



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

BILL OF QUANTITIES

COMPLETION OF SCIENCE, TECHNOLOGY, AND APPLIED RESEARCH (STAR) CENTER BUILDING FOR MAIN CAMPUS					
ABC: ₱ 13,623,021.99			Bill of Quantities		
COLLEGE/UNIT/CAMPUS: CEIT/MAIN CAMPUS					
Item No.	Description	Unit	Quantity	Unit Price (Pesos)	Amount (Pesos)
I	PRELIMINARY WORKS AND EARTHWORKS (Pesos _____ _____ and _____ centavos)				
II	CONCRETE WORKS (Pesos _____ _____ and _____ centavos)				
III	MASONRY & TILE WORKS (Pesos _____ _____ and _____ centavos)				
IV	CARPENTRY WORKS (Pesos _____ _____ and _____ centavos)				
V	MISCELLANEOUS WORKS (Pesos _____ _____ and _____ centavos)				
VI	ELECTRICAL & MECHANICAL WORKS (Pesos _____ _____ and _____ centavos)				
VII	FIRE PROTECTION WORKS (Pesos _____ _____ and _____ centavos)				
VIII	PLUMBING WORKS (Pesos _____ _____ and _____ centavos)				

IX	PAINTING 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: _____

CAVITE STATE UNIVERSITY

SCOPE OF WORK:

A. **COMPLETION OF SCIENCE, TECHNOLOGY, AND APPLIED RESEARCH (STAR) CENTER BUILDING FOR MAIN CAMPUS**

GENERAL NOTES:

1. The project should be finished in 120 calendar days.
2. There is an existing structure. Actual site inspection is a must.
3. This set of specifications shall govern the methods of construction and the kinds of materials to be used for the proposed project shown in the plans and detailed drawings.
4. 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 and Earthworks**

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.

C. Earthworks

a. Excavation

1. This work includes excavation for parking and driveway.
2. Provide heavy equipment for excavation and levelling of road and parking.
3. Cutting and renovation of existing concrete stairs/porch of Engineering Science Building at North side.

II. **Concrete Works**

A. Cast-in place concrete (1,888.9 sq. m)

1. Concreting of driveway, parking, and perimeter walk around the building. Ready mix concrete should be used.
2. Driveway and parking should be 0.15m thick.
3. Provide base coarse to correct the parking and road levelling.
4. Provide 0.05m gravel bedding.
5. Concrete work should be rough cement finish.
6. Provide 16mm Ø RSB at 0.30m on center to be used as dowels for the continuation of structure.
7. Strength of concrete to be adopted shall be **3,500 psi at 28 days**.
8. Provide necessary tools and equipment needed for concrete works.
9. Construction of water tank concrete saddle is also included. See plan for details (S-9).
10. 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.
11. Compression and slump tests shall be made for every batch of concrete. 1 set of tests shall be made from any one batch of concrete and all 3 tests shall be made from the same batch.
12. 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. Use deformed bar grade 40.
2. Provide necessary tools and equipment needed for steel works.
3. See plan for details and extent of work.

4. 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.

III. Masonry and Tile Works

1. Plastering of existing concrete gutter, parapet and perimeter fence along Bancod Road.
2. All existing concrete and masonry works should be plastered plain cement.
3. Supply and installation of tiles at comfort, electrical and plumbing rooms.
4. Replacement of all damaged tiles including the side entrance of ES Bldg.
5. Remove and replace the existing septic tank (See plans).

IV. Carpentry Works

1. Provide necessary form lumber and scaffolding needed for the completion of the project.
2. Provide ceiling works for the whole third floor, for all comfort rooms and eaves.
 - a. Use 3/16" thick cement board for ceiling board.
 - b. Use lightweight steel frames as ceiling runner and joist.
 - c. Use 8mm deformed bar coated with primer and two (2) coats of QDE for ceiling hanger.
 - d. Provide 3" corneza for ceiling corners of hallway and all interiors ceiling corners.
 - e. Use pre-painted spandrel 4" for the whole area of eaves.
 - f. Provide ceiling ventilation for every 0.50 meter and all corners of the eaves.

V. Miscellaneous Works

Supply and installation of the following:

1. Doors

- | | | |
|------|------|---|
| 3.0 | sets | D-2 powder coated steel door & jamb; complete with all accessories |
| 6.0 | sets | D-3 powder coated steel door & jamb; complete with all accessories |
| 9.0 | sets | D-4 powder coated steel door & jamb; complete with all accessories |
| 18.0 | sets | D-5 dual spring door with 1/4" thick frosted finish glass on powder coated aluminum frame, complete with all accessories |
| 3.0 | sets | D-6 louver type swing door 1" x 2" aluminum louvers on powder coated aluminum frame, complete with all accessories |
| 1.0 | set | Aluminum door complete with all accessories with 1/2" thick colored glass on colored powder coated finish aluminum frame (2.0m x 2.10m) |
| 2.0 | sets | GD-1 aluminum roll up shutter with remote control (2.0m x 3.20m) |
| 6.0 | sets | GD-2 aluminum roll up shutter with remote control (4.50m x 3.20m) |

2. Windows

- | | | |
|------|------|--|
| 22.0 | sets | W-1 Sliding glass window with 1/4" thick reflective glass on powder coated aluminum frame, complete with all accessories |
| 36.0 | sets | W-2 Aluminum casement window with 1/4" thick reflective glass on powder coated aluminum frame, complete with all accessories |
| 5.0 | sets | W-3 Awning glass window with 1/4" thick reflective glass on powder coated aluminum frame, complete with all accessories |
| 4.0 | sets | W-4 Awning glass window with 1/4" thick reflective glass on powder coated aluminum frame, complete with all accessories |
| 4.0 | sets | W-5 Awning glass with 1/4" thick reflective glass on powder coated aluminum frame, complete with all accessories |
| 2.0 | sets | W-6 Awning glass window with 1/4" thick reflective glass on powder coated aluminum frame, complete with all accessories |

3. Stainless railing (Stairs, hallways, grab rail for PWD C.R. including the entrance stair at ES Bldg.). Provide 1.50mm thick stainless tubing for railings. Use 2" and 1" tubing.
4. Provide heavy duty lever type door knob for all existing doors (24 pcs)
5. Pre-painted G.I. louvered sun shade (see plan for details)
6. Two sets of fire escape with steel gate (staircase type). See plan for details.
7. Supply and application of two (2) coats of waterproofing for concrete gutter and roof deck.

VI. Electrical and Mechanical Works

1. Supply and installation of panel boards and circuit breakers.

Specifications:

- a. 3 sets LP1, LP2 & LP3 12 Branches, 1 Main, 2P
Main 50AT, 100AF, 2P, 240V
12-15AT
- b. 1 set PP1, 16 Branches, 1 Main, 2P
Main, 125AT, 300AF, 2P, 230V
16-20AT
- c. 2 sets PP2 & PP3, 12 Branches, 1 Main, 2P
Main, 125AT, 300AF, 2P, 230V
12-20AT
- d. 1 set Panel board MPD, 10 Branches, 1 Main, 3P
Main 300AT, 400AF, 3P, 230V
3-125AT, 3-50AT, 1-30AT, 3-20AT

Note: Bolt-on Type, Nema Standard should be used.

2. Supply and installation of CU, conductor wires and RSC/PVC conduit/ junction box/ utility box from electrical panels to power outlets/ light outlet in accordance with the plan.
 - a. PVC conduit orange pipe embedded all throughout. Use Neltex, Emerald, Moldex or approved equal.
 - b. RSC/IMC metal conduit pipe for service entrance and exposed conduit raceway. Use Panasonic, Emerald or approved equal.
 - c. Utility and junction boxes should be PVC and deep type. Use Neltex, Emerald, Moldex or approved equal.
 - d. Conduit fittings and support brackets.
 - e. THHN CU. Conductor wires (99.9% copper conductor, fire retardant). Use Phelp Dodge, Philflex or approved equal. See schedule of loads for proper wire size and color coding.
3. Supply and installation of electrical fixtures/ switches/ outlets and other electrical devices.
 - a. Wide series switches (Bticino, National, or its equivalent)
 - b. Two-gang universal convenience outlets with ground (108 sets). Panasonic, National or its equivalent
 - c. 2-18W (4") LED tube light with diffuser (96 sets)
 - d. 1-18W (4") LED tube light with diffuser (66 sets)
 - e. Pinlight 9W (18 sets)
 - f. ACU window type 2HP, 230V, 1 phase, 60Hz, $\geq 18,750\text{kJ/h}$ cooling capacity, R32 refrigerant, inverter type (27 units)
 - g. Emergency light twin head (30 units)
 - h. ACU outlets
 - i. Three phase kWh electric meter
4. Supply, installation, test and commissioning of the following:
 - a. Pole Mounted Distribution transformers accessories, groundings, connectors and other miscellaneous
 - b. Include testing and commissioning of existing Pole Mounted Distribution Transformers
Visual Inspection, Insulation Resistance Test, Turns Ratio Test, Winding Resistance Test, Power Factor and Dissipation Factor Test, Sweep Frequency Response Analysis (SFRA), Oil Analysis (for oil-filled transformers), and Impulse Test (High Voltage Test) Submit test result to inspector with sign and seal of Professional Electrical Engineer.
5. Include tapping to existing 13.8 kV primary lines. Provide necessary connectors and equipment for tapping works.
6. Consult inspectors for details and extent of work.

VII. Fire Protection Works

1. Supply and installation of the following:
 - a. Three units fire hose with cabinet
 - b. 6 units stored pressure type HCFC 123 CEA (green) fire extinguisher

- c. 3 units Fire Alarm bell with control
- d. 1 unit addressable Fire alarm control panel
- e. 30 units smoke detector with wirings and metal conduit pipings.
- f. Dry stand pipe 2" with siamese fittings

VIII. Plumbing Works

A. Water Supply Line

- 1. Adopt PPR pipes (PN 20) and fittings for water line
 - a. 2", 1" and ½" Ø for water line
 - b. Provide gate valve for every comfort room
 - c. 2" PPR pipes and fittings from cistern tank to stainless tank and from existing main lines to cistern tank. Provide PPR stop valve 2" from main line.
 - d. 1" PPR pipes and fittings from stainless tank to all comfort rooms.
- 2. Replacement of all broken plumbing fixtures is included.
- 3. The water supply of ground floor comfort rooms is direct from the main line.
- 4. The water supply going to the water tank should be under the roof above the roof beam.
- 5. Supply and installation of two units Stainless tank, horizontal type with partition. Thickness: 1.20mm; Length: 2.60m; Diameter: 2.00m
- 6. Supply and installation of water pump (2.50HP)
- 7. Tapping to the source is included.
- 8. No pipe should be embedded without testing it to leak.

B. Rehabilitation of existing sewer lines

IX. Painting Works

- 1. This includes repainting of the exterior and interior of the whole building including the connecting bridge and fence.
- 2. Painting of the base board is included.
- 3. This also includes painting of the marking in the parking area.
- 4. For painting of Wood Components:
 - a. Apply one coat of flatwall enamel white paint. Allow to dry overnight.
 - b. Repair minor surface imperfections with glazing putty. Let dry then sand.
 - c. Apply at least two coats of Quick Dry Enamel in the desired color. Allow an overnight intercoating interval.
- 5. For painting of metal components:
 - a. Apply epoxy primer by brush or spray. Allow to dry for 24 hours. Apply suitable putty on imperfections.
 - b. Apply at least two coats of Quick Dry Enamel paint in the desired color.
- 6. For painting of concrete components:
 - a. Treat the surface with concrete neutralizer. Mix one part with 16 parts water by volume.
 - b. Apply skim coat as primer. Repair minor imperfections with a suitable putty. Let dry, then sand.
 - c. Apply at least two coats of colored dirt resistant semi-gloss latex (factory mixed).

Note: Color of paint will depend upon the preference of the end-user. Paints and its accessories should be Boysen or approved equal.

- 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. 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.
- E. 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.**
- F. 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. Likewise, master plumbers must supervise plumbing works. It can be considered when only one person is

the master plumber and master electrician at the same time as long as his major duty is supervision of both fields. Safety engineer is a must as per DOLE requirement. **Note: All key personnel should be included in the list of personnel for submission.**

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