



BILL OF QUANTITIES

CONSTRUCTION OF TWO-STOREY BRITE CENTER ABC: ₱ 6,915,938.59 COLLEGE/UNIT/CAMPUS: BRITE CENTER - MAIN CAMPUS			Bill of Quantities		
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 AND TILE WORKS (Pesos _____ _____ and _____ centavos)				
IV	CARPENTRY WORKS (Pesos _____ _____ and _____ centavos)				
V	MISCELLANEOUS WORKS (Pesos _____ _____ and _____ centavos)				
VI	TRUSSES & ROOFING WORKS (Pesos _____ _____ and _____ centavos)				
VII	ELECTRICAL 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. CONSTRUCTION OF TWO-STOREY BRITE CENTER

GENERAL NOTES:

1. The project should be finished in 210 calendar days.
2. 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. Permit Processing, etc.

1. Taxes, fees, etc.
2. Conduct confirmatory soil boring tests.
3. Provide certified true copy of clearances and permits.
4. Include application for Certificate of Occupancy.

B. 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.
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. Clearing the Site

1. The building site shall be levelled according to the plans and cleared of rubbish, roots and other perishable and objectionable matters to a suitable subgrade.
2. All such unsuitable materials shall be removed from the building site and spread uniformly over the areas adjacent to the proposed building, or otherwise disposed of as may be directed by the project inspector in charge of the construction.
3. 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.

b. Staking out the building lines

1. The building lines shall be staked out and all lines and grades shown in the drawing established before any excavation is started. Batter boards and reference marks shall be erected at such places where they will not be disturbed during the excavation of the building.

c. Excavation

1. This work includes excavation for all columns, wall footings, tie beams, catch basins, cistern tank, and septic tank.

d. Backfilling Works

1. Backfill and fills shall be placed in layers not exceeding 150 mm in thickness, and each layer shall be thoroughly compacted by wetting, tamping and rolling.
2. Conduct Field Density Test (FDT) to ensure the compaction of the soil.

e. Additional Fill

1. Provide additional fill.
2. Gravel fill should be 0.50m thick.

f. Soil Poisoning

1. The area should be treated with termite proofing. Termite proofing should be conducted by an accredited termite specialist.
2. The contractor shall provide a service guarantee covering the treatment of termite infestation or the repetition of the above termite control services without extra cost to the end-user if any manifestation of recurrence or infestation occurs during the guarantee period of one year.

II. Concrete Works

A. Cast-in place concrete

1. Concrete works include columns, footings, stiffener columns, slab, beams, roof beams, ledge/canopy, and all other concrete components needed to complete the structure.
 - Provide lintel beams for the opening of windows and doors. Use 0.15m x 0.20m reinforced with 10mm Ø bars.
2. Strength of concrete to be adopted shall be **3,500 psi at 28 days** equivalent to Class A mixture.
3. Provide trial mix for cast-in place concrete.
4. Concrete works should be plain cement finish.
5. Provide necessary tools and equipment needed for concrete works.
6. 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.
7. 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.
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 at ground floor.
2. Use deformed bar grade 40.
3. Provide necessary tools and equipment needed for steel works.
4. See plan for details and extent of work.
5. 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

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.
 - 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. Use Ceramic floor tile 40cm x 40cm (locally made) for the whole floor area.
2. For the comfort room:
 - a. Unglazed ceramic colored tiles 30cm x 30cm for flooring
 - b. Glazed ceramic colored tiles 30cm x 30cm for the entire wall (from floor to ceiling)
 - c. Granite tiles 60cm x 60cm for all lavatory concrete counters
3. Interior and exterior corners of tiled floors and walls shall be provided with the necessary tile mouldings.
4. Consult the end user for color and design 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 second floor only.
 - a. Use fiber cement board 3/16" thick for ceiling boards.
 - b. Use metal furring as ceiling runner and ceiling joist at 0.40 m. on center both ways.
 - c. Use wall angle on the perimeter walls.
 - d. Use rivet or black screw for connections.
 - e. Provide 3" decorative wooden molding to all ceiling perimeter and corners.
 - f. Provide rod suspension hanger for every 1.20 m. both ways.
 - g. Use pre-painted spandrel 4" for the whole area of eaves.

h. Provide ceiling ventilation for every 1 meter and all corners of the eaves.

V. Miscellaneous Works

Supply and Installation of the following:

1. Doors

- 6.0 sets of D-1 1.60m x 2.10m Aluminum frame door complete with all accessories with $\frac{3}{8}$ " thick clear glass on colored powder coated finish aluminum framing
- 2.0 sets of D-2 Aluminum frame sliding door complete with all accessories with $\frac{3}{8}$ " thick clear glass on colored powder coated finish aluminum framing
- 1.0 sets of D-3 0.80m x 2.10m Flush door complete with heavy duty accessories

2. Windows

- 2.0 sets of W-1 Aluminum Sliding-type windows in powder coated aluminum frame with 1/4" thick clear glass. complete with all accessories
 - 3.0 sets of W-2 Aluminum Sliding-type windows in powder coated aluminum frame with 1/4" thick clear glass. complete with all accessories
 - 4.0 sets of W-3 Aluminum fixed windows in powder coated aluminum frame with 1/4" thick clear glass. complete with all accessories
 - 9.0 set of W-4 Aluminum Sliding-type windows in powder coated aluminum frame with 1/4" thick clear glass. complete with all accessories
- 3. Provide stainless railings for stairs. Use 2" Ø and 1"Ø, 1.50mm thick (304) stainless tubing.
 - 4. Glass breakage caused in executing the work or by fault installation shall be replaced by the contractor without extra cost.
 - 5. Improperly installed glass which does not fully meet the requirements of its grade will not be accepted and shall be replaced without extra cost.

VI. Trusses and Roofing Works

A. Trusses:

- 1. See plans for sizes of bar and other details for the installation of steel trusses and CEE purlins.
- 2. This work also includes painting of two (2) coats of epoxy primer.
- 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. Provide anchor bolts with nuts and washer for each support.
- 6. Provide 12 mm. Ø with nuts and washers for sag rod.
- 7. Use CEE purlins 2 - 2" x 6" for fascia board.

B. Roofing:

- 1. Adopt gauge 26 (0.5 mm.) twin rib type long span colored roofing sheets.
- 2. Adopt gauge 26 0.40m x 0.5mm thick colored G.I. ridge roll.
- 3. Adopt gauge 26 (0.5 mm.) prefabricated and pre-painted fascia cover.
- 4. All attachment for roofing sheet and ridge roll shall be 4" teck screw for metal.
- 5. Provide water sealant for all attachment (water sealant should be provided for both inside and outside surface of teck screw head).

VII. Electrical Works

- 1. Supply and Installation of panel boards and circuit breakers in accordance with the plan.
 - a. DP1, DP2 and MDP. Specification of panel and circuit breakers are indicated in the schedule of load/electrical plan.
 - b. DISCONNECTING MEAN - Main (125AT, 200AF, 3P, 230V, MCCB) in Nema 3R enclosure
 - c. 30AT, 2P, 230V Circuit Breaker with Nema 3R Panel enclosure for ACU power (6 sets)

- d. Manual Transfer Switch with 125AT MCCB and Nema 3R Metal enclosure
Note: Bolt-on Type, NEMA Standard should be used.
- 2. Supply and installation of copper conductor wires and PVC/IMC/RSC conduits, junction, AMCO and utility box from electric panels to electrical devices
 - a. PVC conduit orange pipe for all embedded electrical raceway.
 - b. IMC or RSC pipe for service entrance and all exposed electrical raceway.
 - c. Utility and junction boxes should be PVC and deep type.
 - d. THHN/THWN copper conductor wires. Phelps Dodge or Philflex or approved equal. Refer to the Schedule of Loads for proper color coding of wires.
 - e. Support brackets/hangers, clamps, and rods should be galvanized steel.
- 3. Supply and Installation of electrical fixtures/switches/outlets and other electrical devices in accordance with the plan.
 - a. 2-18W T8 (4ft.) LED fluorescent lamp w/ diffuser
 - b. 1-12W (6 inch) LED surface mounted light
 - c. Emergency light twin head with one-gang outlet.
 - d. Wide Series Switches (Bticino, National or its equivalent)
 - e. Convenience outlets, universal type, with grounding (17 sets). Bticino, National or its equivalent.
 - f. Two-gang GFCI type, 20A, universal type for countertop outlets (3 sets)
 - g. Electric KWH meter, Three phase, 230V, 200 Amps, 60Hz, 4 wire, Digital Type with ST7 meter base
- 4. Supply and Installation of concrete pole and three phase distribution transformers. See electrical plan for the exact location.
 - a. 1-13.5m concrete poles, Class 3A, complete with pole dressing, insulators, pole grounding and accessories.
 - b. Distribution transformers 3-50 kVa, 13.8 kV/230V, 60 Hz, oil immersed, Amorphous, pole mounted.
 - c. Distribution transformer accessories, groundings, connectors, and support brackets.
Note: Include tapping to primary lines, energization, testing and commissioning of transformers.
- 5. Supply and installation of steel post with pedestal, secondary accessories and attachments (8 sets).
- 6. Supply and installation of 1 set electrical service entrance concrete pedestal, copper conductor wires, metal conduits and accessories. See E-8 for specifications and details.
- 7. Electrical wiring and layout is to be connected from MDP to distribution transformer as indicated in the plan. Provide the necessary connectors and equipment for the wiring installation.
- 8. Supply and installation of 12kW, three phase, 230V, 60Hz, Diesel Power Generator Set, silent type with generator housing.
- 9. Include tapping to the source, electrical testing and commissioning.
 - a. Continuity test.
 - b. Insulation test.
 - c. Phase sequence test
- 10. Supply and installation of the Fire Detection Alarm System and Fire Extinguisher.
 - a. 1 set of Fire Alarm Control Panel, 2 conventional input zones, with two 12V, 4Ah backup batteries.
 - b. 6 sets of smoke detectors.
 - c. 2 sets of fire alarm bells.
 - d. PVC orange conduits and conductor wires. See plan for specification.
 - e. 6 sets of Brand New Fire Extinguisher, ABC Dry Chemical, 10 LBS, Refillable, tested and approved by BFP, Bureau of Philippine Standards, with wall bracket.
- 11. Consult inspectors for details and extent of work.

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. Plumbing Works

A. Water Supply Line

1. Adopt (PN 20) PPR pipes and fittings for water lines.
 - a. Supply and installation of 25 mm. PPR pipes with 2 pcs. stop valve from source.
 - b. Use 25 mm. Ø from source to comfort rooms.
 - c. Use 20 mm. Ø for inside of comfort rooms.
 - d. Provide gate valve for the comfort room.
2. Tapping to the source is included.
3. No pipe should be embedded without testing it to leak.

B. Sewer Line

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 sewer lines
 - b. Use 2"Ø and 3" Ø for lavatory.
2. Provide one unit septic tank.

C. Fixtures

Supply and Installation of the following:

1. 1 unit of heavy duty spray bidet for comfort room.
2. 1 set of Colored Water Closet (tank type)
3. 4 sets of wall hung lavatory complete with all accessories
4. 1 Floor drain (brass)

Note: All fixtures must be HCG, American Std, or approved equivalent complete with all accessories.

IX. Painting Works

The whole new structure should be painted (both exterior & interior) including doors.

A. Wood

1. Apply one coat of flatwall enamel white. Allow to dry overnight.
2. Repair minor surface imperfection with glazing putty. Let dry then sand.
3. Apply at least two coats of Quick Dry Enamel in the desired color. Allow an overnight intercoating interval.

B. Metal

1. Apply epoxy primer by brush or spray. Allow to dry for 24 hours. Apply suitable putty on imperfections.
2. Apply at least two coats of Quick Dry Enamel in the desired color.

C. Concrete

1. Treat the surface with concrete neutralizer. Mix one part with 16 parts water by volume.
2. Apply skim coat as primer. Repair minor surface imperfections with a suitable putty. Let dry, then sand.
3. 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. 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.