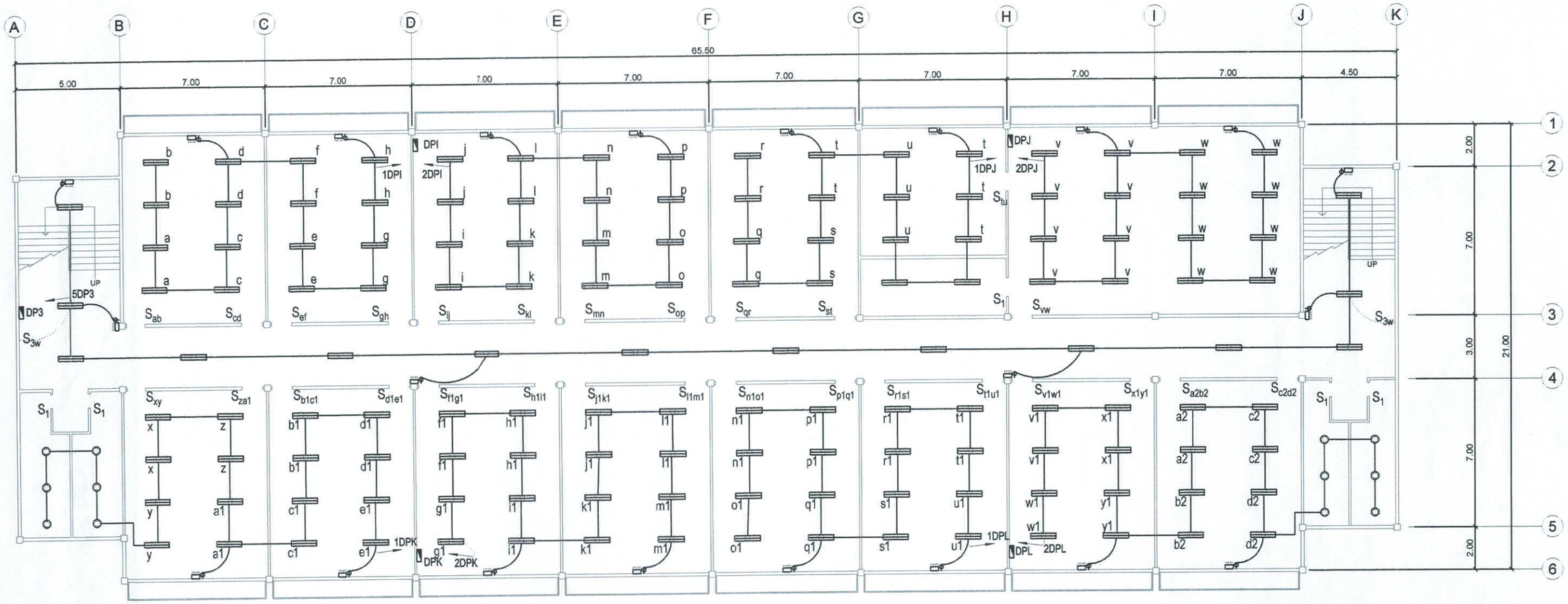
| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CVSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NERI-MUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 2 |




# 1 / E 3 SECOND FLOOR LIGHTING LAYOUT

SCALE 1 : 200 MTS.

| | PREPARED BY: | END USER: | REVIEWED BY: | ENDORSED BY: | REC. APPROVAL: | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|
| | R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R.V.P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. ITEPORA<br>VPPD CVSU<br>J. X. B. NEPOMUCENO<br>VPAS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 3 |

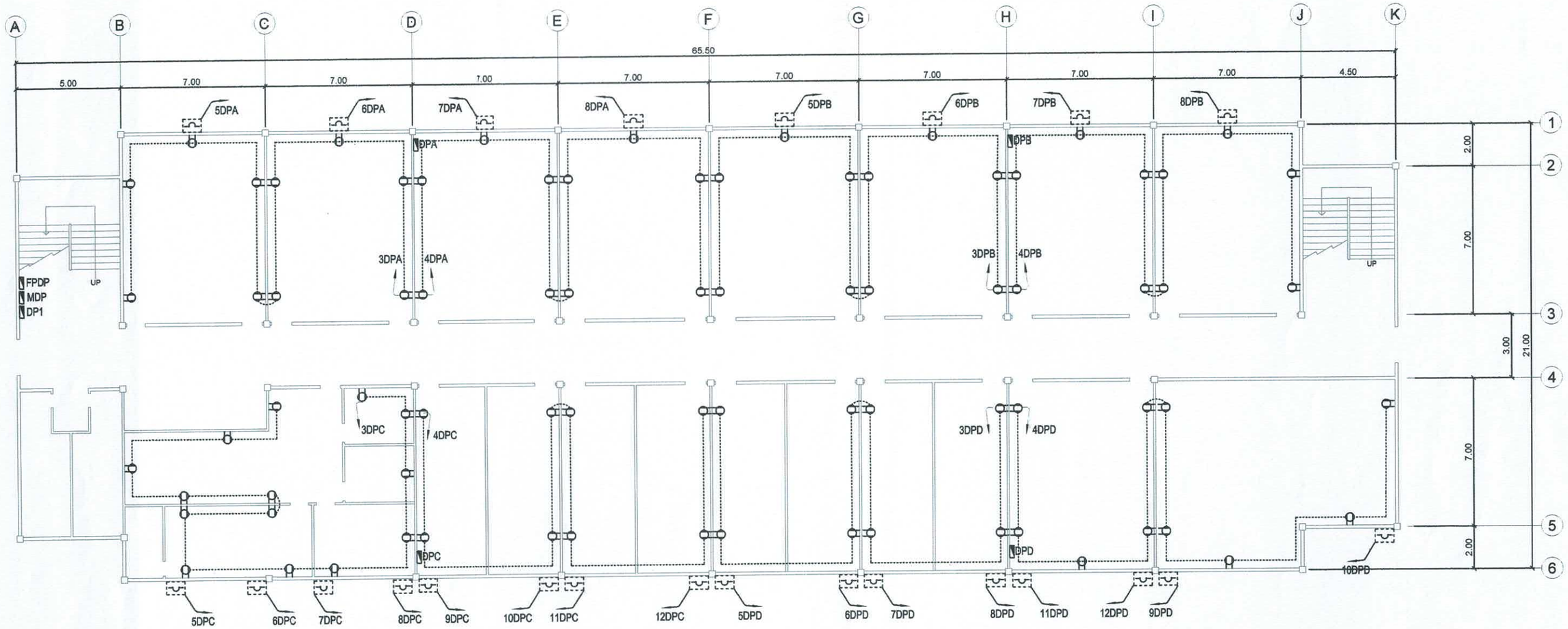



# THIRD FLOOR LIGHTING LAYOUT

1 / E 4

SCALE 1 : 200 MTS.

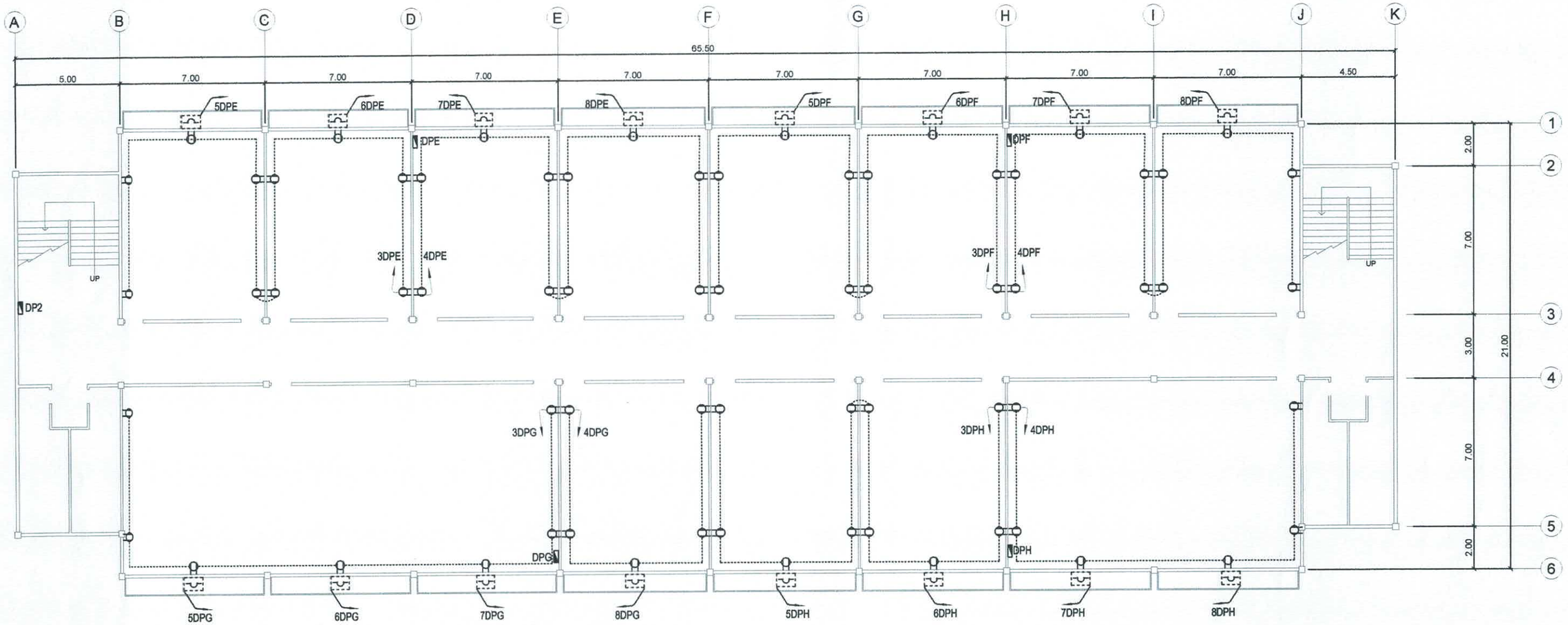
| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>RDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CVSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD RDU | Q. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 4 |




1 / E5 GROUND FLOOR POWER LAYOUT

SCALE 1 : 200 MTS.

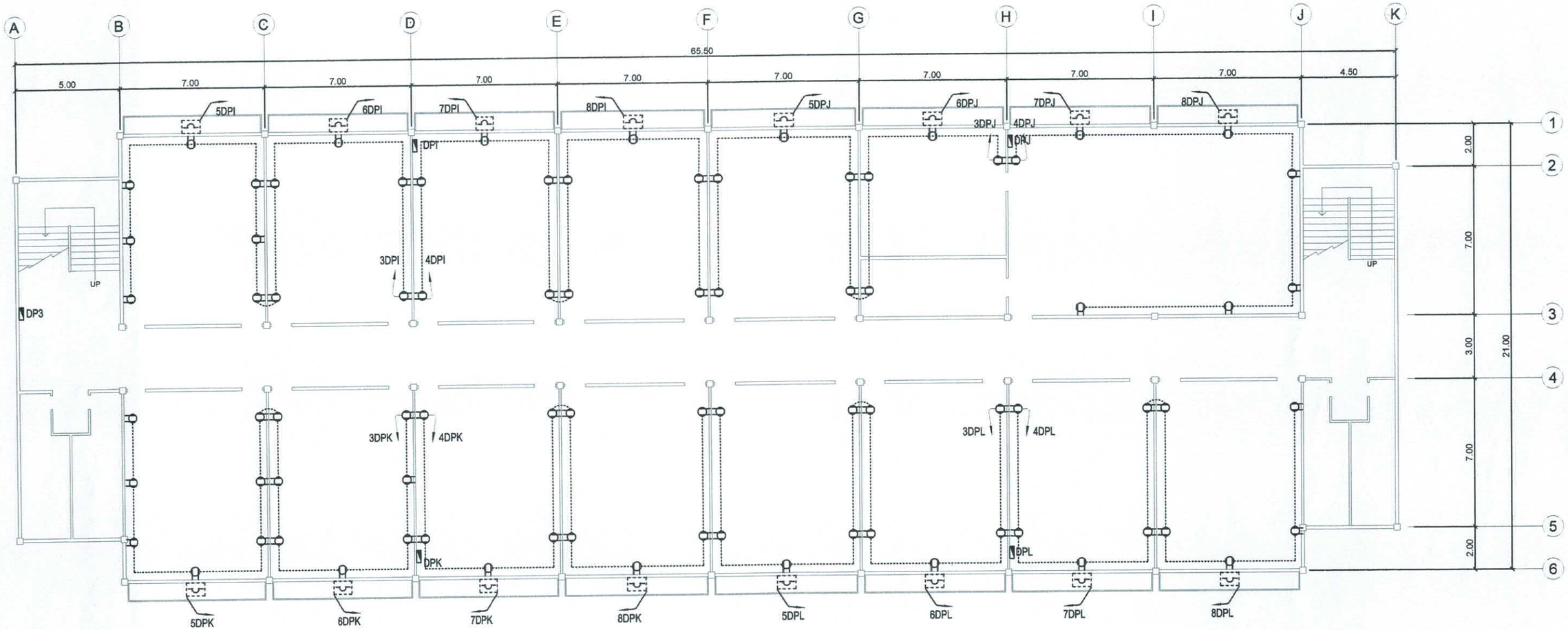
| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 5 |




# 1 / E 6 SECOND FLOOR POWER LAYOUT

SCALE 1 : 200 MTS.

| | PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. V. D. TEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 6 |




# THIRD FLOOR POWER LAYOUT

1 / E7 SCALE

1 : 200 MTS.

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CVSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | C. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 7 |

# SCHEDULE OF LOADS AND COMPUTATIONS :

**PANEL :** DPA (DISTRIBUTION PANEL A) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 19600 | 230 | 0 | 39 | 40 | 46 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

*NOTE:*

$I_{FL} =$ [(46 x 1.732)) + ( 125% x Im)] x DF = 108.42 *Amperes*

$I_{CB} =$ [(46 x 1.732)) + ( 250% x Im)] x DF = 137.17 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** DPB (DISTRIBUTION PANEL B) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 | + G5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 19600 | 230 | 0 | 39 | 40 | 46 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

*NOTE:*

$I_{FL} =$ [(46 x 1.732)) + ( 125% x Im)] x DF = 108.42 *Amperes*

$I_{CB} =$ [(46 x 1.732)) + ( 250% x Im)] x DF = 137.17 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** DPC (DISTRIBUTION PANEL C) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 20 | 2000 | 230 | | 8.70 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 16 | 1600 | 230 | | 6.96 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 14 | 2800 | 230 | | | 12.17 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 8 | 1600 | 230 | | | 6.96 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 1200 | 230 | | 12 | | | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1R,1B,G |
| 8 | ACU POWER OUTLET | 1 | 1200 | 230 | | 12 | | | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1R,1B,G |
| 9 | ACU POWER OUTLET | 1 | 1200 | 230 | | | 12 | | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1Y,1R,G |
| 10 | ACU POWER OUTLET | 1 | 1200 | 230 | | | 12 | | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1Y,1R,G |
| 11 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| 12 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| | | | | | | | | | | | | | |
| | TOTAL | | 17600 | 230 | 0 | 40 | 43 | 48 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

*NOTE:*

$I_{FL} =$ [(48 x 1.732)) + ( 125% x Im)] x DF = 98.14 *Amperes*

$I_{CB} =$ [(48 x 1.732)) + ( 250% x Im)] x DF = 113.14 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL : S** DPD (DISTRIBUTION PANEL D) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 16 | 1600 | 230 | | 6.96 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 21 | 2100 | 230 | | 9.13 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 8 | 1600 | 230 | | | 6.96 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 | + G2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 1200 | 230 | | 12 | | | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1R,1B,G |
| 8 | ACU POWER OUTLET | 1 | 1200 | 230 | | 12 | | | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1R,1B,G |
| 9 | ACU POWER OUTLET | 1 | 1200 | 230 | | | 17 | | 40AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1Y,1R,G |
| 10 | ACU POWER OUTLET | 1 | 1200 | 230 | | | 17 | | 40AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1Y,1R,G |
| 11 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| 12 | ACU POWER OUTLET | 1 | 1200 | 230 | | | | 12 | 30AT, 2P, 230V, MCCB | 2 - 5.5 | + G3.5 | IMC, 20 | 1B,1Y,G |
| | | | | | | | | | | | | | |
| | TOTAL | | 16900 | 230 | 0 | 40 | 50 | 48 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

*NOTE:*

$I_{FL} =$ [(50 x 1.732)) + ( 125% x Im)] x DF = 107.85 *Amperes*

$I_{CB} =$ [(50 x 1.732)) + ( 250% x Im)] x DF = 129.10 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL : S DP1 (DISTRIBUTION PANEL 1)** — **CABLE:** 3 - 175.0 SQMM THHN+ 1 - 80.0 SQMM THW — **CONDUIT:** IMC, 1-80 MM DIA. — **MAIN:** 300 AT, 400AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** HALLWAY, GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | PANEL/CIRCUIT NUMBER | LOAD IN RATING Volt- Amp | VOLT | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DISTRIBUTION PANEL A | DPA | 19600 | 230 | 0 | 39 | 40 | 46 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |
| 2 | DISTRIBUTION PANEL B | DPB | 19600 | 230 | 0 | 39 | 40 | 46 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |
| 3 | DISTRIBUTION PANEL C | DPC | 17600 | 230 | 0 | 40 | 43 | 48 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |
| 4 | DISTRIBUTION PANEL D | DPD | 16900 | 230 | 0 | 40 | 50 | 48 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + G14.0 | IMC, 40 | 1R,1B,1Y,G |
| 5 | LIGHTING CIRCUIT | 5DP1 | 2300 | 230 | 0 | 10 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B |
| | SPARE | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 76000 | 230 | 0 | 167 | 174 | 188 | 300AT, 3P, 230V, MCCB | 3 - 175.0 | + G30.0 | IMC, 80 | 1R,1B,1Y, G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

*NOTE:*

$I_{FL} =$ [(188 x 1.732))] x DF = 260.49 *Amperes*

$I_{CB} =$ [(188 x 1.732))] x DF = 260.49 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 175.0 SQMM THHN+ 1 - 30.0 SQMM THW IN 1 - 80 MM DIA. IMC***
***use: 300 AT, 400AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CVSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NEROMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 8 |

PANEL : DPE (DISTRIBUTION PANEL E) — CABLE: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — MAIN: 150 AT, 200 AF, 3P, 230V,MCCB
CONDUIT: IMC, 40 MM DIA. — ENCLOSURE: NEMA 1
PHASE: 3 — MOUNTING: SURFACE
VOLTS: 230 — LOCATION: SECOND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | | | 7.83 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | | | 7.83 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 19600 | 230 | 0 | 46 | 40 | 39 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x lm)] x DF = 108.42 Amperes
$I_{CB}$ = [(46 x 1.732)) + ( 250% x lm)] x DF = 137.17 Amperes

G - Means Ground Wire
1R- Color RED
1B- Color BLACK
1Y- Color YELLOW
1G- Color GREEN

use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC
use: 150 AT, 200AF, 3P, 230V,MCCB

*This Electrical Design is good only for the above connected loads.*
*Any additional electrical load connection in the future is not allowed,*
*Except redesign of electrical load system will be done.*

PANEL : DPF (DISTRIBUTION PANEL F) — CABLE: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — MAIN: 150 AT, 200 AF, 3P, 230V,MCCB
CONDUIT: IMC, 40 MM DIA. — ENCLOSURE: NEMA 1
PHASE: 3 — MOUNTING: SURFACE
VOLTS: 230 — LOCATION: SECOND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | | | 7.83 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | | | 7.83 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 8.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 19600 | 230 | 0 | 46 | 40 | 39 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x lm)] x DF = 108.42 Amperes
$I_{CB}$ = [(46 x 1.732)) + ( 250% x lm)] x DF = 137.17 Amperes

G - Means Ground Wire
1R- Color RED
1B- Color BLACK
1Y- Color YELLOW
1G- Color GREEN

use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC
use: 150 AT, 200AF, 3P, 230V,MCCB

*This Electrical Design is good only for the above connected loads.*
*Any additional electrical load connection in the future is not allowed,*
*Except redesign of electrical load system will be done.*

PANEL : DPG (DISTRIBUTION PANEL G) — CABLE: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — MAIN: 150 AT, 200 AF, 3P, 230V,MCCB
CONDUIT: IMC, 40 MM DIA. — ENCLOSURE: NEMA 1
PHASE: 3 — MOUNTING: SURFACE
VOLTS: 230 — LOCATION: SECOND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 19 | 1900 | 230 | | | | 8.26 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 13 | 1300 | 230 | | | | 5.65 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 7 | 1400 | 230 | | | 6.09 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 5 | 1000 | 230 | | | 4.35 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 17600 | 230 | 0 | 46 | 33 | 37 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x lm)] x DF = 108.42 Amperes
$I_{CB}$ = [(46 x 1.732)) + ( 250% x lm)] x DF = 137.17 Amperes

G - Means Ground Wire
1R- Color RED
1B- Color BLACK
1Y- Color YELLOW
1G- Color GREEN

use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC
use: 150 AT, 200AF, 3P, 230V,MCCB

*This Electrical Design is good only for the above connected loads.*
*Any additional electrical load connection in the future is not allowed,*
*Except redesign of electrical load system will be done.*

PANEL : DPH (DISTRIBUTION PANEL H) — CABLE: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — MAIN: 150 AT, 200 AF, 3P, 230V,MCCB
CONDUIT: IMC, 40 MM DIA. — ENCLOSURE: NEMA 1
PHASE: 3 — MOUNTING: SURFACE
VOLTS: 230 — LOCATION: SECOND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING WATTAGE | VOLTAGE | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 27 | 2700 | 230 | | | | 11.74 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 23 | 2300 | 230 | | | | 10.00 | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | 6.70 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 6 | 1200 | 230 | | | 5.22 | | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 20200 | 230 | 0 | 46 | 37 | 45 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x lm)] x DF = 108.42 Amperes
$I_{CB}$ = [(46 x 1.732)) + ( 250% x lm)] x DF = 137.17 Amperes

G - Means Ground Wire
1R- Color RED
1B- Color BLACK
1Y- Color YELLOW
1G- Color GREEN

use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC
use: 150 AT, 200AF, 3P, 230V,MCCB

*This Electrical Design is good only for the above connected loads.*
*Any additional electrical load connection in the future is not allowed,*
*Except redesign of electrical load system will be done.*

PANEL : DP2 (DISTRIBUTION PANEL 2) — CABLE: 3 - 175.0 SQMM THHN+ 1 - 80.0 SQMM THW — MAIN: 300 AT, 400AF, 3P, 230V,MCCB
CONDUIT: IMC, 1-80 MM DIA. — ENCLOSURE: NEMA 1
PHASE: 3 — MOUNTING: SURFACE
VOLTS: 230 — LOCATION: HALLWAY, SECOND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | PANEL/CIRCUIT NUMBER | LOAD IN RATING Volt- Amp | VOLT | AMPERES 3 ø | AB | CA | BC | CIRCUIT PROTECTION CIRCUIT BREAKER RATING | Size of Conductor SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DISTRIBUTION PANEL E | DPE | 19600 | 230 | 0 | 46 | 40 | 39 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 2 | DISTRIBUTION PANEL F | DPF | 19600 | 230 | 0 | 46 | 40 | 39 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 3 | DISTRIBUTION PANEL G | DPG | 17600 | 230 | 0 | 46 | 33 | 37 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 4 | DISTRIBUTION PANEL H | DPH | 20200 | 230 | 0 | 46 | 37 | 45 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 5 | LIGHTING CIRCUIT | 5DP2 | 1900 | 230 | 0 | | 8 | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B |
| | SPARE | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 78900 | 230 | 0 | 184 | 159 | 159 | 300AT, 3P, 230V, MCCB | 3 - 175.0 + | G 30.0 | IMC, 80 | 1R,1B,1Y, G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(184 x 1.732))] x DF = 254.95 Amperes
$I_{CB}$ = [(184 x 1.732))] x DF = 254.95 Amperes

G - Means Ground Wire
1R- Color RED
1B- Color BLACK
1Y- Color YELLOW
1G- Color GREEN

use: 3 - 175.0 SQMM THHN+ 1 - 30.0 SQMM THW IN 1 - 80 MM DIA. IMC
use: 300 AT, 400AF, 3P, 230V,MCCB

*This Electrical Design is good only for the above connected loads.*
*Any additional electrical load connection in the future is not allowed,*
*Except redesign of electrical load system will be done.*

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPRD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R. H. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TIEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 9 |

**PANEL :** DPI (DISTRIBUTION PANEL I) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** THIRD FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING: WATTAGE | VOLTAGE | AMPERES: 3 ø | AB | CA | BC | CIRCUIT PROTECTION: CIRCUIT BREAKER RATING | Size of Conductor: SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit in MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | | 8.70 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | | 8.70 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 19600 | 230 | 0 | 39 | 46 | 40 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x Im)] x DF = 108.42 *Amperes*

$I_{CB}$ = [(46 x 1.732)) + ( 250% x Im)] x DF = 137.17 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** DPJ (DISTRIBUTION PANEL J) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** THIRD FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING: WATTAGE | VOLTAGE | AMPERES: 3 ø | AB | CA | BC | CIRCUIT PROTECTION: CIRCUIT BREAKER RATING | Size of Conductor: SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit in MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 9 | 1800 | 230 | | | | 7.83 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 7 | 1400 | 230 | | | | 6.09 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 18800 | 230 | 0 | 39 | 46 | 37 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x Im)] x DF = 108.42 *Amperes*

$I_{CB}$ = [(46 x 1.732)) + ( 250% x Im)] x DF = 137.17 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** DPK (DISTRIBUTION PANEL K) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** THIRD FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING: WATTAGE | VOLTAGE | AMPERES: 3 ø | AB | CA | BC | CIRCUIT PROTECTION: CIRCUIT BREAKER RATING | Size of Conductor: SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit in MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 24 | 2400 | 230 | | 10.43 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 14 | 2800 | 230 | | | | 12.17 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | | 8.70 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 21000 | 230 | 0 | 41 | 46 | 44 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x Im)] x DF = 108.42 *Amperes*

$I_{CB}$ = [(46 x 1.732)) + ( 250% x Im)] x DF = 137.17 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** DPL (DISTRIBUTION PANEL L) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** THIRD FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING: WATTAGE | VOLTAGE | AMPERES: 3 ø | AB | CA | BC | CIRCUIT PROTECTION: CIRCUIT BREAKER RATING | Size of Conductor: SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit in MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING OUTLET | 18 | 1800 | 230 | | 7.83 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 2 | LIGHTING OUTLET | 24 | 2400 | 230 | | 10.43 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B,G |
| 3 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | | 8.70 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 4 | CONVENIENCE OUTLET | 10 | 2000 | 230 | | | | 8.70 | 20AT, 2P, 230V, MCCB | 2 - 3.5 + | G 2.0 | IMC, 20 | 1Y,1R,G |
| 5 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 6 | ACU POWER OUTLET | 1 | 3000 | 230 | | | 23 | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| 7 | ACU POWER OUTLET | 1 | 3000 | 230 | | 23 | | | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | 230 | | | | | | | | | |
| 8 | ACU POWER OUTLET | 1 | 3000 | 230 | | | | 23 | 50AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | 230 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 20200 | 230 | 0 | 41 | 46 | 40 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(46 x 1.732)) + ( 125% x Im)] x DF = 108.42 *Amperes*

$I_{CB}$ = [(46 x 1.732)) + ( 250% x Im)] x DF = 137.17 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** DP3(DISTRIBUTION PANEL 3) — **CABLE:** 3 - 175.0 SQMM THHN+ 1 - 80.0 SQMM THW — **CONDUIT:** IMC, 1-80 MM DIA. — **MAIN:** 300 AT, 400AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** HALLWAY, THIRD FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | PANEL/CIRCUIT NUMBER | LOAD IN RATING: Volt- Amp | VOLT | AMPERES: 3 ø | AB | CA | BC | CIRCUIT PROTECTION: CIRCUIT BREAKER RATING | Size of Conductor: SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit in MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DISTRIBUTION PANEL I | DPI | 19600 | 230 | 0 | 39 | 46 | 40 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 2 | DISTRIBUTION PANEL J | DPJ | 18800 | 230 | 0 | 39 | 46 | 37 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 3 | DISTRIBUTION PANEL K | DPK | 21000 | 230 | 0 | 41 | 46 | 44 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 4 | DISTRIBUTION PANEL L | DPL | 20200 | 230 | 0 | 41 | 46 | 40 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 5 | LIGHTING CIRCUIT | 5DP3 | 1900 | 230 | 0 | 8 | | | 15AT, 2P, 230V, MCCB | 2 - 2.0 | | IMC, 20 | 1R,1B |
| | SPARE | | | | | | | | | | | | |
| | TOTAL | | 81500 | 230 | 0 | 168 | 184 | 162 | 300AT, 3P, 230V, MCCB | 3 - 175.0 + | G 30.0 | IMC, 80 | 1R,1B,1Y, G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(184 x 1.732))] x DF = 254.95 *Amperes*

$I_{CB}$ = [(184 x 1.732))] x DF = 254.95 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 175.0 SQMM THHN+ 1 - 30.0 SQMM THW IN 1 - 80 MM DIA. IMC***
***use: 300 AT, 400AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

**PANEL :** S FPP (FIRE PROTECTION PANEL) — **CABLE:** 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW — **CONDUIT:** IMC, 40 MM DIA. — **MAIN:** 150 AT, 200 AF, 3P, 230V,MCCB — **ENCLOSURE:** NEMA 1 — **MOUNTING:** SURFACE

**PHASE:** 3 — **VOLTS:** 230 — **LOCATION:** GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | NO OF OUTLET | LOAD IN RATING: WATTAGE | VOLTAGE | AMPERES: 3 ø | AB | CA | BC | CIRCUIT PROTECTION: CIRCUIT BREAKER RATING | Size of Conductor: SQ. MM THHN | SQ. MM THW(G) | Size Of Conduit in MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | FIRE PUMP | 1 | 15000 | 230 | 54 | | | | 100AT, 3P, 230V, MCCB | 2 - 22.0 + | G 14.0 | IMC, 32 | 1R,1B,1Y,G |
| 2 | JOCKEY PUMP | 1 | 2300 | 230 | | 17.00 | | | 50 AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1R,1B,G |
| | SPARE | | | | | | | | | | | | |
| 3 | BOOSTER PUMP | 1 | 2300 | 230 | | | 17.00 | | 50 AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1Y,1R,G |
| | SPARE | | | | | | | | | | | | |
| 4 | WATER PUMP | 1 | 2300 | 230 | | | | 17.00 | 50 AT, 2P, 230V, MCCB | 2 - 8.0 + | G 5.5 | IMC, 20 | 1B,1Y,G |
| | SPARE | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | TOTAL | | 21900 | 230 | 54 | 17 | 17 | 17 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

$I_{FL}$ = [(54) + (17 x 1.732)) + ( 125% x Im)] x DF = 104.69 *Amperes*

$I_{CB}$ = [(54) + (17 x 1.732)) + ( 250% x Im)] x DF = 125.94 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 50.0 SQMM THHN+ 1 - 14.0 SQMM THW IN 40 MM DIA. IMC***
***use: 150 AT, 200AF, 3P, 230V,MCCB***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R. H. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 10 |

PANEL : MDP (MAIN DISTRIBUTION PANEL) — CABLE: 3 - 3 - 300.0 SQMM THHN+ 3 - 50.0 SQMM THW — MAIN: 1250 AT, 1300 AF, 3P, 230V,MCCB

CONDUIT: IMC, 3 - 90 MM DIA. — ENCLOSURE: NEMA 1

PHASE: 3 — MOUNTING: SURFACE

VOLTS: 230 — LOCATION: HALLWAY, GROUND FLOOR

| CKT NO. | CIRCUIT DESCRIPTION | PANEL | LOAD IN RATING | | | | | | CIRCUIT PROTECTION | Size of Conductor | | | Size Of Conduit In MM ø | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Volt- Amp | VOLT | AMPERES 3 ø | AB | CA | BC | CIRCUIT BREAKER RATING | SQ. MM THHN | | SQ. MM THW(G) | | |
| 1 | DISTRIBUTION PANEL 1 | DP1 | 76000 | 230 | 0 | 167 | 174 | 188 | 300AT, 3P, 230V, MCCB | 3 - 175.0 | + | G 30.0 | IMC, 80 | 1R,1B,1Y, G |
| 2 | DISTRIBUTION PANEL 2 | DP2 | 78900 | 230 | 0 | 184 | 159 | 159 | 300AT, 3P, 230V, MCCB | 3 - 175.0 | + | G 30.0 | IMC, 80 | 1R,1B,1Y, G |
| 3 | DISTRIBUTION PANEL 3 | DP3 | 81500 | 230 | 0 | 168 | 184 | 162 | 300AT, 3P, 230V, MCCB | 3 - 175.0 | + | G 30.0 | IMC, 80 | 1R,1B,1Y, G |
| 4 | DISTRIBUTION PANEL 4 | DP4 | 139388 | 230 | 0 | 304 | 314 | 309 | 500 AT, 3P, 230V, MCCB | 3 - 2 - 125.0 | + | G 3 - 50.0 | IMC, 3 - 50 | 1R,1B,1Y, G |
| 5 | FIRE PROTECTION PANEL | FPP | 21900 | 230 | 54 | 17 | 17 | 17 | 150 AT, 3P, 230V, MCCB | 3 - 50.0 | + | G 14.0 | IMC, 40 | 1R,1B,1Y,G |
| 6 | ELEVATOR PANEL | ELP | 7460 | 230 | 22 | | | | 50 AT, 3P, 230V, MCCB | 3 - 8.0 | + | G 5.5 | IMC, 25 | 1R,1B,1Y,G |
| 7 | FIRE DETECTION ALARM SYSTEM | FDAS | 500 | 230 | 0 | | | 2 | 15 AT, 3P, 230V, MCCB | 2 - 2.0 | | | IMC, 20 | 1R,1B |
| | SPARE | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | TOTAL | | 405648 | 230 | 76 | 840 | 847 | 837 | 1250 AT, 3P, 230V, MCCB | 3 - 3 - 300.0 | + | G 3 - 50.0 | IMC, 3 - 90 | 1R,1B,1Y, G |

MAIN FEEDER and CURRENT PROTECTION COMPUTATION:

NOTE:

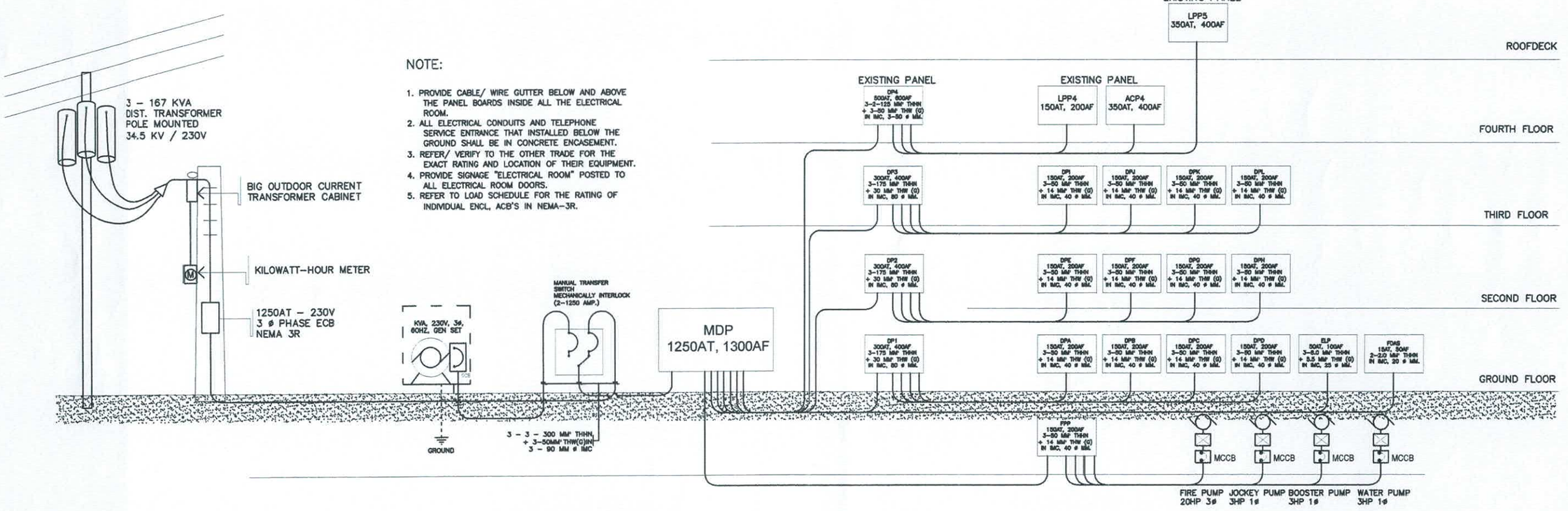
$I_{FL}$ = [(76 + (847 x 1.732))] x DF = 1234.40 *Amperes*

$I_{CB}$ = [(76 + (847 x 1.732))] x DF = 1234.40 *Amperes*

*G - Means Ground Wire*
*1R- Color RED*
*1B- Color BLACK*
*1Y- Color YELLOW*
*1G- Color GREEN*

***use: 3 - 3 - 300.0 SQMM THHN+ 3 - 50.0 SQMM THW IN 3 - 90 MM DIA. IMC***
***use: 1250 AT, 1300 AF, 3P, 230V,MCCB***
***use: 3-167 kVA, 34.5kV/230V, POLE MOUNTED, DISTRIBUTION TRANSFORMER***

***This Electrical Design is good only for the above connected loads.***
***Any additional electrical load connection in the future is not allowed,***
***Except redesign of electrical load system will be done.***




NOTE:

1. PROVIDE CABLE/ WIRE GUTTER BELOW AND ABOVE THE PANEL BOARDS INSIDE ALL THE ELECTRICAL ROOM.
2. ALL ELECTRICAL CONDUITS AND TELEPHONE SERVICE ENTRANCE THAT INSTALLED BELOW THE GROUND SHALL BE IN CONCRETE ENCASEMENT.
3. REFER/ VERIFY TO THE OTHER TRADE FOR THE EXACT RATING AND LOCATION OF THEIR EQUIPMENT.
4. PROVIDE SIGNAGE "ELECTRICAL ROOM" POSTED TO ALL ELECTRICAL ROOM DOORS.
5. REFER TO LOAD SCHEDULE FOR THE RATING OF INDIVIDUAL ENCL, ACB'S IN NEMA–3R.

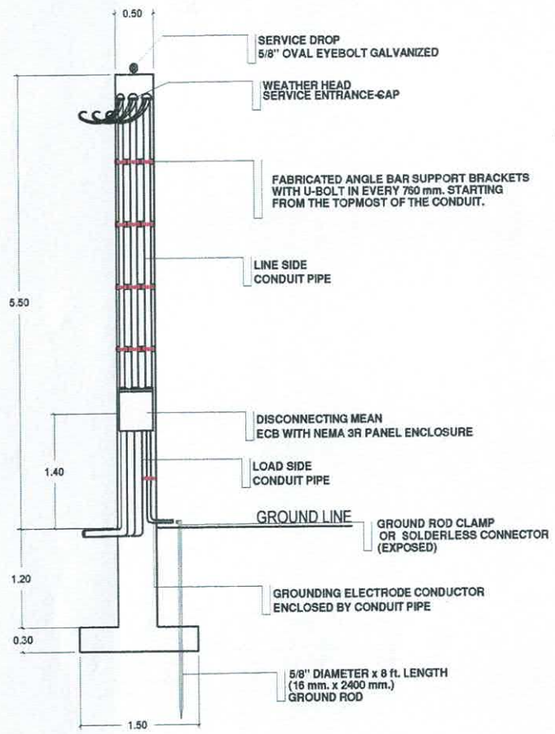
1 / E 11

# SINGLE LINE DIAGRAM

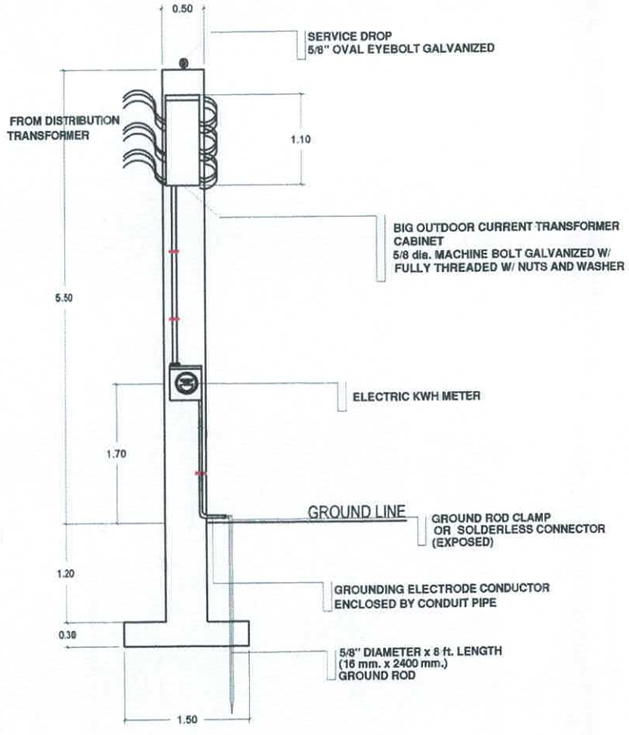
SCALE N T S

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R. P. PENA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. X. B. NEPOMUCENO<br>VPASS CVSU | D. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 11 |

## FRONT VIEW




## REAR VIEW

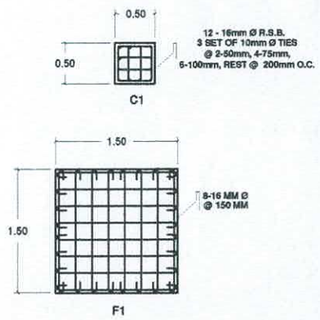


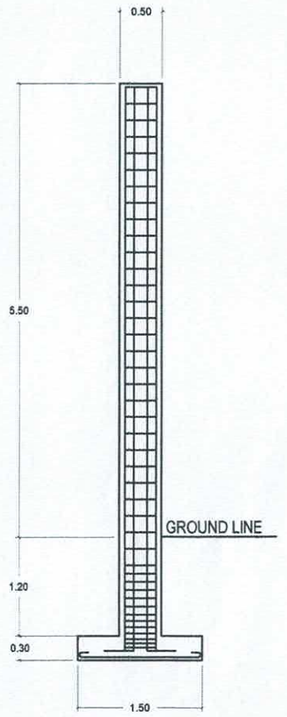

**SCHEDULE OF FOOTINGS**

| NAME | TYPE | THICKNESS | SIZE (LxW) | DEPTH | REINFORCEMENT | |
|---|---|---|---|---|---|---|
| | | | | | BOTTOM | |
| | | | | | ALONG L | ALONG W |
| F1 | ISOLATED | 300 MM | 1500 x 1500 MM | 1500 MM | 8-16 MM Ø @ 150 MM | 8-16 MM Ø @ 150 MM |

| COLUMN | DIMENSION | REINFORCEMENT | NO. OF TIES & SPACING |
|---|---|---|---|
| C1 | 500 MM X 500 MM | 12 - 16mm Ø R.S.B. | 3 SET OF 10mm Ø TIES @ 2-50mm, 4-75mm, 6-100mm, REST @ 200mm O.C. |

## COLUMN DETAILS



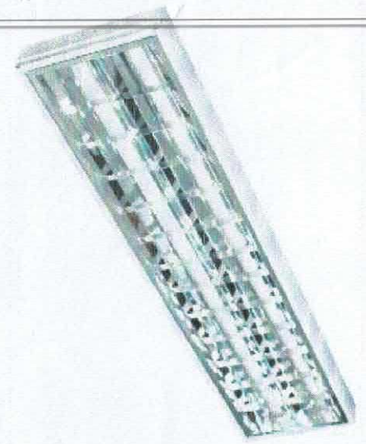




# SERVICE ENTRANCE CONCRETE PEDESTAL DETAILS

1 / E 12

SCALE 1 : 75 MTS.

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ<br>PDU OVPPD | R. M. CAJIGAL<br>CAMPUS ADMINISTRATOR CvSU BACOOR | R. P. PEÑA<br>PROF. ELEC. ENGINEER | S. B. BAYOT JR.<br>HEAD PDU | O. B. DELOS REYES<br>DIRECTOR PLANNING AND DEVT. OFFICE | M. J. D. TEPORA<br>VPPD CVSU | J. A. B. NEPOMUCENO<br>VPASS CVSU | H. D. ROBLES<br>PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 12 |



1 / E 13 — 2-18W LED TUBE LIGHT WITH DIFFUSER, 4 FT. LENGTH (FL)

SCALE NTS

2 / E 13 — 1-18W LED TUBE LIGHT WITH DIFFUSER, 4 FT. LENGTH (FL)

SCALE NTS

3 / E 13 — 12 WATTS LED DOWNLIGHT WITH 6" SURFACE TYPE ROUND CASING

SCALE NTS


4 / E 13 — EMERGENCY LIGHT TWIN HEAD

SCALE NTS

5 / E 13 — TWO-GANG CONVENIENCE OUTLET UNIVERSAL TYPE WITH GROUND

SCALE NTS

| PREPARED BY: | END USER: | REVIEWED BY: | | ENDORSED BY: | REC. APPROVAL: | | APPROVED BY: | PROJECT TITLE/ LOCATION: | IMPLEMENTING AGENCY: | SHT NO: |
|---|---|---|---|---|---|---|---|---|---|---|
| R. J. R. SANCHEZ PDU OVPPD | M. S. MACALALAD CAMPUS ADMINISTRATOR CvSU BACOOR | R. D. PEÑA PROF. ELEC. ENGINEER | S. B. BAYOT JR. HEAD PDU | O. B. DELOS REYES DIRECTOR PLANNING AND DEVT. OFFICE | A. G. MAGDAWAS VPPD CVSU | J. X. B. NEPOMUCENO VPASS CVSU | H. D. ROBLES PRES CVSU | IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF FIVE STOREY ACADEMIC BUILDING AT CvSU BACOOR CAMPUS<br>CAVITE STATE UNIVERSITY BACOOR CAMPUS | CAVITE STATE UNIVERSITY | E - 13 |