

TECHNICAL SPECIFICATIONS

Name of Project: REPAIR AND IMPROVEMENT OF BAPTC DORMITORY BUILDING

Location: STRAWBERRY FIELDS, BETAG, LA TRINIDAD, BENGUET

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ITEM B.5 - PROJECT BILLBOARD / SIGNBOARD

Material Requirements

Tarpaulin

- The design and format of the tarpaulin shall have the following specifications:
- Color: White
- Size: 8 ft. x 8 ft.
- Resolution: 70 dpi
- Font: Helvetica
- Font Size of Main Information : 3 inches
- Font Size of Sub-Information : 1 inch
- Font Color : Black
- Suitable Frame : Rigid wood frame with post; and
- Posting: Outside display at the project location after award has been made.

The information shall contain but not limited to i.) logo of the funding agencies, ii.) the name of implementing agencies, iii.) name of contractor, iv.) project's title, location, cost and description, v.) project details to include duration, date started, target date of completion and project status, and vi.) COA Anti-corruption Hotline.

The display/and or affixture of the picture, image, motto, logo, color motif, initials or other symbol or graphic representation associated with the top leadership of the project proponent or implementing agency/unit/office, on project billboard, is considered unnecessary. (General Guidelines No. 2.2.6)

Post and Frame

Posts and frames/braces shall be made from good lumber with a 2X3 and 2x2 inches size respectively and shall be well-seasoned, straight and free of injurious defects. The frame will be covered with 2 pieces ¼ inch thick ordinary plywood where the tarpaulin will be attached.

Method of Measurement

The quantities of project billboard shall be in pieces of such signs of the size specified, including the necessary posts and supports erected and accepted.

Basis of Payment

The quantities measured as determined in the Method of Measurement, shall be paid for at the contract unit price for the Pay Items shown in the Bid Schedule which price and payment shall be full compensation for furnishing and installing project billboard, all labor, equipment, tools and incidentals necessary to complete the Item.

Payment will be made under:

| Pay Item No. | Description                   | Unit of Measurement |
|--------------|-------------------------------|---------------------|
| B.5          | PROJECT BILLBOARD / SIGNBOARD | EACH                |

ITEM B.7 (2) – OCCUPATIONAL SAFETY AND HEALTH PROGRAM

B.7 (2).1 Description

A Company Safety Policy which shall serve as the general guiding principles in the implementation of safety and health on site duly signed by the highest company official or his duly authorized representative who has the over---all control of project execution and should include the contractor's general policy towards occupational safety, worker's welfare and health, and environment.

A Safety policy, which shall include the commitment that the contractor shall comply with DOLE minimum safety requirements, including reporting requirements of the Occupational Health and Safety Standards (OSHS), and other relevant DOLE issuances. These may include, but are not limited to the following:

- a. Registration (Rule 1020 and DO 18---02)
- b. Report of Safety Committee Organization (Rule 1040)
- c. Notification of Accidents and Occupational Illnesses (Rule 1050)
- d. Annual Work Accident/Illness Exposure Data Report (Rule 1050)
- e. Application for installation of mechanical/electrical equipment for construction of structure for industrial use (Rule 1070 and 1160)
- f. Annual Medical Report (Rule 1960)

Specific Construction Safety and Health Program shall contain the tendering agency's requirements in addition to the minimum requirements under the appropriate sections of D.O. No. 13 whenever deemed as applicable.

B.7 (2)2 Method of Measurement

Payment shall be made on a proportional basis, calculated by multiplying the percentage rate of physical progress to the total lump sum amount every progress billing.

B.7 (2).3 Basis of Payment

Payment will be made under:

| Pay Item Number | Description                            | Unit of Measurement |
|-----------------|--|---------------------|
| B.7 (2)         | OCCUPATIONAL SAFETY AND HEALTH PROGRAM | Lump sum            |

ITEM B.9 – MOBILIZATION / DEMOBILIZATION

B.9.1 Description

This item shall consist of the mobilization and demobilization of equipment needed for the project. In addition, this item also includes the cleaning of the project site including its surroundings before the final inspection.

B.9.2 Method of Measurement

The accepted quantities, measured as prescribed in section B.9.1 shall be paid for at the contract unit price for mobilization/ demobilization which price and payment shall be full compensation for furnishings and placing all materials, including all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

B.9.3 Basis of Payment  
Payment will be made under:

| Pay Item Number | Description                   | Unit of Measurement |
|-----------------|-------------------------------|---------------------|
| B.9             | MOBILIZATION / DEMOBILIZATION | LUMP SUM            |

ITEM 801 (1) – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

803(1) 1 Description  
This work includes furnishing of all labor, materials, and equipment required to carry out of removal of obstructions, demolition of damaged fiber cement ceiling boards, removal of window frames; removal of floor tiles, removal of old paint and other structures not otherwise provided for in the Specifications.

The Contractor shall keep all pavements and landing areas to and from the site of the disposal area clean and free of mud, dirt and debris during and after the execution of disposal. Disposal of debris and materials shall be as directed by the Engineer.

803(1) .2 Construction Requirements  
The demolition work shall be carried out by approved methods and suitable equipment, skilled labor and appropriate temporary works such as scaffoldings to ensure safety in demolition works as well as in the adjacent area.

Materials coming from the demolition works, shall remain the property of the Procuring Entity, the designated part of which shall be stored by the Contractor at places specified by the Engineer’s authorized Representative.

803(1) 3 Method of Measurement  
Payment shall be made on a proportional basis, calculated by multiplying the percentage rate of physical progress to the total lump sum amount every progress billing

| Pay Item Number | Description                            | Unit of Measurement |
|-----------------|--|---------------------|
| 801(1)          | REMOVAL OF STRUCTURES AND OBSTRUCTIONS | LUMP SUM            |

ITEM 1003(1)a1 – CARPENTRY AND JOINERY WORKS

1003(1)a1.1 Description  
This item shall consist of furnishing all required materials, tools, equipment and labor and performing all operations necessary of the satisfactory completion of all carpentry and joinery works in strict accord with applicable drawings, details and these Specifications.

Finished Carpentry  
This Item shall consist of the installation of fiber cement ceiling boards on metal frame and canopy roof as indicated in the plan and specification.

1003(1)a1.2 Materials and Construction Requirements

- a. Polycarbonate sheet, 6 mm thick supported by aluminum brackets attached to wall.
- b. Fiber cement board, 4.5 mm thick attached to existing ceiling frame. Damaged wall angle bar and carrying channels must be replaced with the same materials before installing the ficem boards..

1003(1)a1.3 Method of Measurement  
The accepted quantities, measured as prescribed in section ITEM 1003(1)a1 1 shall be paid for at the contract unit price for carpentry and joinery works which price and payment shall be full compensation for furnishings and placing all materials, including all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

1003(1)a1 4.Basis of Payment  
Payment will be made under:

| Pay Item Number | Description                 | Unit of Measurement |
|-----------------|-----------------------------|---------------------|
| 1003(1)a1       | CARPENTRY AND JOINERY WORKS | SQ.M.               |

ITEM 1007(1) – ALUMINUM FRAMED GLASS DOOR

1007(1).1 Description  
This item shall consist of furnishing all required materials, tools, equipment and labor and performing all operations necessary of the satisfactory completion of all aluminum glass door works in strict accord with applicable drawings, details and these Specifications.

1007(1).2 Material and Construction Requirements  
Doors schedule, color and design shall be in accordance with the plans.

1007(1).2.1 Aluminum Glass Door  
Aluminum frame glass doors shall be provided with 6 mm. thick laminated colored or tinted glass; with standard aluminum tubular sections with powder coated finish; with upper transoms or fixed fan lights (also provided with 6 mm thick laminated colored or tinted glass) as indicated in the plans. Also provide aluminum push bar with powder coated finish and door pivots or thin-slab floor hinges. Also provide integral lock system. Details and sizes shall be in accordance with the plans and supplementary drawings.

1007(1).2.2.Framing System  
1007(1).2.2.1. Framing Members  
Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.  
1007(1).2.2.2. Brackets and Reinforcements  
Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.  
1007(1).2.2.3. Fasteners and Accessories  
Manufacturer's standard corrosion resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials:

- a. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.



- b. Reinforce members as required to receive fastener threads.
- c. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.
- d. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.
- e. Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials. Form exposed flashing from sheet aluminum finished to match framing and of sufficient thickness to maintain a flat appearance without visible deflection.
- f. Framing System Gaskets and Sealants: Manufacturer's standard recommended by manufacturer for joint type.

1007(1).2.3. Door Hardware

Door Hardware Schedule Standard: BHMA A156.4, Grade 2

Provide heavy-duty units in sizes and types recommended by entrance system and hardware manufacturers for entrances and uses indicated. Opening force for egress doors shall not be more than 133 N required to set door in motion and not more than 67 N required to open door to minimum required width. Accessible interior doors shall not be more than 22.2 N.

- a. Offset-Pivot Hinges: Provide top, bottom, and intermediate offset pivots at each door leaf.
- b. Ball-Bearing Butts, Standard: BHMA A156.1, Grade 1,
- c. Provide non removable pins at hinges exposed to outside of door.
- d. Provide nonferrous hinges where hinges are exposed to weather.
- e. Quantities: For doors with heights up to 2210 mm, provide 3 hinges per leaf. For doors with heights of greater than 2210 and up to 3048 mm, provide 4 hinges per leaf.

1007(1). 3 Method of Measurement

The quantities for doors to be paid for shall be the number of square meter and/or number of units of door panel completed and accepted.

Payment of this item shall be deemed to include the cost of jambs, heads, door frames, nailers, glass pane (if any) and finish hardware

| Pay Item Number | Description                | Unit of Measurement |
|-----------------|----------------------------|---------------------|
| ITEM 1007(1)    | ALUMINUM FRAMED GLASS DOOR | SQ.M.               |

ITEM 1008(1) a - ALUMINUM FRAMED GLASS WINDOWS

1008(1) a.1 Description

This Item shall consist of all fabricated aluminum framed windows fully equipped with fixing accessories and locking devices as shown on the Plans and in accordance with this Specification.

1008(1) a.2 Material Requirements

1008(1) a.2.1 Glass

Glass shall be 6mm thick , clear heat strengthened glass.

Prevent glass from contact with metal or any hard or sharp materials by use of resilient shims placed at a quarter points. Use resilient sealants. Use stops in sizes permitting a "good grip" onto glass. Install glass only in opening that are rigid, plumb and square. Allow sufficient clearance at edges of glass to compensate for its expansion or for some settlement of the building. Clearance should be ¼ inch from edge to frame and 1/8 inch for face, markings, banners, posters and other decal should not be spelled directly to glass surface as these could cause thermal stresses. Removal of part of glazing compound smears from glass shall be performed by the glazing contractor during the materials normal work life. Failure to do so may result damage to the glass.

1008(1) a.2.2 Aluminum Extrusions

Alloy and temper recommended by aluminum window manufacturer for strength, corrosion resistance, and application of required finish, but not less than 150-mpa ultimate tensile strength, not less than 110 mpa minimum yield strength, and not less than 1.6-mm thickness at any location for the main frame and sash members.

1008(1) a.2.3. Fasteners

Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with aluminum window members, trim, hardware, anchors, and other components.

1008(1) a.2.4. Sealant

For sealants required within fabricated windows, provide window manufacturer's standard, permanently elastic, nonshrinking, and nonmigrating type recommended by sealant manufacturer for joint size and movement.

1008(1) a.2.5. Hardware

Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with aluminum; designed to smoothly operate, tightly close, and securely lock aluminum windows and sized to accommodate sash or ventilator weight and dimensions. Do not use aluminum in frictional contact with other metals.

Sill Cap/Track: Track of thickness, dimensions, and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.

Locks and Latches: Designed to allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.

1008(1) a.Construction Requirements

Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components; Drawings; and Shop Drawings. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction. Set sill members in bed of sealant or with gaskets, as indicated, for weathertight construction. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.

Adjust operating sashes and ventilators, screens, hardware, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

1008(1) a.Installation Requirements

Window framing and aluminum and steel frame shall be fitted closely, set accurately to the required lines and levels, and secured and place in a rigid manner with the use of appropriate fasteners. Frame corners shall be mitered and mechanically locked to attain extreme rigidity. Aluminum frames and glass shall be of the design, size and thickness as indicated. Steel casement and aluminum framing and clip shall be shop fabricated and shall be loosely pivoted to allow free movement. The leaves and blades shall be secured. Movable section of the window shall allow easy operation either to close or open operation.

1008(1) a.3. Method of Measurement

Aluminum windows shall be measured by actual in place installed with respective design/style and type of operation in square meters.

1008(2).5 Basis of Payment

The actual area in square meters of windows satisfactorily installed and ready for service shall be the basis for payment based on the unit bid or contract unit price.

Payment shall be made under:

| Pay Item Number | Description                   | Unit of Measurement |
|-----------------|-------------------------------|---------------------|
| 1008(1)a        | ALUMINUM FRAMED GLASS WINDOWS | SQ.M.               |

ITEM 1018(3) - GRANITE TILES

1018(3).1 Description

This Item shall consist of furnishing all granite tiles and cementitious materials, tools and equipment including labor required in undertaking the proper installation of floor tiles as shown on the Plans and in accordance with this Specification.

1018(3).2 Material Requirements

1018(3).2.1 Glazed Tiles and Trims

Glazed tiles shall have an impervious face of ceramic materials fused onto the body of the tiles and trims. The glazed surface may be clear white or colored depending on the color scheme approved by the Engineer. Standard glazes may be bright (glossy) semimatte (Less glossy) matte (dull) or crystalline (mottled and textured; good resistance to abrasion). Glazed tiles are used principally for walls; crystalline glazed tiles may be used for floors provided however that these are used as light duty floors.

1018(3).2.2 Unglazed Tiles

Unglazed tiles shall be hard dense tile of homogeneous composition. Its color and characteristics are determined by the materials used in the body, the method of manufacture and the thermal treatment. It is used primarily for floors and walks.

1018(3).2.3 Cement

Cement shall be Portland conforming to the specification requirements defined in Item 700, Hydraulic Cement.

1018(3).2.4 Sand

Sand shall be well graded fine aggregate clean river sand, free from soluble salts and organic impurities.

1018(3).2.5 Lime

Lime shall be hydrated lime with free un hydrated oxide and magnesium oxide content not to exceed 8 percent by weight.

1018(3).3 Construction Requirements

Tile work shall not be started until roughing-ins for plumbing, electrical and other trades have been completed and tested. The work of all other trades shall be protected from damage.

1018(3).3.1 Surface Preparation

a) Mortar mix for scratch coat and setting bed shall consist of one part Portland cement 1/4 part lime and 3 parts sand by volume. Surface to receive tile must be level, true to elevation, dry, free from dirt, oil and other ointments. Allow at least seven days curing of scratch coat and setting bed. Installation work shall not be allowed to proceed until unsatisfactory conditions are corrected.

b) Bond coat shall be portland cement paste.

1018(3).3.1.1 Thoroughly dampen surfaces of masonry or concrete walls before scratch coat is applied.

1018(3).3.1.2 On masonry or concrete surface first apply a thin coat with pressure, then bring it out sufficiently to compensate for the major irregularities of the surface to a thickness not less than 10 mm. at any point.

1018(3).3.1.3 Evenly rate scratch coat to provide good mechanical key before the mortar mix has fully hardened.

1018(3).3.2 Installation Procedure

Ceramic tiles shall be soaked in clean water prior to installation for a minimum of one hour

1018(3).3.2.1 Granite Glazed Floor Tiles

a) Determine and mark layout of granite tiles, joint location, position of trims and fixtures so as to minimize cut less than one-half tile in size.

b) Thoroughly dampen surface of wall but do not saturate surface.

c) Apply a bond coat mix with consistency of cream paste 1.5 mm thick to the wall surface or to the back of the tile to be laid.

d) Lay the tiles true to profile then exert pressure and tamp tile surface before the bond coat mix has initially set.

e) Continue with the next full tile to be laid and pressed firmly upon the setting bed tamped until flush and in place of the other tiles.

f) Intersections and returns shall be formed accurately using the appropriate trims.

g) All lines shall be kept straight and true to profiles, plumbed and internal corners rounded using the appropriate trims.

1018(3).3.3 Grouting and Pointing

1018(3).3.3.1 Tiles shall have laid in place for at least 24 hours before grouting of the joints is started. Grouting mortar shall be white Portland cement or blended with pigments to acquire the color appropriate for the ceramic tile.

1018(3).3.3.2 Grouting mortar shall be applied over the tile by float or squeegee stroked diagonally across the joints. Remove excess mortar with a wet sponge stroked diagonally or in a circular motion after 12-15 minutes. Follow with a barely damp or dry sponge to remove remaining haze while smoothing all grouted joints.

1018(3).3 Cleaning



- a) Clean granite tile surfaces thoroughly as possible upon completion of grouting.
- b) Remove all grout haze, observing tile manufacturers recommendations as to use of acid or chemical cleaners.
- c) Rinse tile thoroughly with clean water before and after using chemical cleaners.
- d) Polish surface of tile with soft cloth.

1018(3).4 Protection from Construction Dirt

- a) Apply a protective coat of neutral cleanser solution diluted with water in the proportion of 1:4 or 1-liter cleanser concentrate to 1-gallon water.
- b) In addition, cover tile flooring with heavy-duty no staining construction paper, taped in place.
- c) Just before final acceptance of the work, remove paper and rinse protective coat of neutral cleaner from tile surface. Do not let protective paper get torn or removed.

1018(3).5 Method of Measurement

All works performed under this Item shall be measured in square meters for areas actually laid with granite tiles and accepted to the satisfaction of the Engineer.

1018(3).6 Basis of Payment

Granite tile work determined and provided in the Bill of Quantities shall be paid for based at the unit bid price which price and payment constitute full compensation for furnishing all materials, tools, equipment and other incidentals necessary to complete this Item.

Payment shall be made under:

| Pay Item Number | Description   | Unit of Measurement |
|-----------------|---------------|---------------------|
| 1018            | GRANITE TILES | SQ.M.               |

ITEM 1021(3)a- FLOOR TOPPING

1021(3)a.1 Description

This item shall consist of furnishing all required materials, tools, equipment and labor and performing all operations necessary of the satisfactory completion of all floor topping works in strict accord with applicable drawings, details and these Specifications.

This Item shall consist of the installation 50 mm thick floor topping at the function hall as indicated in the plan and specification.

1021(3)a.a1.2 Materials and Construction Requirements

- a. Cement: Portland Cement C 150, Type 1 Grey Cement
- b. Standard Aggregate: ASTM C 33, and as follows:
- c. Fine aggregate consisting of sand or crushed stone, clean and free from deleterious matter, grade by weight to pass sieve;
  - 9.53 mm ( 3/8").....100 percent
  - No.4.....95-100 percent
  - No.8.....80-90 percent
  - No.16.....50 -75 percent
  - No.30.....30 -50 percent
  - No.50.....10 -20 percent
  - No.100.....2-5 percent
- d. Coarse aggregate consisting of gravel or crushed stone, clean and free from deleterious matter, grade by weight to pass sieve as follows:
  - 12.7 mm (1/2").....100 percent
  - 9.53 mm (3/8").....30-50 percent
  - No.4.....0-15 percent
  - No.8.....0-5 percent
- e. Topping Mix  
Design mix to produce topping material with the following characteristics: Compressive Strength of concrete protection course- 3000 psi

Construction Requirement

Conditions of Surfaces

- a. Topping applied to hardened concrete: Remove dirt, loose material, oil, grease, paint, or other contaminants, leaving a clean surface.
- b. When base slab surface is unacceptable for good bonding, roughen surface by chipping or scarifying before cleaning.
- c. Prior to placing topping mixture, thoroughly dampen slab surface but do not leave standing water. Apply specified epoxy adhesive over dampened surface. Place topping mix while epoxy is still tacky.
- d. Mark location of joints in base slab so that joints in top course will be placed directly over them.

1021(3)a..3 Method of Measurement

The accepted quantities, measured as prescribed in section 1021(3)a shall be paid for at the contract unit price for floor topping which price and payment shall be full compensation for furnishings and placing all materials, including all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

1021(3)a.4.Basis of Payment

Payment will be made under:

| Pay Item Number | Description   | Unit of Measurement |
|-----------------|---------------|---------------------|
| 1021(3)a.       | FLOOR TOPPING | SQ.M.               |

ITEM 1032- PAINTING WORKS (MASONRY/CONCRETE, FIBERCEMENT BOARD)

1032.1 Description

This Item shall consist of furnishing all paint materials, varnish and other related products, labor, tools, equipment and plant required in undertaking the proper application of painting, varnishing and related works indicated on the Plans and in accordance with this Specification.

1032.2 Material Requirements

1032.2.1 Paint Materials

All types of paint material, varnish and other related product shall be subject to random test as to material composition by the Bureau of Research and Standard, DPWH or the National Institute of Science and Technology. (Use the following approved and tested brand name: Boysen, Davies, Dutch Boy, Fuller O Brien, or any approved equal).

1032.2.2 Tinting Colors  
Tinting colors shall be first grade quality, pigment ground in alkyd resin that disperses and mixes easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body.

1032.2.3 Concrete Neutralizer  
Concrete neutralizer shall be first grade quality concentrate diluted with clean water and applied as surface conditioner of new interior and exterior walls thus improving paint adhesion and durability.

1032.2.4 Silicon Water Repellant  
Silicon water repellant shall be transparent water shield especially formulated to repel rain and moisture on exterior masonry surfaces.

1032.2.5 Patching Compound  
Patching compound shall be fine powder type material like calcimine that can be mixed into putty consistency, with oil base primers and paints to fill minor surface dents and imperfections.

1032.2.6 Varnish  
Varnish shall be a homogeneous solution of resin, drying oil, drier and solvent. It shall be extremely durable clear coating, highly resistant to wear and tear without cracking, peeling, whitening, spotting, etc. with minimum loss of gloss for a maximum period of time.

1032.2.7 Lacquer  
Lacquer shall be any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvent are acetates, alcohols and ketones. Although lacquers were generally based on nitrocellulose, manufacturers currently use, vinyl resins, plasticizers and reacted drying oils to improve adhesion and elasticity.

1032.2.8 Shellac  
Shellac shall be a solution of refined lac resin in denatured alcohol. It dries by evaporation of the alcohol. The resin is generally furnished in orange and bleached grades.

1032.2.9 Sanding Sealer  
Sanding sealer shall be quick drying lacquer, formulated to provide quick dry, good holdout of succeeding coats, and containing sanding agents such as zinc stearate to allow dry sanding of sealer.

1032.2.10 Glazing Putty  
Glazing putty shall be alkyd-type product for filling minor surface unevenness.

1032.2.11 Natural Wood Paste Filler  
Wood paste filler shall be quality filler for filling and sealing open grain of interior wood. It shall produce a level finish for following coats of paint varnish/lacquer and other related products.

1032.2.12 Schedule

Exterior

- |  |   |
|--|---|
| a) Plain cement plastered finish to be painted       | -3 coats Acrylic base masonry paint     |
| b) Concrete exposed aggregate and/or tool finish     | -1 coat water repellant                 |
| c) Ferrous metal                                     | -1 coat primer and 2 coats enamel paint |
| d) Galvanized metal<br>2 coats portland cement paint | -1 coat zinc chromate primer and        |
| e) Wood painted finish                               | -3 coats oil based paint                |
| f) Wood varnished finish                             | -varnish water repellant                |

Interior

- |  |   |
|--|---|
| a) Plain cement plastered finish to be painted   | - 2 coats acrylic base masonry paint  |
| b) Concrete exposed aggregate and/or tool finish   | - clean surface   |
| c) Ferrous metal   | -1 coat primer and 2 coats enamel paint   |
| d) Woodwork sea-mist   | -3 coats of 3 parts thinner 1 part lacquer  |
| e) Woodwork varnish - 1st coat, of one part sanding sealer to one part solvent 2nd coat of 2/3 sanding sealer to 1/3 solvent |   |
| f) Woodwork painted  | - 3 coats of oil base paint finish 109  |
| g) Ceiling boards textured finish  | -1 coat oil based paint allow to dry then patch surfaces unevenness and apply textured paint coat |

1032.3 Construction Requirements  
The Contractor prior to commencement of the painting, varnishing and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.

1032.3.1 Surface Preparation  
All surfaces shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knotholes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint. Interior woodworks shall be sandpapered between coats. Cracks, holes or imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces.  
Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound.  
After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).  
Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Wash unprimed galvanized metal with etching solution and allow it to dry. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer.  
In addition the Contractor shall undertake the following:

1. Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.



2. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
3. Painting and varnishing works shall not be commenced when it is too hot or cold.
4. Allow appropriate ventilation during application and drying period.
5. All hardware will be fitted and removed or protected prior to painting and varnishing works.

#### 1032.3.2 Application

Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint. Brush marks shall flaw out after application of paint. Paints made for application by roller must be similar to brushing paint. It must be nonstick when thinned to spraying viscosity so that it will break up easily into droplets. Paint is atomized by high pressure pumping rather than broken up by the large volume of air mixed with it. These procedures change the required properties of the paint.

#### 1032.3.3 Mixing and Thinning

At the time of application paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions, but not in excess of 1 pint of suitable thinner per gallon of the paint.

#### 1032.3.4 Storage

All material to be used under this Item shall be stored in a single place to be designated by the Engineer and such place shall be kept neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.

#### 1032.3.5 Cleaning

All cloths and cotton waste which constitute fire hazards shall be placed in metal containers or destroyed at the end of daily works. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

#### 1032.3.6 Workmanship in General

- a) All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- b) All coats shall be thoroughly dry before the succeeding coat is applied.
- c) Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coats as may be required shall be applied to attain the desired evenness of surface without extra cost to the owner.
- d) Where surface is not in proper condition to receive the coat the Engineer shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed is ordered by , the Engineer.
- e) Hardware, lighting fixture and other similar items shall be removed or protected during the painting varnishing and related work operations and re-installed after completion of the work.

#### 1032.3.7 Procedure for Sea-Mist Finish

- a) Depress wood grain by steel brush and sand surface lightly.
- b) Apply sanding sealer.
- c) Apply two coats of industrial lacquer paint.
- d) Spray last coat of industrial lacquer paint mixed with sanding sealer.
- e) Apply wood paste filler thinned with turpentine or paint thinner into the wood surface.
- f) Wipe off wood paste filler immediately.
- g) Spray flat or gloss lacquer whichever is specified.

#### 1032.3.8 Procedure for Varnish Finish

- a) Sand surface thoroughly.
- b) Putty all cracks and other wood imperfections with wood paste filler.
- c) Apply oil stain.
- d) Apply lacquer sanding sealer.
- e) Sand surface along the grain.
- f) Spray three (3) coats of clear dead flat lacquer.
- g) Polish surface coated using cloth pad.
- h) Spray gloss lacquer or flat lacquer whichever is desired or specified.

#### 1032.3.9 Procedure for Ducco Finish

- a) Sand surface thoroughly.
- b) Apply primer surface white or gray by brush or spray.
- c) Apply lacquer spot putty in thin coat. Allow each coat for become thoroughly dry before applying next coat.
- d) Apply primer surfaces and then allow drying in two (2) hours before applying the next coat.
- e) Apply a coat of flat tone semi-gloss enamel as per color scheme submitted and approved by the Engineer.

#### 1032.4 Method of Measurement

The areas of concrete, wood and metal surfaces applied with varnish, paint and other related coating materials shall be measured in square meters as desired and accepted to the satisfaction of the Engineer.

#### 1032.5 Basis of Payment

### TECHNICAL SPECIFICATIONS

Repair and Improvement of BAPTC Dormitory Building  
Strawberry Fields, Betag, La Trinidad, Benguet

Prepared By:

Raymart C. Tarasi  
Unit Officer - II



The accepted work shall be paid at the unit bid price, which price and payment constitute full compensation for furnishing all materials, labor, equipment, tools and other incidental necessary to complete this Item.

Payment will made under:

| Pay Item Number | Description                                    | Unit of Measurement |
|-----------------|--|---------------------|
| 1032(1)a        | PAINTING WORKS (MASONRY/CONCRETE, WOOD, STEEL) | SQ.M.               |

SPL. 2 - WIRES, WIRING DEVICES, LIGHTING FIXTURES AND LAMPS

SPL. 2.1 Description

This Item shall consist of the furnishing and installation of all wires and wiring devices consisting of electric wires and cables, wall switches, convenience receptacles, heavy duty receptacles and other devices shown on the approved Plans but not mentioned in these specifications.

SPL. 2.2 Material Requirements

Wires and cables shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the PSA mark. Unless specified or indicated otherwise, all power and lighting conductors shall be insulated for 600 volts.

All wires shall be copper, soft drawn and annealed, smooth and of cylindrical form and shall be centrally located inside the insulation.

All wiring devices shall be standard products of reputable electrical manufacturers. Wall switches shall be rated at least 1 OA, 250 volts and shall be spring operated, flush, tumbler type. Duplex convenience receptacles shall be rated at least 15A, 250 volts, flush, parallel slots.

Single heavy-duty receptacles shall be rated at least 20A, 250 volts. 3wire, flush, polarized type.

SPL. 2.3 Construction Requirements

Conductors or wires shall not be drawn in conduits until after the cement plaster is dry and the conduits are thoroughly cleaned and free from dirt and moisture. In drawing wires into conduits, sufficient slack shall be allowed to permit easy connections for fixtures, switches, receptacles and other wiring devices without the use of additional splices.

All conductors of convenience outlets and lighting branch circuit home runs shall be wired with a minimum of 3.5 mm in size. Circuit home runs to panel boards shall not be smaller than 3.5 mm but all home runs to panel board more than 30 meters shall not be smaller than 5.5 mm. No conductor shall be less than 2 mm in size.

All wires of 14mm and larger in size shall be connected to panels and apparatus by means of approved type lugs or connectors of the solder less type, sufficiently large enough to enclose all strands of the conductors and securely fastened. They shall not loosen under vibration or normal strain.

All joints, taps and splices on wires larger than 14 mm shall be made of suitable solder less connectors of the approved type and size. They shall be taped with rubber and PVC tapes providing insulation not less than that of the conductors. No splices or joints shall be permitted in either feeder or branch conductors except within outlet boxes or accessible junction boxes or pull boxes. All joints in branch circuit wiring shall be made mechanically and electrically secured by approved splicing devices and taped with rubber and PVC tapes in a manner which will make their insulation as that of the conductor.

All wall switches and receptacles shall be fitted with standard Bakelite face plate covers. Device plates for flush mounting shall be installed with all four edges in continuous contact with finished wall surfaces without the use of coiled wire or similar devices. Plaster fillings will not be permitted. Plates installed in wet locations shall be gasketed. When more than one switch or device is indicated in a single location, gang plate shall be used.

SPL. 2.4 Method of Measurement

The work under this Item shall be measured either by meters, rolls, pieces, and set, actually placed and installed as shown on the Plans.

SPL. 2.5 Basis of Payment

All work performed and measured and as provided for in this Bid of Quantities shall be paid for at the Unit Bid or Contract Unit Price which payment shall constitute full compensation including labor, materials, tools and incidentals necessary to complete this Item.

Payment shall be made under:

| Pay Item Number | Description  | Unit of Measurement |
|-----------------|--|---------------------|
| SPL. 2.         | WIRES, WIRING DEVICES, LIGHTING FIXTURES AND LAMPS | L.S.                |

SCOPE OF WORK (SUMMARY)

801 (1)- REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Removal of steel window frame  
Chipping/ Removal of floor tiles, topping and loose particles  
Removal of old paint on walls  
Removal of ceiling boards  
Removal of damaged ceiling frame

1003(1)a1- CARPENTRY AND JOINERY WORKS

Installation of new ceiling board  
Replacement of damaged ceiling frame  
Installation of canopy at function hall egress/ingress

1007(1)- ALUMINUM FRAMED GLASS DOOR

Installation of jamb and glass doors at function hall egress/ingress

1008(1)a - ALUMINUM FRAMED GLASS WINDOWS

Installation of aluminum framed glass window at function hall

1018(3) - GRANITE TILES

Installation of granite tiles at roof deck and function hall

1021(3)a - FLOOR TOPPING

Construction of 50 mm concrete floor topping at function hall

1032(1)a - PAINTING WORKS

Repainting of walls at function hall

SPL.2 - WIRES, WIRING DEVICES, LIGHTING FIXTURES AND LAMPS

Rewiring and installation of lighting fixtures at function hall





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**BENGUET STATE UNIVERSITY**  
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**BILL OF QUANTITIES**

| PROJECT TITLE: REPAIR AND IMPROVEMENT OF BAPTC DORMITORY BUILDING |   |        |              |               |        |
|---|---|--------|--------------|---------------|--------|
| LOCATION: BETAG, STRAWBERRY FIELDS, LA TRINIDAD, BENGUET          |   |        |              |               |        |
| OWNER: BENGUET AGRI-PINOY TRADING CENTER                          |   |        |              |               |        |
| Item No.  | Description   | Qty    | Unit         | UNIT BID COST | AMOUNT |
| B.5   | PROJECT BILLBOARD   | 1.00   | EACH         | Php           | Php    |
| B.9   | MOBILIZATION, TEMPORARY STRUCTURE, UTILITIES AND SERVICES | 1.00   | LUMP SUM     | Php           | Php    |
| B.7 ( 2 )   | OCCUPATIONAL SAFETY AND HEALTH                            | 1.00   | LUMP SUM     | Php           | Php    |
| 801 (1)   | REMOVAL OF STRUCTURES AND OBSTRUCTION                     | 1.00   | LUMPSUM      | Php           | Php    |
| 1003(1)a1   | CARPENTRY AND JOINERY WORKS                               | 1.00   | SQUARE METER | Php           | Php    |
| 1007(1)   | ALUMINUM FRAMED GLASS DOOR                                | 2.00   | SET          | Php           | Php    |
| 1008(1)a  | ALUMINUM FRAMED GLASS WINDOWS                             | 7.95   | SQUARE METER | Php           | Php    |
| 1018(3)   | GRANITE TILES   | 450.00 | SQUARE METER | Php           | Php    |
| 1021(3)a  | FLOOR TOPPING   | 60.00  | SQUARE METER | Php           | Php    |
| 1032(1)a  | PAINTING WORKS  | 135.40 | SQUARE METER | Php           | Php    |
| SPL.2   | WIRES, WIRING DEVICES, LIGHTING FIXTURES AND LAMPS        | 1.00   | LUMP SUM     | Php           | Php    |
| TOTAL PROJECT COST  |   |        |              |               |        |

Submitted By:

\_\_\_\_\_

*Name and Signature of Bidder's Representative*

\_\_\_\_\_

*Designation*

\_\_\_\_\_

*Name of Bidder*

Date: \_\_\_\_\_