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

BILL OF QUANTITIES

CONSTRUCTION OF CVMBS ACADEMIC BUILDING
ABC: ₱ 16,980,000.00 **Bill of Quantities**
COLLEGE/UNIT/CAMPUS: MAIN CAMPUS

Item No.	Description	Unit	Quantity	Unit Price (Pesos)	Amount (Pesos)
I	EARTHWORKS (Pesos _____ _____ _____ and _____ centavos)				
II	CONCRETE WORKS (Pesos _____ _____ _____ and _____ centavos)				
III	MASONRY/TILE WORKS (Pesos _____ _____ _____ and _____ centavos)				
IV	CARPENTRY WORKS (Pesos _____ _____ _____ and _____ centavos)				
V	TRUSSES AND ROOFING WORKS (Pesos _____ _____ _____ and _____ centavos)				
VI	MISCELLANEOUS WORKS (Pesos _____ _____ _____ and _____ centavos)				
VII	ELECTRICAL WORKS (Pesos _____ _____ _____ and _____ centavos)				
VIII	FIRE PROTECTION WORKS (Pesos _____ _____ _____ and _____ centavos)				
IX	PLUMBING WORKS (Pesos _____ _____ _____ and _____ centavos)				

X	PAINTING WORKS (Pesos _____ _____ _____ and _____ centavos)				
	GRAND TOTAL				_____
	Write grand total in words	_____ _____ _____			

Submitted by: Date: _____
Name of Bidder/Bidder's Representative: _____
Position: _____
Construction Company/Contractor: _____

SCOPE OF WORK:

A. **CONSTRUCTION OF CVMBS ACADEMIC BUILDING**

GENERAL NOTES:

1. The project should be finished in 240 calendar days.
2. Actual site inspection is a must.
3. Building permits, necessary clearances and other government taxes should be shouldered and settled by the contractor.
4. 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.
5. 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, the same should be referred to the project inspector for resolution.
6. 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. Earthworks

A. Mobilization/Demobilization
Provide the following:
1. Billboard
2. Bankhouse with office
3. Temporary comfort rooms
4. Site temporary enclosure may be blue sack or any suitable materials that may enclose the workplace.

B. Excavation/ Backfilling/ Clearing
1. This work includes excavation for all column/wall footings, tie beam, stair footing, catch basin, septic tank, sewer piping, and water piping.
2. See plan for details.

C. Demolition
1. There is an existing structure for total demolition.
2. Use necessary tools and equipment for the demolition of the structure.
3. Clearing and hauling is included.
4. Consult the end-user/ project inspector for the disposal of all demolished structures.

D. Additional fill and soil poisoning
1. This scope involves hauling,spreading, leveling and compacting of 0.05 m. thick gravel fill on prepared compacted earth soil bedding.
2. Provide additional fill.
3. Provide 0.05m. thick gravel fill on slab on fill, footings, catch basin and septic tank.
4. The entire area for the proposed building should be treated with termite proofing. Use water base termite proofing. Waterproofing should be done by accredited termite proofing specialists.

E. Demobilization includes cleaning up of site, clearing, hauling and disposal of waste and construction debris. Restoration of any damages shall also be done before exiting the area.

F. The area should be cleared/cleaned before and after construction work at least ten 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.

G. The area should be cleared/cleaned before and after construction work at least ten 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.

II. Concrete Works

A. Ready mix concrete
1. Concrete works include columns, footings, stiffener columns, slab, beams, stairs, roof beams, gutter, lavatory counters, ledge/canopy, elevator and all other concrete components needed to complete the structure.
   - Provide lintel beams for the opening of windows and doors.
2. Strength of concrete to be adopted shall be **3,500 psi.**
3. Provide concrete pathwalk with 4" CHB zocalo around the perimeter of the building. W=1.0 m.; Thk.= 0.10 m.
4. The canopy at Grid A to B/1 to 2 should cover the corner (which is L-shaped).

Refer to Sheet A-3.

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. 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.
9. 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/Tile 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 6" for the perimeter/exterior walls and septic tank.
      b. CHB 4" for interior/partition walls.
   2. Masonry works should be plastered plain cement.

B. Tile Works

   Supply and installation of the following:
   1. Ceramic colored tiles (locally-made) 0.40 m. x 0.40 m. for the whole area of ground, second and third floors of the building. Tiles must be accented with dark colors. Use unglazed ceramic tiles for hallway and ramp.
   2. Granite tiles with groove for the stairs.
   3. Natural deco stone for the front walls (see plan)
   4. For the comfort room:
      a. Ceramic colored tiles 12" x 12" for flooring
      b. 24" x 24" unglazed granite tiles for the entire wall (from floor to ceiling)
      c. Granite slab for the lavatory concrete counter including 0.60 m of its wall.
   5. Consult the end user for color preference of tiles.

IV. Carpentry Works

1. Provide necessary form lumber and scaffolding needed for the completion of the project.
2. Provide ceiling works for the whole ground, second and third floors.
   a. Use acoustic board 20mm thick for ceiling boards.
   b. Use metal furring as ceiling runner and ceiling joist at 0.40 m. on center both ways.
   c. Provide decorative wooden molding to all ceiling perimeter and corners.
   d. Provide 3/16" x 1" flat bar coated with primer and paint for ceiling hanger every 1.20 m. both ways.
   e. Use pre-painted spandrel 4" for the whole area of eaves.
   f. Provide ceiling ventilation for every 3 meters and all corners of the eaves.

V. 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.
   5. Use galvanized CEE purlins galvanized 16, 2" x 6" @ 0.60 m. on center.

6. Provide 16 mm. Ø plain bar with standard turnbuckle for horizontal cross bracing
7. Provide 4-16 mm. Ø anchor bolts with nut and washer for each support.
8. Provide 12 mm. Ø with nuts and washers for sag rod.

B. Roofing:
1. Adopt gauge 26 (0.5 mm.) rib type pre-painted roof sheet.
2. Adopt gauge 26 x 18 (0.5 mm.)pre-fabricated and pre-painted ridge roll.
3. Adopt gauge 26 (0.5 mm.) pre-fabricated and pre-painted flushing.
4. All attachment for roofing sheet and ridge roll shall be 2 1/2" tek screw for metal.
5. Provide water sealant for all attachment (water sealant should be provided for both inside and outside surface of tek screw head).

VI. Miscellaneous Works

Supply and Installation of the following:

1. Doors
   a. **14.0** sets of D-1 Pre painted steel door with view window on steel door jamb; complete with all accessories.
   b. **4.0** sets of D-2 Pre painted steel flush door on steel door jamb;complete with all accessories.
   c. **1.0** set of D-3 Pre painted steel flush door on steel door jamb;complete with all accessories.
   d. **9.0** units of Phenolic toilet partition system with doors for the CR cubicle complete & all accessories such as an indicator door lock.
   e. **2.0** sets of D-5 Aluminum frame door;complete with all accessories
   Note: All door knobs should be heavy duty lever type.
2. Windows
   a. **17.0** sets W-1 Aluminum casement window with 1/4" thk. clear glass on powder coated finish aluminum frame; complete with all accessories.
   b. **38.0** sets W-1A Aluminum casement window with 1/4" thk. clear glass on powder coated finish aluminum frame; complete with all accessories.
   c. **12.0** sets W-2 Aluminum sliding window with 1/4" thk. clear glass on powder coated finish aluminum frame complete with all accessories.
   d. **3.0** sets W-3 Aluminum sliding window with 1/4" thk. clear glass on powder coated finish aluminum frame complete with all accessories.
   e. **1.0** set W-4 Aluminum sliding window with 1/4" thk. clear glass on powder coated finish aluminum frame complete with all accessories.
   f. **4.0** sets W-5 Aluminum casement window with 1/4" thk. clear glass on powder coated finish aluminum frame; complete with all accessories.
   g. **2.0** sets W-6 Aluminum fixed window with 1/4" thk. clear glass on powder coated finish aluminum frame.
3. PVC Partition Walls
   Supply and installation of PVC Accordion Partition Wall at second and third floors (Grid B, C, and D/ 2 to 4)
4. Roll up grill shutters
   Supply and installation of three units aluminum roll up grill shutters for D-6 & D-7
5. Stainless Railing (Stairs, Fire escape, Ramp and grab rail for PWD C.R.)
   Provide 1.5 mm thick stainless tubing for railings. Use 2" & 1" tubing.
6. Fire Escape Ladder
   Provide 1/4" x 2" stainless flat bar with 1" stainless tubing.
7. Water Proofing

Provide waterproofing for the whole gutter and comfort room (3 - coats)

VII. Electrical Works

1. Supply and Installation of panel board and circuit breakers in accordance with the plan. G.E, Himel, Schneider or approved equal.
   Note: Bolt-on type, Nema Standard should be used.
2. Supply and Installation of conductors and PVC conduit/junction box/utility box from main panel to convenience outlet/light outlet.

a. PVC conduit orange pipe. Neltex or approved equal.
b. Utility and junction boxes should be PVC and deep type.
c. THHN and THWN 99.9% pure copper conductor wires, fire retardant. Phelps dodge, Philflex or approved equal. Refer to the Schedule of Loads for proper wire size and color.

3. Supply and Installation of electrical fixtures/switches/outlets and other electrical devices.
    a. Switches (Bticino, National or its equivalent)
    b. Convenience outlets (Bticino, National or its equivalent)
    c. 2-18W (4') LED fluorescent lamp w/ diffuser (102 sets). Philips, Firefly or approved equal.
    d. 2-9W (2') LED fluorescent lamp w/ diffuser (6 sets). Philips, Firefly or approved equal.
    e. Ceiling orbit fan 16" high speed (32 units). Standard or approved equal.
    f. Pinlight 9W (6 sets). Philips, Firefly or approved equal.
    g. Emergency light twin head (18 units). Philips, Firefly or approved equal.
    h. Exhaust fan 12" (9 units). Firefly, Akari or approved equal.
    i. KWh electric meter
    j. EXIT light per floor
    k. Consult inspectors for details and extent of work.
4. Include tapping to the source. Electrical feeder line is to be connected from MDP to distribution transformer. Provide the necessary THWN copper conductor wires, messenger wires, connectors & equipment for the wiring installation.
5. Energization of circuit breakers including test and commissioning.
    a. Phase sequence test.
    b. Continuity test.
    c. Insulation test.
    d. Load test.
6. Consult plan for details and extent of works.
   Note: Electrical testing and guarantee, electrical supervision and final electrical inspection report should be signed and sealed by Professional Electrical Engineer with notary public.

VIII. Fire Protection Works

Supply and Installation of the following:

1. Three units firehose with cabinet
2. 9 units stored pressure type HCFC 123 CEA fire extinguisher. Amerex B402 or approved equal.
3. 3 units Fire alarm bell with control. Honeywell/Edwards or approved equal.
4. 1 unit fire alarm control panel (Addressable type). Honeywell/Edwards or approved equal.
5. 25 units smoke detector (Addressable type). Honeywell/Edwards or approved equal.
6. Dry stand pipe 2" with siamese fitting

IX. Plumbing Works

A. Water Supply Line
    1. Adopt PPR pipes and fittings for water lines.
        a. 1" and 1/2" Ø for water line
        b. Provide a gate valve for every comfort room.
    2. Tapping to the source is included.
    3. No pipe should be embedded without testing it to leak.

B. Sewer Line and Downspout
    1. Adopt PVC heavy duty orange pipes and fittings (Sanimold type with O-ring or its equivalent) for ventilation, downspout and the whole sewer line system including the septic vault fittings.
        a. Use 4" Ø for the main line and water closet.
        b. Use 2" Ø for lavatory and ventilation.
    2. Provide 4" pvc pipe for downspout.
    3. Provide one unit septic tank with pipes extending to the nearest disposal

area.
4. Provide catch basin with concrete reinforced pipes. See plan for sizes.

C. Fixture and Tile Works

Provide the following for the comfort rooms:

1. Brass floor drain (14 pcs.)
2. Colored tank type water closet, counter top type and wall hung lavatory.
3. Brass Roof Drain Dome Type (16 pcs.)
4. American standard made faucets (plain bibb) for every cubicle.
   Note:All fixtures must be HCG, American Std, or approved equivalent complete with all accessories.

X. Painting Works

The whole building should be painted (both exterior & interior) including window grills.

A. Wood/Metal
   a. Apply epoxy primer by brush or spray. Allow to dry for 24 hours. Apply suitable putty on imperfections, then, sand.
   b. Apply at least two coats of Quick Dry Enamel in the desired color.

B. Concrete
   a. Treat the surface with concrete neutralizer. Mix one part with 16 parts water by volume.
   b. Apply Latex flat as primer. All concrete surfaces must be applied with skim coat. Repair minor surface imperfections with a suitable putty. Let dry, then sand.
   c. Apply at least two coats of colored dirt resistant semi gloss latex paint (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. Building permits, necessary clearances and other government taxes should be shouldered and settled by the contractor.

D. 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.

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. 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.**

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. 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.