Republic of the Philippines
CAVITE STATE UNIVERSITY
Don Severino delas Alas Campus
Indang, Cavite

BILL OF QUANTITIES

IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF CvSU SILANG CAMPUS
ABC: ₱ 5,118,298.89 **Bill of Quantities**
COLLEGE/UNIT/CAMPUS: SILANG CAMPUS

Item No.	Description	Unit	Quantity	Unit Price (Pesos)	Amount (Pesos)
I	PRELIMINARY WORKS (Pesos _____ _____ _____ and _____ centavos)				
II	EXCAVATION WORKS (Pesos _____ _____ _____ and _____ centavos)				
III	CONCRETE WORKS (Pesos _____ _____ _____ and _____ centavos)				
IV	MASONRY WORKS (Pesos _____ _____ _____ and _____ centavos)				
V	MISCELLANEOUS WORKS (Pesos _____ _____ _____ and _____ centavos)				
VI	CARPENTRY WORKS (Pesos _____ _____ _____ and _____ centavos)				
VII	TRUSSES & ROOFING WORKS (Pesos _____ _____ _____ and _____ centavos)				

VIII	PAINTING WORKS (Pesos _____ _____ _____ and _____ centavos)				
IX	ELECTRICAL WORKS (Pesos _____ _____ _____ and _____ centavos)				
	GRAND TOTAL				_____
	Write grand total in words	_____ _____ _____			

Submitted by: Date: _____

Name of Bidder/Bidder's Representative: _____

(Signature over Printed Name)

Position: _____

Construction Company/Contractor: _____

SCOPE OF WORK:

A. IMPROVEMENT OF ELECTRICAL POWER SYSTEM OF CvSU SILANG CAMPUS

GENERAL NOTES:

1. The project should be finished in 120 calendar days.
2. Actual site inspection is a must. Verify the actual condition of the site, since there is an existing structure.
3. One unit power house shall be constructed as shown in the plans.
4. Nine (9) Concrete poles should be constructed and installed.
5. All parts of the construction shall be finished with first class workmanship, to the fullest talent and meaning of the plans and these specifications, and to the entire satisfaction of the project inspector and the end-user.

B. Technical Description

I. Preliminary Works

A. Mobilization / Demobilization

Provide the following:

1. Billboard with project information
2. Bunkhouse with temporary office
3. Temporary comfort rooms
4. Site temporary enclosure may be blue sack or any suitable materials that may enclose the workplace.
5. It includes cleaning up of site, clearing, hauling and disposal of waste and construction debris before and after the construction work at least six meters away from the building line. Notify the end-user regarding the properties that need to be hauled away from the site prior to construction. All waste materials shall be disposed of by the contractor at his expense.
6. Any excess materials resulting from all earthwork operations not required or unsuitable for backfill as directed by the project inspector, shall be disposed of by the contractor at his expense.

II. Excavation Works

1. This work includes excavation for all footings, columns, and tie beams.
2. Backfilling works shall be placed in layers not exceeding 150 mm in thickness, and each layer shall be thoroughly compacted by wetting, tamping and rolling.
3. Gravel fill should be 0.05m thick.

III. Concrete Works

A. Cast-in place concrete

1. Concrete works include columns, footings, slab on fill, beams, roof beams, and all other concrete components needed to complete the structure.
2. Provide lintel beams for the opening of windows and doors. Use 0.15m x 0.20m reinforced with 2-12 mm Ø bars enclosed with 10mm Ø bars spaced @ 0.20m on center.
3. Strength of concrete to be adopted shall be 3,500 psi at 28 days equivalent to Class A mixture.
4. Provide trial mix for cast-in place concrete.
5. Concrete works should be plain cement finish.
6. Provide necessary tools and equipment needed for concrete works.
7. Reasonable number of tests on the concrete is required by the implementing agency during the progress of the work. Not less than two (2) cylindrical specimens shall be reserved for the 28th day test. The Contractor shall pay for the cost of material testing.
8. In case of failure of test cylinders to meet the specified strengths, the Contractor shall at his expense obtain concrete core samples from the poured concrete and the compressive strength of same be taken by a competent testing authority to determine the conclusive strength and integrity of the concrete poured.

B. Steel reinforcement

1. Provide 10 mm Ø deformed bars at 0.30m on center both ways for slab on fill .
2. Use deformed bar grade 40.
3. See plan for the quantity and sizes of steel reinforcement
4. Provide necessary tools and equipment needed for steel works.
5. See plan for details and extent of work.

6. The contractor shall furnish 2 copies of the manufacturer's certificate of mill tests of all reinforcing steel. The contractor shall at his own expense employ an approved testing laboratory which shall conduct testing of all reinforcement sizes of each bulk under the supervision of the project inspector.

IV. Masonry Works

A. CHB laying
   1) Installation of CHB reinforced with 10 mm Ø deformed bar spaced at 0.60 m. on center every three layers.
      a. CHB 5" for the walls.
   2) Masonry works should be plastered plain cement.

V. Miscellaneous Works

A. Supply and installation of door
   1. 1.0 set (0.80m x 2.10m) solid panel door with complete accessories
B. Supply and installation of window
   1. 2.0 sets (1.20m x 0.5m) Aluminum sliding window with ¼" thick clear glass; complete with all accessories

VI. Carpentry Works

A. Formworks and Scaffolding
   1. Provide necessary form lumber and scaffolding needed for the completion of the project.
B. Ceiling Works
   1. Provide ceiling works for the whole area.
   2. Use 12mm thick gypsum board for ceiling board.
   3. Use metal furring as ceiling runner and ceiling joist at 0.40m on center both ways.
   4. Use wall angle on the perimeter walls.
   5. Use rivet or black screw for connections.

VII. Trusses and Roofing Works

A. Trusses
   1) See plans for sizes of bar and other details for the installation of steel trusses.
   2) This work also includes painting of two (2) coats of epoxy primer and two (2) coats of quick dry enamel black.
   3) Provide necessary tools and equipment.
   4) All joint connections should be fully welded and shall be provided with 10mm. thick gusset plates for member connections and 0.2m x 0.3m x 12mm thick base plates for truss to column connections.
   5) Use galvanized CEE purlins ga. 16, 2" x 3" (1.5mm thick).
B. Roofing
   1) Adopt gauge 26 (0.5 mm.) twin rib type pre-fabricated colored roofing sheets.
   2) Adopt gauge 26 (0.5 mm) 0.40m x 0.5mm thick colored G.I. ridge roll.
   3) All attachment for roofing sheet and ridge roll shall be 4" teck screw for metal.
   4) Provide water sealant for all attachment (water sealant should be provided for both inside and outside surface of teck screw head).

VIII. Painting Works

A. Concrete and Masonry
   1. This work includes the painting of the interior and exterior concrete and masonry components of the structure.
   2. Repair minor surface imperfections with skim coat. Let dry, then sand. Spot coat with top coat color.
   3. Apply two coats of colored factory mixed dirt resistant semi-gloss latex.
B. Ceiling
   1. This work includes painting of all newly installed ceiling components in the building.
   2. Apply one coat of flatwall enamel white. Allow to dry overnight.
   3. Repair minor surface imperfections with glazy putty. Let dry then sand.
   4. Apply at least two coats of Quick Dry Enamel in the desired color. Allow an

overnight inter coating interval.

C. Metal and Roofing
   1. This work includes painting of all roofing sheets.
   2. Apply red oxide primer by brush or spray. Allow to dry for 24 hours. Apply suitable putty on imperfections.
   3. Apply at least two coats of Quick Dry Enamel in the desired color.
      Note: Color of paint will depend upon the preference of the end-user. Paints and its accessories should be Boysen or approved equal.

IX. Electrical Works

1. Supply and Installation of panel boards and circuit breakers in accordance with the plan.
   a. Panel board MDP, Main 1200 AT, 1300 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   b. Panel board SDP1, Main 200 AT, 300 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   c. Panel board SDP2, Main 200 AT, 300 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   d. Panel board SDP3, Main 200 AT, 300 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   e. Panel board TDP1, Main 250 AT, 300 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   f. Panel board TDP2, Main 250 AT, 300 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   g. Panel board TDP3, (SPARE), Main 400 AT, 500 AF, 3P, 230V, MCCB with NEMA 1 metal enclosure.
   h. Busbar copper (3 phase -1200 ampere rating each length) installed in busbar gutter. See Schedule of load for reference.
   i. Disconnecting mean, Main 1200AT, 1200 AF, 3P, 230V, MCCB in NEMA 3R Metal Enclosure. To be installed at service entrance concrete pedestal.

   NOTE: Bolt-on type, Nema Standard should be used. G.E., Schneider, Himel or approved equal. Refer to the plan for exact location of panel boards and circuit breakers. Any discrepancies or changes shall be promptly notified to the designer or consultant.
2. 9.5 m concrete poles, steel poles with pedestal and service entrance concrete pedestal in accordance with the plan.
   a. 9.5 m concrete pole with mounting brackets (9 sets for CP6, CP7, CP8, CP9, CP10, CP11, CP12, CP13 & CP14.
   b. Complete set of down guy (4 sets for CP9, CP10, CP13 & CP14).
   c. Steel pole with pedestal and mounting brackets (4 sets for CP2, CP3, CP4 & CP5).
   d. Service entrance concrete pedestal (1 set).
3. Supply and Installation of conductors wires, conduit pipes and support brackets in accordance with the plan.
   a. PVC orange pipe embedded all throughout. To be used only for lighting, exhaust fan and emergency light of the electrical house.
   b. RSC/IMC metal conduit for service entrance and exposed conduit.
   c. Utility and junction boxes should be PVC and deep type.
   d. Galvanized steel for fabricated support brackets.
4. Supply and Installation of copper conductors wires, cable tie and messenger wires in accordance with the plan.
   a. THHN and THWN copper stranded wire, 99.99% pure copper, fire retardant. Phelp dodge, Philflex or approved equal.
   b. 10 mm. diameter guy messenger wire.
   c. Tie cable (2.0 sq. mm. THHN wire) installed every 500 mm.
5. Supply and Installation of lighting fixtures/switches/outlets and other electrical components to be installed at electrical house.
   a. 9W LED tube light with diffuser (1 set).
   b. Emergency light twin head (1 unit).

c. Wall mounted exhaust fan (1 unit).
d. 2-gang switch, 15A 300 VAC.
e. 1-gang convenience outlet.

6. Restoration, repair & repainting of concrete walls to be chipped for conduit pipe raceway.
   a. Skim coat
   b. Cement
   c. Latex flat
7. Energization of circuit breakers including test and commissioning.
   a. Phase sequence test.
   b. Continuity test.
   c. Insulation test.
   d. Load test.
8. Consult inspectors for details and extent of work

C. Contractor of the said project must provide an as-built plan of the project at the end of the contract as a requirement for the release of their final billing.

D. Contractor's PCAB license should have specialization in electrical works.

E. For color/types of any fixtures or materials to be used on site, consult the end-user and the inspector for approval. Consult the plan and the scope of work for the extent of tasks of the contract. If possible, let the end-user sign your sample as proof of approval.

F. The plans, detailed drawings and these specifications shall be considered as complementing each other, so that what is mentioned or shown in one, although not mentioned or shown in the other, shall be considered as appearing on both. In case of conflict between the two, generally, the scope of work prevails.

G. Resident site engineer is a must for the projects to be undertaken by the contractor of the university. In cases where there are electrical works, it is required that an electrical engineer or a master electrician be a part of the contractor's team to supervise all electrical works. Safety engineer is a must as per DOLE requirement. Note: All key personnel should be included in the list of personnel for submission.

H. In cases of participation in two or more projects, the set of workers and foreman shall be different per project, however, the set of engineers and equipment may be reused.

I. Construction safety and health program as well as construction schedule (PERT/CPM/S-Curve) shall be provided by the winning bidder.

J. All public utilities used by the winning contractor in the construction of the project, such as electricity, water, telephone, etc., shall be for the sole account of the contractor.

K. See plans/consult the end-user and project inspector for details and extent of work. The silence of specifications, plans, special provisions and supplementary specifications as to any detail, or the apparent omission therein of detailed description or definition of the quality of materials and workmanship shall be regarded to mean that only materials and workmanship of first class quality are to be used or employed.