


**“ELECTRICAL ENHANCEMENT OF LABORATORY ROOMS ”
@ THE RESEARCH & DEVELOPMENT COMPLEX BUILDING
BENGUET STATE UNIVERSITY**



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A. BRIEF INTRODUCTION

The Research and Development Complex is a facility with chain of laboratories established to cater the research needs of the Cordillera in terms of soil, plant and water. During the initial planning and construction of the building structure, the said laboratories were not taken into consideration whereas, the equipment procured for laboratory use were not included in the original electrical load design. Instantaneous with the establishment of the laboratories, the university decided to reinforce and enhance the electrical load design of the building in consideration with the procured equipment and future equipment for laboratory use. This so, the Electrical Scope of Works herein mentioned was established to be commissioned to be fully operational.

B. SPECIAL PREAMBLE

In the prosecution of the project only Electrical Contractors with qualified experience shall only be allowed to participate in the bidding process.

The Electrical Contractor Bidder shall practice due diligence in pricing this Bid Form indicating the Bill of Quantities (BOQ) moreover, the Bidder shall guarantee his quantities and it is his responsibility to check the description provided for in this BOQ against the issued Tender Plans and Specifications and in the Pre - Tender Meetings and Bulletins.

The Electrical Contractor shall supply, deliver and install new materials of approved quality by the owner through its technical representative.

The Electrical Contractor shall provide all manpower, tools and equipment required and necessary for the smooth prosecution of the specified Electrical Scope of Works.

C. ELECTRICAL SCOPE OF WORKS

- i. Service Line
- ii. Grounding System
- iii. Main Distribution System
- iv. Crop Protection Laboratory – PP1
- v. Soil, Plant and Water Laboratory A – PP2
- vi. Soil, Plant and Water Laboratory B – PP3
- vii. Biotech Lab – PP4
- viii. Fire Pump – PP5

D. TESTING AND COMMISSIONING

The Electrical Contractor Bidder shall conduct testing and commissioning for all of the Scope of Works indicated above with the presence of the Professional Electrical Consultant (PEE). The Electrical Contractor shall submit report for all the tests conducted prior to the issuance of the Certificate of Completion, Certificate of Turnover and Acceptance for the processing of its final billing.

E. CONTRACT DURATION

The Scope of Works shall be implemented within sixty (60) calendar days.

F. APPROVED BUDGET FOR THE CONTRACT

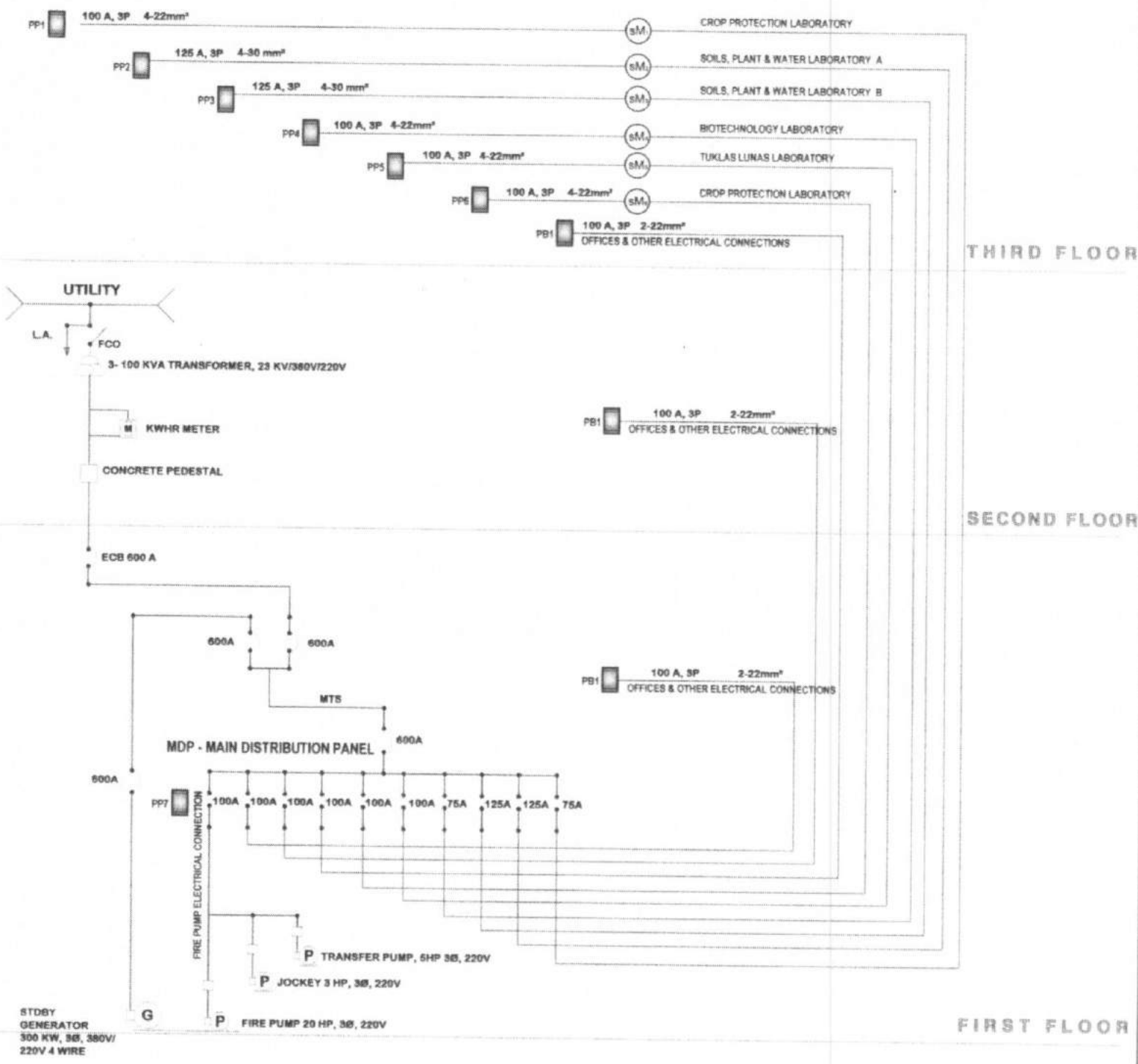
One Million Pesos (Php 1,500,000.00)

G. DURATION OF CONTRACT

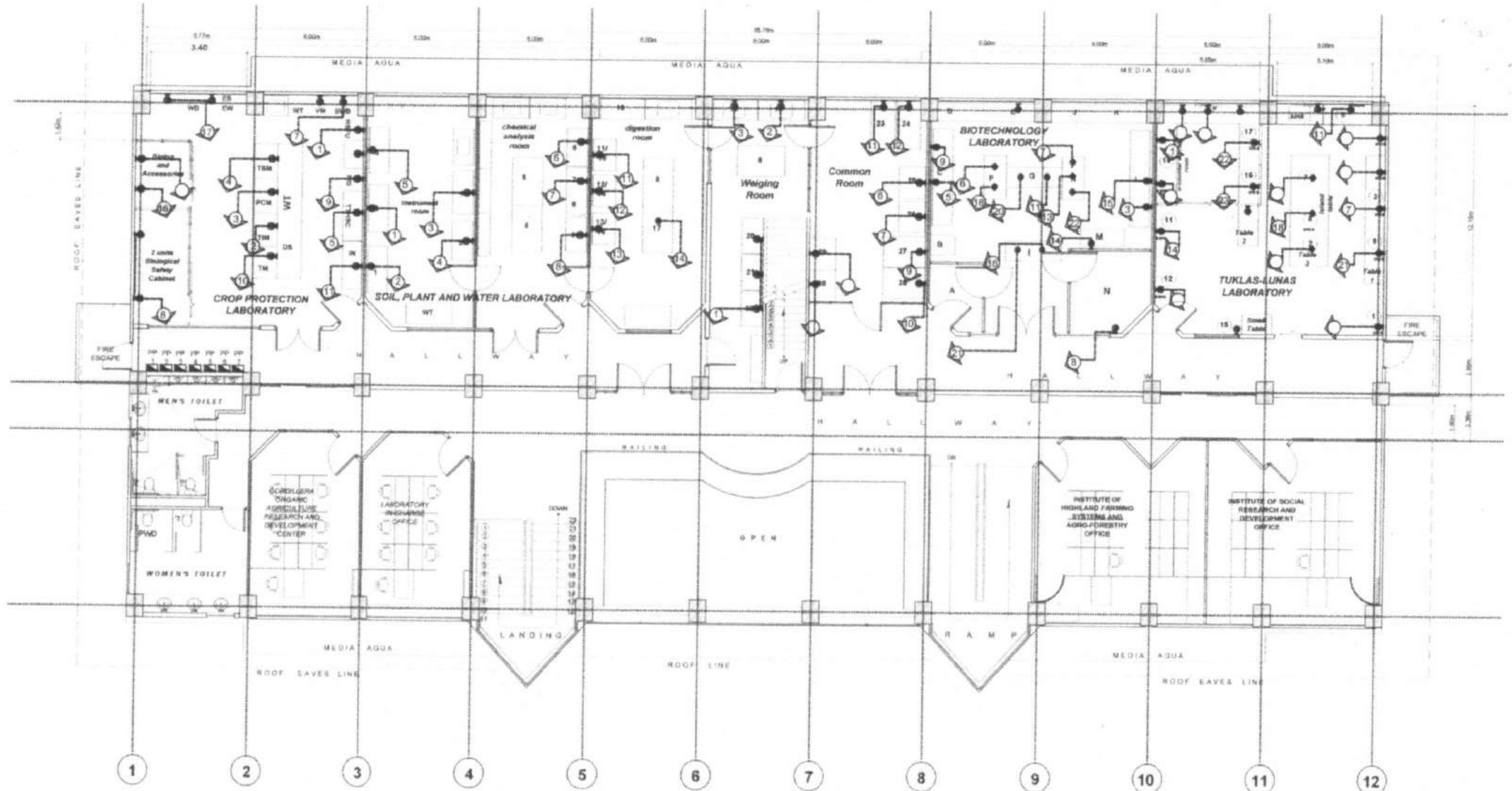
60 Calendar Days

H. TECHNICAL PERSONNEL REQUIRED

- i. Registered Electrical Engineer (REE)/ Registered Master Electrician (RME)
- ii. Safety Officer
- iii. Skilled Workers



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POWER SINGLE LINE DIAGRAM
 E 10 NOT TO SCALE



- CROP PROTECTION LABORATORY**
- LEGEND:
- HFSL- Horizontal Floor Standing Autoclave
 - TM- Trinocular Inverted Microscope
 - PCM- Pathology Configuration Microscope
 - TCM- Trinocular Stereo Microscope
 - TTHSC- Table Top High Speed Centrifuge
 - WD- Water Distiller
 - SWB- Shallow Water Bath
 - BSC- Biological Safety Cabinet
 - B- Biorig
 - RG- Refrigerator
 - TM- Trinocular Microscope
 - R- Incubator
 - D- Drying Oven
 - F- Fumehood
 - VM- Vortex Mixer

- SOIL, PLANT AND WATER LABORATORY**
- LEGEND:
- IR- Inverted Room
 - 1- AAS
 - 2-DS-AES
 - 3-ICP-AES
 - 4-Flame Photometer
 - 5-UV-VIS
 - Chemical Analysis and Digestion Room
 - 6-Balmer
 - 7-Centrifuge
 - 8-Balmer
 - 9-pH Meter
 - 10-Electric Stove (cook)
 - 11-Fumehood 1
 - 12-Fumehood 2
 - 13-Fumehood 3
 - 14-K. Distillation Unit
 - 14-Kjeldahl Digestor
 - 15- Hotplate
 - 17- Vacuum Pump

- SOIL, PLANT AND WATER LABORATORY**
- LEGEND:
- Weighting Room
 - 18- Densitizer
 - 19- Water Distiller
 - 20- Digital Balance 1
 - 21- Digital Balance 2
 - 22- Digital Balance 3
 - Common Room
 - 23- Horizontal Cylindrical Autoclave
 - 24- Horizontal Cylindrical Autoclave
 - 25- Furnace
 - 26- Furnace
 - 27- Drying Oven
 - 28- Drying Oven
 - 29- Cold Storage 1
 - 30- Cold Storage 2
 - WT- Working Table

- BIOTECHNOLOGY LABORATORY**
- LEGEND:
- C- Refrigerator
 - Biological Oven
 - Microwave
 - E- Water Distiller
 - F- Analytical Balance
 - Centrifuge
 - G- Refract Centrifuge
 - Vortex Mixer
 - H- Microcentrifuge
 - Membrane
 - Thermal Cycler
 - I- Freeze Dryer
 - 20 C Freezer
 - L- Fume hood
 - Incubator Shaker
 - M- Horizontal gel electrophoresis system
 - N- Gel imaging documentation system
 - Spectrophotometer

- TUKLAS-LUNAS LABORATORY**
- LEGEND:
- 1- Control Vial
 - 2- VLC (2-units)
 - 3- Rotavap (2-units)
 - 5- Distilling Set-up
 - 8- Shower/Eyewash
 - 7- Pre-Preparation Set-up
 - 6- Semiconductor UV Lamp Vortex
 - 9- Oven
 - 10- HPLC
 - 11- Refrigerator
 - 12- Refrigerator
 - 15- Fine Extruder
 - Additional Equipment
 - 16- HPLC
 - 17- Flush Cabinet
 - 18- Drying Oven Cabinet

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E 9
SCALE

THIRD FLOOR ELECTRICAL POWER LAYOUT (ADDITIONAL CONVENIENCE OUTLETS)

1: 100 MTS

