



Republika ng Pilipinas Lungsod Quezon

BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY

2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City



September 30, 2021

Request for Quotation/ Proposal

| No. | Project No. | Project Name | Location | Amount | Duration Cal. Days | Source Fund |
|-----------------------------------|-------------|--|-----------------------|------------|--------------------|---------------------------------|
| <u>Parks - Small A</u> | | | | | | |
| 1 | 21-001 SV | Proposed Rehabilitation of Welcome Arc at Manresa Park | Manresa | 247,536.00 | 30 | Engineering Department |
| <u>Buildings – Small A</u> | | | | | | |
| 2 | 21-002 SV | Proposed Rehabilitation of Reception Area at Various Health Center (District 2) | Various Barangays | 341,124.74 | 30 | OCM-20% CDF |
| 3 | 21-003 SV | Proposed Temporary Enclosure for Crematory Machine at Baesa Crematorium | Baesa | 594,910.45 | 30 | Engineering Department-SB No. 1 |
| 4 | 21-004 SV | Proposed Rehabilitation of Reception Area at Various Health Center (District 3) | Various Barangays | 632,587.24 | 30 | OCM-20% CDF |
| 5 | 21-005 SV | Proposed Rehabilitation of Material Recovery Facility at Third Floor (Roof Deck) | Mariana | 789,657.49 | 60 | Engineering Department-SB No. 1 |
| 6 | 21-006 SV | Proposed Rehabilitation of Reception Area at Various Health Center (District 1) | Various Barangays | 809,220.13 | 30 | OCM-20% CDF |
| 7 | 21-007 SV | Proposed Rehabilitation of Reception Area at Various Health Center (District 6) | Various Barangays | 851,009.93 | 30 | OCM-20% CDF |
| 8 | 21-008 SV | Proposed Rehabilitation of Multi-Purpose Hall at Bagumbuhay | Bagumbuhay | 908,267.19 | 60 | Engineering Department-SB No. 1 |
| 9 | 21-009 SV | Proposed Rehabilitation of Reception Area at Various Health Center (District 4) | Various Barangays | 953,997.37 | 30 | OCM-20% CDF |
| 10 | 21-010 SV | Proposed Rehabilitation of Tennis Court at Villa Orion Union | West Fairview | 995,610.53 | 60 | Engineering Department-SB No. 1 |
| <u>Roads – Small B</u> | | | | | | |
| 11 | 21-011SV | Proposed Rehabilitation of Steel Bridge at Tacloban Street | Alicia and Bahay Toro | 695,189.25 | 90 | Engineering Department |
| <u>Roads – Small B</u> | | | | | | |
| 12 | 21-012 SV | Proposed Rehabilitation (Surface Improvement) of Halcon Street at Amparo Subdivision | Nagkaisang Nayon | 897,220.87 | 10 | Engineering Department |
| 13 | 21-013 SV | Proposed Rehabilitation of Road and Drainage at Balimbing Street | Veterans Village | 971,164.95 | 60 | OCM-20% CDF |



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The Quezon City Government through its Bids and Awards Committee – Infra and Consultancy undertake an Small Value Procurement in accordance with **Section 53.9 of the Revised Implementing Rules and Regulations of Republic Act No. 9184.**

Please quote your best offer for the project/s described above, subject to the Terms and Conditions provided. Submit your proposal/price quotation duly signed by you or your duly authorized representative not later than **5 October 2021** on or before **10:00 A.M.**, Philippine Standard Time, together with the following documents:

1. PhilGEPS Platinum Certificate
2. DTI or SEC Registration Certificate
3. Mayor's Permit
4. Tax Clearance
5. PCAB License (Bidders with valid Philippine Contractors Accreditation Board (PCAB)
6. Audited Financial Statements
7. Net Financial Contracting Capacity (NFCC)
8. List of Key Construction Personnel to be assign for the project
9. List of Major Equipment to be used for the Project
10. Duly Notarized Affidavit of Undertaking of Key Personnel and Equipment
11. Income/Business Tax Returns
12. Omnibus Sworn Statement prescribed by the Government Procurement Policy Board (GPPB) duly notarized with attached Secretary's Certificate (*If a partnership, corporation, cooperative, or joint venture*). The authorized representative as identified in the Omnibus Sworn Statement shall be the signatory in the proposal/price quotation form.

Opening of Quotations/Proposals will be on **5 October 2021** at exactly **11:00 A.M.**

in a **SEALED LONG BROWN ENVELOPE** shall:

- 1 Contain the Name of Project of the contract to be quoted in capital letters;
- 2 Bear the name and address of the Contractor in capital letters;
- 3 Be addressed to the Procuring Entity's BAC.

Name of Project: **IN CAPITAL LETTERS**

**Quezon City Local Government
BIDS AND AWARDS COMMITTEE (INFRA & CONSULTANCY)
2/F Procurement Department, Finance Building
Quezon City Hall Compound**

For any clarification you may contact us at 89884242 loc. 8505/8709.

ATTY. MARK DALE DIAMOND P. PERRAL
Chairman, BAC Infra and Consultancy



Republika ng Pilipinas Lungsod Quezon

BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY

2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City



TERMS AND CONDITIONS

1. Contractor shall **provide correct and accurate** information required in this form.
2. Price quotation/proposal must be valid for a period of thirty (30) calendar days from the date of submission.
3. Price quotation/proposal, to be denominated in Philippine Peso shall include all taxes, duties and/or levies payable.
4. Quotation/Proposal **exceeding** the Approved Budget for the Contract (ABC) shall be **rejected**.
5. Award of contract shall be made to the lowest quotation/proposal (for infra) which complies with the minimum technical specifications and other terms and conditions stated herein.
6. Any interlineations, erasures or overwriting shall be valid only if they are signed or initialed by the contractor or his/her duly authorized representative/s.
7. The Engineering Department shall have the right to inspect and monitor the construction projects
8. Non-submission of eligibility documents shall mean disqualification of Quotation/Proposal.
9. Liquidated damages equivalent to one tenth (1/10) of one percent (1%) of the cost of the unperformed portion for every day of delay, Engineering Department shall rescind the contract once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, without prejudice to other courses of action and remedies open to it.
10. Failure to follow these instructions will disqualify your entire quotation/proposal.

ATTY. MARK DALE DIAMOND P. PERRAL

Chairman, BAC Infra and Consultancy



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

5th, 6th, 7th Floor, QC Civic Center Building "B"
Telephone Nos. 8988-4242 Local 8538



Project Title : PROPOSED REHABILITATION OF MULTI-PURPOSE HALL
Location : BARANGAY BAGUMBUHAY, DISTRICT 3, QUEZON CITY

LIST OF MANPOWER

| No. | Manpower | Qty |
|-----|------------------------------------|----------------------------|
| 1 | Project Engineer | 1 |
| 2 | Materials Engineer | 1 |
| 3 | Safety Officer/Safety Practitioner | Refer to DOLE Requirements |
| 4 | Foreman | 1 |
| 5 | Skilled Worker | 4 |
| 6 | Laborer | 5 |
| 7 | Driver | 1 |

Prepared by:


JOHN CHRISTOPHER P. TOMACRUZ
Planning and Programming Division

Checked by:


JOCELYN A. NAONG
Planning and Programming Division



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT
5th, 6th, 7th Floors, QC Civic Center Building "B"
Telephone Nos. 8988-4242 Local 8538



Project Title : PROPOSED REHABILITATION OF MULTI-PURPOSE HALL
Location : BARANGAY BAGUMBUHAY, DISTRICT 3, QUEZON CITY

LIST OF EQUIPMENT

| No. | NAME OF EQUIPMENT | NO. OF UNIT |
|-----|-------------------|-------------|
| 1 | Elf Truck | 1 |
| 2 | Scaffolding | As Needed |
| 3 | Power Tools | As Needed |
| 4 | Minor Tools | As Needed |

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Telephone Nos. 8988-4242 Local 8538



PROJECT TITLE : PROPOSED REHABILITATION OF MULTI-PURPOSE HALL
LOCATION : BARANGAY BAGUMBUHAY, DISTRICT 3, QUEZON CITY

TECHNICAL SPECIFICATIONS

I. GENERAL REQUIREMENTS

- A. Comply with the current and existing laws, ordinances and applicable codes, rules and regulations, and standards. Any works performed contrary to the existing laws, rules and regulations, ordinances and standards without notice shall bear all cost arising therefrom.
- B. Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the more stringent apply.
- C. Should there be any change(s) in drawings or specifications, it is required to comply with the governing regulations, notify the implementing agency.
- D. Photographs shall be taken as, when and where directed at intervals of not more than one month. The photographs shall be sufficient in number and location, to record the exact progress of the works. The photographs shall be retained and will become the property of the Government.
- E. Site verification / inspection shall be conducted to validate the scope of works. No extra compensation and extension of time shall be given due to negligence or inadvertence.
- F. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall also be performed in the best and most capable manner in strict accordance with requirements of the plans and details. All materials not conforming to the requirements of these specifications shall be considered as defective.
- G. All equipment and installations shall meet or exceed minimum requirements of the standards and codes.
- H. Mobilization and Demobilization (if applicable)
 1. Mobilization shall include all activities and related costs for transportation of personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the operations at the site.
 2. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not anymore required within the construction site including the disassembly, removal and site clean-up of offices and other facilities assembled on the site specifically for this contract.
- I. Execute work in strict accordance with the best practices of the trades in a thorough, substantial, workmanlike manner by competent workmen. Provide a competent, experienced, full-time supervisor who is authorized to make decisions on behalf of the Contractor.
- J. Temporary Facilities and Utilities
 1. All facilities shall be near the job site, where necessary and shall conform to the best standard for the required types.
 2. Temporary facilities shall be provided and maintained including sanitary facilities and first aid stations.

3. Temporary utilities shall be sufficiently provided until the completion of the project such as water, power and communication.
 4. Temporary enclosure shall be provided around the construction site with adequate guard lights, railings and proper signage.
 5. Temporary roadways shall be constructed and maintained to sustain loads to be carried on them during the entire construction period.
 6. Upon completion of the work, the temporary facilities shall be demolished, hauled-out and disposed properly.
- K. Adequate construction safety and health protection shall be provided at all times during the execution of work to both workers and property.
1. A fully-trained Medical Aide shall be employed permanently on the site who shall be engaged solely to medical duties.
 2. The medical room shall be provided with waterproofing; it could be a building or room designated and used exclusively for the purpose and have a floor area of at least 15 square meters and a glazed window area of at least 2 square meters.
 3. The location of the medical room and any other arrangements shall be made known to all employees by posting on prominent locations and suitable notices in the site.
 4. Additional safety precautions shall be provided in the event of a pandemic. Protocols set forth by the government shall be strictly followed.
 5. Personal Protective Equipment (PPE) shall consist of safety helmet/hard hat, safety reflectorized vest, safety insulated gloves, dust mask, safety shoes, safety goggles, and safety harness. Every skilled and unskilled worker, and the project foreman shall be provided PPE by the Contractor. Consideration of quantity shall be made for the Project Engineer, Materials Engineer, Safety Officer/Practitioner (as required) and project driver.
 6. Construction safety materials shall consist of safety net, fire extinguisher and safety signage and posters.
- L. Necessary protections to the adjacent property shall be provided to avoid untoward incidents / accidents.
- M. Final cleaning of the work shall be employed prior to the final inspection for the certification of final acceptance. Final cleaning shall be applied on each surface or unit of work and shall be of condition expected for a building cleaning and maintenance program.

II. SITE WORKS

- A. All grades, lines, levels and dimensions shall be verified as indicated on the plans and details. Any discrepancies or inconsistencies shall be reported before commencing work.
- B. This Item shall consist of the removal wholly or in part, and satisfactory disposal of all buildings, fences, structures, old pavements, abandoned pipe lines, and any other obstructions which are not designated or permitted to remain, except for the obstructions to be removed and disposed of under other items in the Contract.

Removal and/or demolition of existing structures shall be done in accordance to safety procedures.

III. CIVIL / STRUCTURAL WORKS

A. CONCRETE WORKS

1. Delivery, Storage, and Handling: All materials shall be so delivered, stored, and handled as to prevent the inclusion of foreign materials and the damage of materials by water or breakage. Package materials shall be delivered and stored in original

packages until ready to be used. Packages or materials showing evidence of water or other damage shall be rejected.

2. Unless otherwise specified herein, concrete works shall conform to the requirements of the ACI Building Code. Full cooperation shall be given on trades to install embedded items. Provisions shall be made for setting items not placed in the forms. Before concrete is placed, embedded items shall have been inspected and tested for concrete aggregates and other materials shall have been done.
3. Materials
 - a. Cement for concrete shall conform to the requirements of specifications for Portland Cement (ASTM C – 150).
 - b. Water used in mixing concrete shall be clean and free from other injurious amounts of oils, acids, alkaline, organic materials or other substances that may be deleterious to concrete or steel.
 - c. Fine aggregates shall be beach or river sand conforming to ASTM C33, "Specification for Concrete Aggregates". Sand particle shall be coarse, sharp, clean free from salt, dust, loam, dirt and all foreign matters.
 - d. Coarse aggregates shall be either natural gravel or crushed rock conforming to the "Specifications for Concrete Aggregates (ASTM C33). The minimum size of aggregates shall be larger than one fifth (1/5) of the narrowest dimensions between sides of the forms within which the concrete is to be cast nor larger than three fourths (3/4) of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms.
4. Proportioning and Mixing
 - a. Proportioning and mixing of concrete shall conform to the requirements for Item 405 of the standard specification with the following proportions:

Cement: Sand: Gravel
 Class "A" - 1: 2: 3
 Class "B" - 1: 2: 4
 Class "C" - 1: 2 ½
 - b. Concrete mixture to be used for concrete shall conform with the structural requirements.
 - c. Mixing – concrete shall be machine mixed. Mixing shall begin within 30 minutes after the cement has been added to the aggregates.
5. Forms
 - a. General – Forms shall be used whatever necessary to confine the concrete and shape it to the required lines, or to insure the concrete of contamination with materials caving from adjacent, excavated surfaces. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in correct position. Forms shall be sufficiently tight to prevent loss or mortar from the concrete. Forms shall be ¼" (6mm) thick ordinary plywood and form lumber.
 - b. Cleaning of Forms – before placing the concrete, the contact surfaces of the formed hall be cleaned of encrustations of mortar, the grout or other foreign material.
 - c. Removal of Forms – forms shall be removed in a manner which will prevent damage to the concrete. Forms shall not be removed without approval. Any repairs of surface imperfections shall be formed at once and airing shall be started as soon as the surface is sufficiently hard to permit it without further damage.

6. Placing Reinforcement:

Steel reinforcement shall be provided as indicated, together with all necessary tie wires, chairs, spacers, supports and other devices necessary to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from loose, flaky rust and scale, oil, grease, clay and other coating and foreign substances that would reduce or destroy its bond with concrete. Reinforcement shall be placed accurately and secured in place by use of metal or concrete supports, spacers and ties. Such supports shall be used in such manner that they will not be exposed or contribute in any way, to the discoloration or deterioration of the concrete.

7. Conveying and Placing Concrete:

- a. Conveying – concrete shall be conveyed from mixer to forms as rapidly as applicable, by methods which will prevent segregation, or loss of ingredients. There will be no vertical drop greater than 1.5 meters except where suitable equipment is provided to prevent segregation and where specifically authorized.
- b. Placing – concrete shall be worked readily into the corners and angles of the forms and around all reinforcement and imbedded items without permitting the material to segregate, concrete shall be deposited as close as possible to its final position in the forms so that flow within the mass does not exceed two (2) meters and consequently segregation is reduced to a minimum near forms or embedded items, or elsewhere as directed, the discharge shall be so controlled that the concrete may be effectively compacted into horizontal layers not exceeding 30 centimeters in depth within the maximum lateral movement specified.
- c. Time interval between mixing and placing. Concrete shall be placed before initial set has occurred and before it has contained its water content for more than 45 minutes. No concrete mix shall be placed before 60 complete revolution of the machine mixer.
- d. Consolidation of Concrete – concrete shall be consolidated with the aid of mechanical vibrating equipment and supplemented by the hand spading and tamping. Vibrators shall not be inserted into lower cured that have commenced initial set; and reinforcement embedded in concrete beginning to set or already set shall not be disturbed by vibrators. Consolidation around major embedded parts shall be by hand spading and tamping and vibrators shall not be used.
- e. Placing Concrete through reinforcement – In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. On the bottom of beams and slabs, where the congestion of steel near the forms makes placing difficult, a layer of mortar of the same cement-sand ratios as used in concrete shall be first deposited to cover the surfaces.

8. Curing

- a. General – All concrete shall be moist cured for a period not less than seven (7) consecutive days by an approved method or combination applicable to local conditions.
- b. Moist Curing – The surface of the concrete shall be kept continuously wet by covering with burlap plastic or other approved materials thoroughly saturated with water and keeping the covering spraying or intermittent hosing.

9. Finishing

- a. Concrete surfaces shall not be plastered unless otherwise indicated. Exposed concrete surfaces shall be formed with plywood, and after removal of forms, the surfaces shall be smooth, true to line and shall present or finished appearance except for minor defects which can be easily repaired with patching with cement mortar, or can be ground to a smooth surface to remove all joint marks of the form works.

- b. Concrete Slabs on Fill. The concrete slabs on fill shall be laid on a prepared foundation consisting of sub grade and granular fill with thickness equal to the thickness of the overlaying slab except when indicated.

B. MASONRY WORKS

1. Masonry Units (Concrete Hollow Blocks):
 - a. 100mm thick for all interior walls and 150mm thick for all exterior walls unless otherwise indicated.
 - b. Use 400 psi for non-load bearing blocks and 700 psi for load bearing blocks where required.
 - c. Where full height walls are constructed with concrete hollow blocks, these shall extend up to the bottom of beam or slab unless otherwise indicated on plans. Provide stiffener columns and lintel beams as specified in the structural drawings or as specified or as deemed required to assure a stabilized wall due to height and other considerations.
2. Sand:

S-1, washed, clean and greenish in color.
3. Mortar:

One part Portland cement and two parts sand and water but not more than three parts sand and water.
4. Reinforcement

The concrete hollow blocks shall be reinforced with 10mm diameter deformed bar, spaced not more than 0.8m on centers, both ways.
5. Plaster bond:

The mixture of cement plaster for concrete hollow block wall finishes indicated in the drawings shall be one part Portland cement and three parts sand.
6. Floor Topping Preparation for Tilework. One part Portland cement and two parts sand and water but not more than three parts sand and water.

C. ROOFING WORKS

1. Corrugated galvanized iron (G.I.) sheets, including plain aluminum sheets for roofing accessories shall be cold-rolled meeting ASTM A-153 and with spelter coating of zinc of not less than 0.381 kg/sq.m. (1.25 ounce/sq.ft.) conforming to ASTM A-525 or pns 67:1985. Unless otherwise specified or shown on Plans, roofing sheets shall be gauge 26 (0.48mm thick) and provided in long span sizes to minimize end laps. Sheets shall weigh not less than 3.74 kg/sq.m. and shall be marked or stamped showing the gauge, size amount of zinc coating, brand and name of manufacturer. Test specimens shall stand being bent through 180 degrees flat on itself without fracture of the base metal and without flaking of the zinc coating.
2. Ridge/hip rolls, valleys, flashing and counter flashings, gutters and downspouts, whenever required, shall be fabricated from plain G.I. sheets. Ridge/hip rolls, flashings and counter flashings shall be gauge 26. Valleys, gutters and downspouts shall be gauge 24 unless otherwise specified on Plans. Wire basket strainers shall be galvanized, gauge 24,

Roof ventilators, whenever required shall be fabricated from gauge 26 plain G.I. sheets and constructed to the dimensions and details shown on Plans.
3. The roofing shall be secured to the purlins with min. 2 ½" max. 3" long Tek screws. Provide all-purpose sealant under the fasteners. Ridge rolls, hip rolls and valleys to be used shall be those compatible with the Ga. 24 pre-painted G.I. rib-type roofing

sheets. They shall lap the roofing sheets at least 250mm. The ridge rolls, hip rolls and valleys shall be riveted to the roofing sheets.

4. All roofing sheets adjacent to concrete hollow block and other masonry walls such as property line firewalls, shall be provided with Gauge 26 pre-painted plain G.I. Flashing to extend to the top and over to the other side of the wall. All fasteners shall be placed at the top of the corrugations of the roofing sheets to prevent water from standing around the fasteners.
5. Provide 6mm thick thermal insulation with single-side aluminum foil prior to fastening of roofing sheets to serve as thermal protection.

D. METAL FABRICATION

1. Materials:

- a. Steel and Iron. If not specified otherwise, use standard mill-finished structural steel shapes or bar iron in compliance with AISC Specifications for Design, Fabrication and Erection of Structural Steel for buildings.
- b. Bolts, Nuts, Studs and Rivets. ASTM A 307 and A 325.
- c. Screws. Fed. Spec FF-S-85, Fed. Spec FF-S-92, and Fed. Spec. FF-S-111.
- d. Metal Purlins. High grade galvanized steel with minimum tensile strength of 275 MPa, 1.4mm in thickness or approved equal.

2. Fabrication:

By mechanics skilled in the trade and in accordance with the manufacturer's directions. Metalwork shall be fabricated to allow for expansion and contraction of materials. Provide welding and bracing of adequate strength and durability, with tight, flush joints, dressed smooth and clean. Complete with bolts and nuts.

3. Metal Surfaces:

Surfaces shall be clean and free from all scale, flake, rust and rust pitting; well-formed and finished to shape and size, with sharp lines, angle and smooth surface. Shearing and punching shall leave clean true lines and surfaces. Weld or rivet permanent connections. Weld and flush rivets shall be used and finished flush smooth on surfaces that will be exposed after installation. Do not use screws or bolts where they can be avoided; when used, heads shall be countersunk, screwed up tight and threads nicked to prevent loosening.

4. Construction:

Thickness of metals and details of assembly and supports shall give ample strength and stiffness for the minimum loads specified or indicated. Joints exposed to weather shall be formed to exclude water.

5. Welding:

Use welding electrode E70xx and perform welding, welding inspection and corrective welding in accordance with AWS D1.1. Weld in a manner to prevent permanent distortion of the connected parts. Weld continuously along the entire area of contact (except where tack welding is permitted. Do not tack weld exposed to connections). Grind smooth visible weld in finished installation.

IV. ARCHITECTURAL WORKS

A. FLOOR FINISHES

6. **Homogeneous Tiles.** Unglazed Homogeneous tiles shall be hard, dense tiles of homogeneous composition. Its color and characteristics area determined by the materials used in the body, the method of manufacture and the thermal treatment.

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

B. WALL FINISHES AND PARTITIONING

1. **Homogeneous Tiles.** Glazed tiles and trims 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), semi-matte (less glossy), matte (dull) or crystalline (mottled and textured; good resistance to abrasion).

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

C. CEILING FINISHES

1. **Fiber Cement Board on Metal Frame.** The ceiling materials to be used shall conform to the samples approved by the City Engineer. All ceiling works shall be done by men experienced and qualified to do this particular specialty trade. The installation of ceiling materials shall be in accordance with the detailed section and with the manufacturer's manual instructions. Ceiling materials shall be cut as required to fit the perpendicular condition and should be properly secured by anchorage and other accessories to complete the installation. No mechanical work shall be exposed on the finish work. All joints around electrical outlets, pipes and other works extending through materials shall be sealed with caulking.

D. PAINTING WORKS

1. **Paint Materials.** All types of paint material and other related products shall be subject to test as to material composition by the Bureau of Research and Standard, DPWH or the National Institute of Science and Technology.
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.
3. **Skim coat.** Skim coat shall be fine powder type material like kalsomine that can be mixed into putty consistency, with oil-based primers and paints to fill minor surface dents and imperfections.
4. **Paint Schedule.**
 - a. **Exterior Masonry Wall (plain cement plastered finish to be painted)**
 - i. 1 coat skim coating, 1 coat primer, 2 coats elastomeric paint finish
 - b. **Interior Masonry Wall (plain cement plastered finish to be painted)**
 - i. 1 coat skim coating, 1 coat primer, 2 coats latex paint finish
 - c. **Interior Dry Wall**
 - i. 1 coat primer, 2 coats latex paint finish
 - d. **Ceiling Boards**
 - i. 1 coat primer, 2 coats latex paint finish
 - e. **Slab Soffit**
 - i. 1 coat primer, 2 coats latex paint finish
 - f. **Metal / Steel Surfaces**
 - i. 1 coat primer, 2 coats epoxy enamel finish

5. **Surface Preparation.** All surfaces shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knot-holes 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 of 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:

- a. Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.
 - b. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
 - c. Panting and varnishing works shall not be commenced when it is too hot or cold.
 - d. Allow appropriate ventilation during application and drying period
 - e. All hardware will be fitted and removed or protected prior to painting and varnishing works.
6. **Application.** Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint. Brush marks shall have flawed out after application of paint.
- Paints made for application by roller must be similar to brushing paint. It must be non-sticky 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. This procedure changes the required properties of the paint.
7. Application shall be as per paint Manufacturer's specification and recommendation.
 8. Provide all drop cloth and other covering requisite for protection of floors, walls, aluminum, glass, finishes and other works.
 9. All applications and methods used shall strictly follow the Manufacturer's Instructions and Specifications.
 10. All surfaces including masonry wall shall be thoroughly cleaned, puttied, sandpapered, rubbed and polished; masonry wall shall be treated with Neutralizer.
 11. All exposed finish hardware, lighting fixtures and accessories, glass and the like shall be adequately protected so that these are not stained with paint and other painting materials prior to painting works.
 12. All other surfaces endangered by stains and paint marks should be taped and covered with craft paper.

V. ELECTRICAL WORKS

A. CONDUITS, BOXES AND FITTINGS

1. This item shall consist of the furnishing and installation of the complete conduit work, consisting of electrical conduits; conduit boxes such as junction boxes, pull boxes, utility boxes, octagonal and square boxes; conduit fittings, such as couplings, locknuts and bushings and other electrical materials needed to complete the conduit roughing-in work of this project.
2. All materials shall be brand new and shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark.
3. All works throughout shall be executed in the best practice in a workmanlike manner by qualified and experienced electricians under the immediate supervision of a duly licensed Electrical Engineer.
4. The work to be done under this division of specifications consists of the fabrication, furnishing, delivery and installation, complete in all details of the electrical work, at the subject premises and all work materials incidental to the proper completion of the installation, except those portions of the work which are expressly stated to be done by other fields. All works shall be done in accordance with the rules and regulations and with the specifications.
5. All lighting fixtures and lamps are as specified and listed on lighting fixture schedule.
6. All grounding system installation shall be executed in accordance with the approved plans. Grounding system shall include building perimeter ground wires, ground rods, clamps, connectors, ground wells and ground wire taps as shown in the approved design.
7. All auxiliary systems such as telephone and intercom system, time clock system, fire alarm system and public address/nurse's call/paging system installations shall be done in accordance with the approved design.
8. Upon completion of the electrical construction work, the contractor shall provide all test equipment and personnel and to submit written copies of all test results.
9. The contractor shall guarantee the electrical installation are done and in accordance with the approved plans and specifications. The contractor shall guarantee that the electrical systems are free from all grounds and from all defective workmanship and materials and will remain so for a period of one year from date and acceptance of works. Any defect shall be remedied by the Contractor at his own expense.

B. WIRES AND WIRING DEVICES

1. 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.
2. Wires and cables shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (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.
3. Conductors or wires shall not be drawn in conduits until after the cement piaster 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.
4. All conductors of convenience outlets and lighting branch circuit homeruns shall be wired with a minimum of 3.5 mm in size. Circuit homeruns to panelboards shall not be smaller than 3.5 mm but all homeruns to panelboard more than 30 meters shall not be smaller than 5.5 mm. No conductor shall be less than 2 mm in size.

5. 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 solderless type, sufficiently large enough to enclose all strands of the conductors and securely fastened. They shall not loosen under vibration or normal strain.
6. All joints, taps and splices on wires larger than 14 mm shall be made of suitable solderless 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.
7. 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.
8. 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 filling shall not be permitted. Plates installed in wet locations shall be gasketed.
9. When more than one switch or device is indicated in a single location, gang plate shall be used.

C. POWER LOAD CENTER, SWITCHGEAR AND PANELBOARDS

1. This Item shall consist of the furnishing and installation of the power load center unit substation or low voltage switchgear and distribution panelboards at the location shown on the approved Plans complete with transformer, circuit breakers, cabinets and all accessories, completely wired and ready for service.
2. All materials shall be brand new and shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark.
3. Power Load Center Unit Substation. The Contractor shall furnish and install an indoor-type Power Load Center Unit Substation at the location shown on the approved Plans if required. It shall be totally metal-enclosed, dead front and shall consist of the following coordinated component parts:
 - a. High Voltage Primary Section. High voltage primary incoming line section consisting of the following parts and related accessories:
 - i. One (1) Air-filled Interrupter Switch, 2-position (open-close) installed in a suitable air filled metal enclosure and shall have sufficient interrupting capacity to carry the electrical load. It shall be provided with key interlock with the cubicle for the power fuses to prevent access to the fuses unless the switch is open.
 - ii. Three (3)-power fuses mounted in separate compartments within the switch housing and accessible by a hinged door.
 - iii. One (1) set of high voltage potheads or 3-conductor cables or three single conductor cables.
 - iv. Lightning arresters shall be installed at the high voltage cubicle if required.

Items (i) and (ii) above could be substituted with a power circuit breaker with the correct rating and capacity.
 - b. Transformer Section. The transformer section shall consist of a power transformer with ratings and capacities as shown on the plans. It shall be oil liquid-filled non-flammable type and designed in accordance with the latest applicable standards.

The transformer shall be provided with four (4) approximately 2 1/2 % rated KVA taps on the primary winding in most cases one (1) above and three (3) below rated primary voltage and shall be changed by means of externally gang-operated manual tap changer only when the transformer is de-energized. Tap changing under load is acceptable if transformer has been so designed.

The following accessories shall be provided with the transformer, namely: drain valve, sampling device, filling connection, oil liquid level gauge, ground pad, top filter press connection, lifting lugs, diagrammatic nameplate, relief valve, thermometer and other necessary related accessories.

The high-voltage and low-voltage bushings and transition flange shall be properly coordinated for field connection to the incoming line section and low voltage switchboard section, respectively.

- c. Low Voltage Switchboard Section. The low-voltage switchboard shall be standard modular-unitized units, metal-built, dead front, safety type construction and shall consist of the following:

- i. Switchboard Housing. The housing shall be heavy gauge steel sheet, dead front type, gray enamel finish complete with frame supports, steel bracings, steel sheet panelboards, removable rear plates, copper busbars, and all other necessary accessories to insure sufficient mechanical strength and safety. It shall be provided with grounding bolts and clamps.
- ii. Secondary Metering Section. The secondary metering section shall consist of one (1) ammeter, AC, indicating type; one (1) voltmeter, AC, indicating type, one (1) ammeter transfer switch for 3-phase; one (1) voltmeter transfer switch for 3-phase; and current transformers of suitable rating and capacity.

The above-mentioned instruments shall be installed in one compartment above the main breaker and shall be complete with all necessary accessories completely wired, ready for use.

- iii. Main Circuit Breaker. The main circuit breaker shall be draw-out type, manually or electrically operated as required with ratings and capacity as shown on the approved Plans.

The main breaker shall include insulated control switch if electrically operated, manual trip button, magnetic tripping devices, adjustable time overcurrent protection and instantaneous short circuit trip and all necessary accessories to insure safe and efficient operation.

- iv. Feeder Circuit Breakers. There shall be as many feeder breakers as are shown on the single line diagram or schematic riser diagram and schedule of loads and computations on the plans. The circuit breakers shall be drawout or molded case as required. The circuit breakers shall each have sufficient interrupting capacity and shall be manually operated complete with trip devices and all necessary accessories to insure safe and efficient operation. The number, ratings, capacities of the feeder branch circuit breakers shall be as shown on the approved Plans.

Circuit breakers shall each be of the indicating type, providing 'ON' - "OFF" and "TRIP" positions of the operating handles and shall each be provided with nameplate for branch circuit designation. The circuit breaker shall be so designed that an overload or short on one pole automatically causes all poles to open.

- d. Low Voltage Switchgear (For projects requiring low-voltage switchgear only). The Contractor shall furnish and install a low-voltage switchgear at the location shown on the plans. It shall be metal-clad, dead front, free standing, safety type construction and shall have copper busbars of sufficient size, braced to resist allowable root mean square (RMS) symmetrical short circuit stresses, and all necessary accessories. The low-voltage switchgear shall consist of the switchgear housing, secondary metering, main breaker and feeder branch circuit.

- e. **Grounding System.** All non-current carrying metallic parts like conduits, cabinets and equipment frames shall be properly grounded in accordance with the Philippine Electrical Code, latest edition.

The size of the ground rods and ground wires shall be as shown on the approved Plans. The ground resistance shall not be more than 5 ohms.

- f. **Panelboards and Cabinets.** Panelboards shall conform to the schedule of panelboards as shown on the approved Plans with respect to supply characteristics, rating of main lugs or main circuit breaker, number and ratings and capacities of branch circuit breakers.

Panelboards shall consist of a factory completed: dead front assembly mounted in an enclosing flush type cabinet consisting of code gauge galvanized sheet steel box with trim and door. Each door shall be provided with catch lock and two (2) keys. Panelboards shall be provided with directories and shall be printed to indicate load served by each circuit.

Panelboard cabinets and trims shall be suitable for the type of mounting shown on the approved Plans. The inside and outside of panelboard cabinets and trims shall be factory painted with one rust-proofing primer coat and two finish shop coats of pearl gray enamel paint.

Main and branch circuit breakers for panelboards shall have the rating, capacity and number of poles as shown on the approved Plans. Breakers shall be thermal magnetic type. Multiple breaker shall be of the common trip type having a single operating handle. For 50-ampere breaker or less, it may consist of single-pole breaker permanently assembled at the factory into a multi-pole unit.

4. The Contractor shall install the Power Load Center Unit Substation or Low-Voltage Switchgear and Panelboards at the locations shown on the approved Plans.

Standard panels and cabinets shall be used and assembled on the job. All panels shall be of dead front construction furnished with trims for flush or surface mounting as required.

- D. Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the rules, regulations and requirements of the utility companies (as applicable).
- E. Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the more stringent apply.
- F. All equipment and installations shall meet or exceed minimum requirements of the Standards and Codes.
- G. Execute work in strict accordance with the best practices of the trades in a thorough, substantial, workmanlike manner by competent workmen.
- H. When the tests and inspections have been completed, a label shall be attached to all devices tested. The label shall provide the name of the testing company, the date the tests were completed, and the initials of the person who performed the tests.

I. PANELBOARDS

1. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 16 Sections 16073 and 16074 "Hangers and Supports for Electrical Systems and Vibration and Seismic controls for Electrical Systems" respectively.
2. Enclosures: Flush, Surface, Flush- and surface-mounted cabinets.
 - a. Rated for environmental conditions at installed location.
 - i. Indoor Dry and Clean Locations: NEMA, Type 1.
 - ii. Outdoor Locations: NEMA, Type 3R.

- iii. Kitchen and Wash-Down Areas: NEMA, Type 4X, stainless steel.
 - iv. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA, Type 12.
 - v. Outdoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA, Type 5R.
- b. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - c. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - d. Skirt for Surface-Mounted Panelboards: Same gauge and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
 - e. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
 - f. Finishes:
 - i. Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - ii. Back Boxes: Galvanized steel Same finish as panels and trim.
 - iii. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.
 - g. Directory Card: Inside panelboard door, mounted in transparent card holder metal frame with transparent protective cover.
3. Incoming Mains Location: Top or Bottom.
4. Phase, Neutral, and Ground Buses:
- a. Material: Hard-drawn copper, 98 percent conductivity.
 - b. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
 - c. Neutral Bus: 100 percent of phase bus 4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.


John Christopher P. Tomacruz
 Planning and Programming Division


Jocelyn A. Naong
 Planning and Programming Division

PROJECT TITLE: PROPOSED REHABILITATION OF MULTI PURPOSE HALL AT BAGUMBUHAY

LOCATION : BARANGAY BAGUMBUHAY, DISTRICT 3, QUEZON CITY

PROJECT NO. : 21 - 008 SV

DURATION : Sixty (60) Calendar Days

BREAKDOWN OF COST

| ITEM NO. | WORK DESCRIPTION | MATERIAL COST | LABOR COST | INDIRECT COST | AGGREGATE COST |
|-----------------|-------------------------|----------------------|-------------------|----------------------|-----------------------|
| I | GENERAL REQUIREMENTS | | | | |
| II | SITE WORKS | | | | |
| III | CIVIL/ STRUCTURAL WORKS | | | | |
| IV | ARCHITECTURAL WORKS | | | | |
| V | ELECTRICAL WORKS | | | | |

TOTAL COST ₱ _____

LUMP SUM BID IN WORDS : _____

Contractor : _____

BILL OF QUANTITIES
(Building Construction/Rehabilitation Project)

PROJECT TITLE : PROPOSED CONSTRUCTION OF ROOFING AT MULTI-PURPOSE HALL
AT BAGUMBUHAY

LOCATION : BARANGAY BAGUMBUHAY, DISTRICT 3, QUEZON CITY

PROJECT NO. : 21 - 008 SV

DURATION : Sixty (60) Calendar Days

SCOPE OF WORKS:

1. General Requirements include temporary facilities and utilities, billboard, scaffolding, construction safety and health, and clearing, hauling and disposal of construction materials and debris.
2. Site works include chipping of existing floor tiles and clearing and clearing and cleaning for painting preparations.
3. Civil / Structural works include concrete works, masonry works, metal works and roofing works.
4. Architectural works include installation of floor finishes, wall finishes, ceiling finishes, and painting works.
5. Electrical works include installation of roughing-ins, devices, fixtures and accessories.
6. All necessary testing and commissioning shall be performed in accordance to standards.

| ITEM NO | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | TOTAL COST |
|------------|--|-----|-------|-----------------------|------------|
| I | GENERAL REQUIREMENTS | | | | |
| | Billboard | 1 | unit | ₱ | ₱ |
| | Clearing, Hauling and Disposal of Construction Materials and Debris | 3 | t.l. | | |
| | Construction Safety and Health Equipment | 1 | unit | | |
| | Temporary Electrical and Water Facilities | 60 | day | | |
| | Temporary Enclosure Around the Construction Area (H=2.4m) | 32 | l.m. | | |
| | | | | Direct Cost I | ₱ |
| II | SITE WORKS | | | | |
| | Demolition Works | | | | |
| | Chipping of Tiles | 48 | sq.m. | ₱ | ₱ |
| | Clearing and Cleaning for Painting Preparations | 10 | sq.m. | | |
| | | | | Direct Cost II | ₱ |
| III | CIVIL/ STRUCTURAL WORKS | | | | |
| | Concreting Works | | | | |
| | On-Site Mix Concrete | | | | |
| | Lintel Beam | 1 | cu.m. | ₱ | ₱ |
| | Reinforcing Steel Bars | | | | |
| | Grade 40 Reinforcing Steel Bars including G.I. Tie Wire Ga. #16 | | | | |
| | 10mm Ø Lintel Beam | 29 | kg. | | |
| | Grade 60 Reinforcing Steel Bars including G.I. Tie Wire Ga. #16 | | | | |
| | 16mm Ø Lintel Beam | 88 | kg. | | |
| | Formworks | | | | |
| | Lintel Beam | 9 | sq.m. | | |
| | Masonry Works | | | | |
| | Laying of 150mm CHB, including Mortar, Reinforcement and Two-face Plastering | 3 | sq.m. | | |
| | Plastering of CHB Walls | 37 | sq.m. | | |
| | Metal Works | | | | |

| ITEM NO | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | TOTAL COST |
|---------|-------------------------------------|-----|-------|-----------|------------|
| | Roof Sway Brace | | | | |
| | 75mm x 75mm x 6mm Angle Bar | 559 | kg. | | |
| | 50mm x 50mm x 6mm Angle Bar | 352 | kg. | | |
| | 50mm x 100mm x 1.2mm C Purlins | 576 | kg. | | |
| | 10mm Ø Round Bar (Sagrod) | 10 | kg. | | |
| | 200mm x 200mm x 5mm Tubular Bar | 78 | kg. | | |
| | 300mm x 300mm x 12mm Base Plate | 68 | kg. | | |
| | Right Gate | | | | |
| | 50mm x 50mm x 6mm Tubular Bar | 52 | kg. | | |
| | 10mm x 10mm Square Bar | 15 | kg. | | |
| | Cylindrical Hinge | 2 | piece | | |
| | Miscellaneous and Consumables | | | | |
| | 25mm Ø x 150mm Dyna Bolt | 32 | piece | | |
| | Acetylene Tank Refill | 3 | tank | | |
| | Assorted Metal Drill Bit | 9 | piece | | |
| | Cut Off Blade | 5 | piece | | |
| | Grinding Disc Metal | 11 | piece | | |
| | Oxygen Tank Refill | 6 | tank | | |
| | Welding Rod | 8 | box | | |

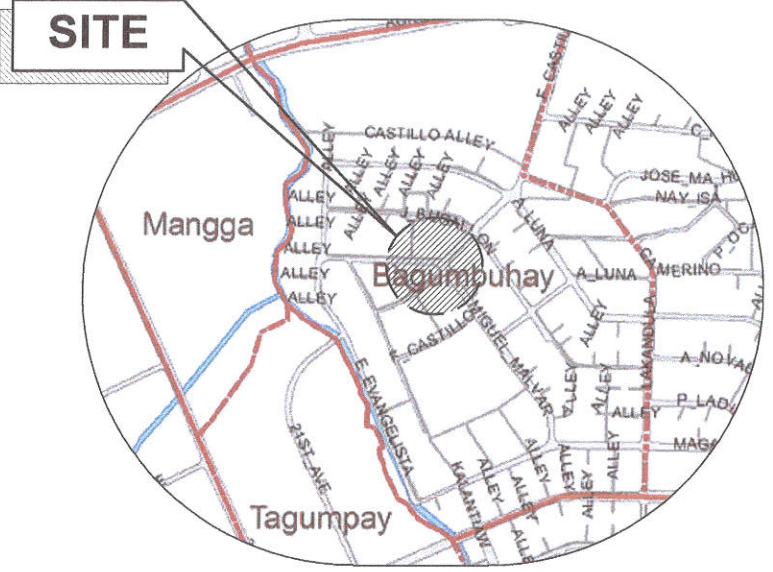
| ITEM NO | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | TOTAL COST |
|-----------|---|-----|-------|---------------------------|------------|
| | Roofing Works | | | | |
| | Pre-Painted G.I. Rib-Type Roofing | 56 | sq.m. | | |
| | Pre-Painted G.I. End Flashing | 15 | l.m. | | |
| | 6mm thk. One-Sided Aluminum Foil Thermal Insulation | 56 | sq.m. | | |
| | Tekscrew | 359 | piece | | |
| | | | | Materials Cost III | ₱ |
| | | | | Labor Cost III | |
| | | | | Direct Cost III | ₱ |
| IV | ARCHITECTURAL WORKS | | | | |
| | Floor Finishes | | | | |
| | 600mm x 600mm Non-Skid Homogeneous Floor Tiles | 49 | sq.m. | ₱ | ₱ |
| | Wall Finishes | | | | |
| | 600mm x 600mm Homogeneous Wall Tiles | 37 | sq.m. | | |
| | Ceiling Finishes | | | | |
| | 6mm Thk Fiber Cement Board including Metal Framing | 56 | sq.m. | | |
| | Painting Works | | | | |
| | Epoxy Enamel Paint Finish (Metal Surfaces) | 10 | sq.m. | | |
| | Elastomeric Paint Finish (Perimeter Posts) | 8 | sq.m. | | |
| | Latex Paint Finish (Ceiling) | 56 | sq.m. | | |
| | | | | Materials Cost IV | ₱ |
| | | | | Labor Cost IV | |
| | | | | Direct Cost IV | ₱ |
| V | ELECTRICAL WORKS | | | | |
| | Roughing-ins | | | | |
| | 20mmØ PVC Pipe | 30 | piece | ₱ | ₱ |
| | Fittings and Accessories | | | | |
| | 20mmØ PVC Adaptor | 52 | piece | | |
| | 20mmØ PVC Flexible Tube | 15 | lm | | |
| | 20mmØ PVC Locknut and Bushing | 52 | pair | | |
| | 50mm x 100mm PVC Utility Box with Cover | 8 | piece | | |
| | 100mm x 100mm PVC Junction Box with Cover | 10 | piece | | |
| | 100mm x 100mm PVC Utility Box (Pullbox) | 5 | piece | | |
| | Wires and Cables | | | | |
| | 3.5mm² THHN Wire | 1 | roll | | |
| | 3.5mm² TW Wire | 100 | l.m. | | |
| | Wiring Devices and Other Fixtures | | | | |
| | 300mm x 1200mm, 1 x 18w LED, Troffer Type, with Complete Accessories, Recessed Type | 5 | set | | |
| | Orbit Fan with Selector Switch | 3 | set | | |
| | Outlet with Grounding, Two-Gang | 5 | piece | | |
| | Switch with Plate and Cover, Three Gang | 1 | piece | | |
| | Panelboard | | | | |
| | Lighting Power Panel (LPP) | | | | |
| | Main: 30AT, 2P, 230V, 18 KAIC, MCCB Branches: 4-20AT, 2P, 230V, Bolt-on Enclosure: NEMA 1 with Ground Terminals | 1 | assy | | |
| | Pipe Hangers & Supports | | | | |
| | Horizontal Layout of Pipe | 30 | l.m. | | |

| ITEM NO | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | TOTAL COST |
|---------|--|-----|-------|-------------------------|------------|
| | Miscellaneous & Consumables | | | | |
| | 400cc Solvent Cement | 2 | can | | |
| | Electrical Tape | 4 | roll | | |
| | G.I. Tie Wire Ga. 16 (for Cable Pulling) | 1 | kg | | |
| | Hacksaw Blade | 3 | piece | | |
| | Masking Tape | 1 | roll | | |
| | Pulling Lubricant | 1 | can | | |
| | Rubber Tape | 1 | roll | | |
| | Torch with Butane | 2 | set | | |
| | | | | Materials Cost V | ₱ |
| | | | | Labor Cost V | |
| | | | | Direct Cost V | ₱ |

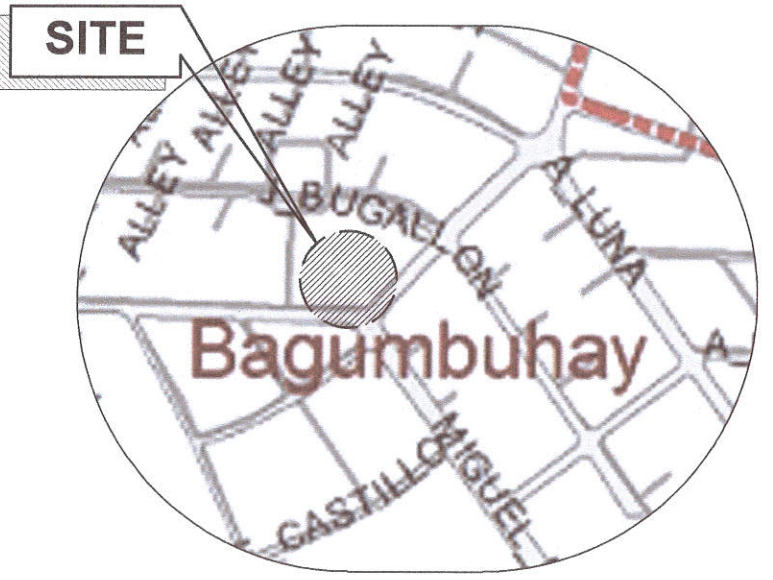
| ITEM NO | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | TOTAL COST |
|---------|-------------------------------------|-----|------|-----------|------------|
|---------|-------------------------------------|-----|------|-----------|------------|

SUMMARY

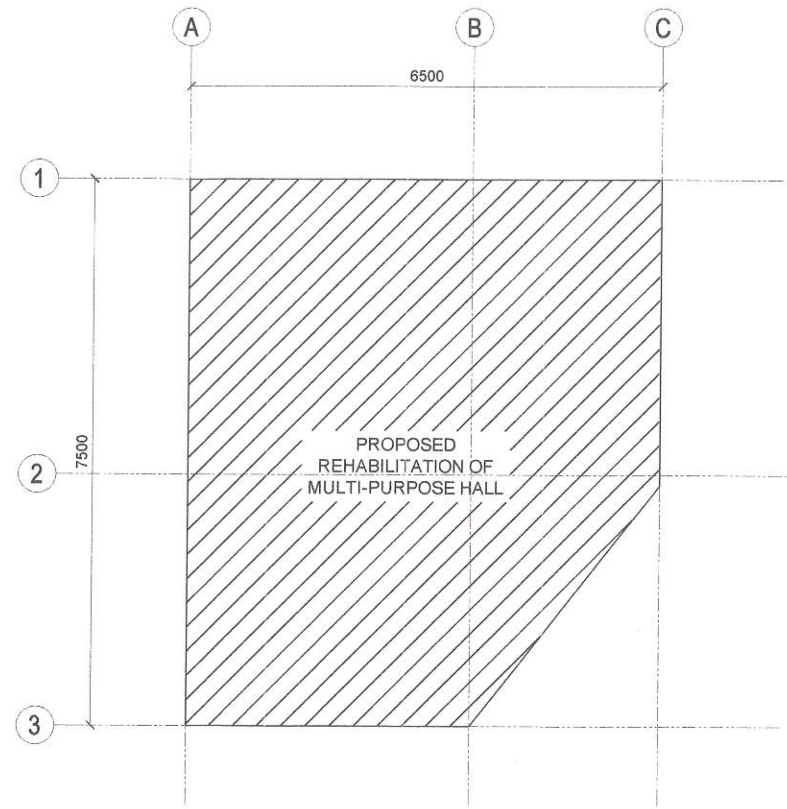
| ITEM NO | WORK DESCRIPTION AND SCOPE OF WORKS | AMOUNT |
|--|--|--------|
| I | GENERAL REQUIREMENTS | ₱ |
| II | SITE WORKS | |
| III | CIVIL/ STRUCTURAL WORKS | |
| IV | ARCHITECTURAL WORKS | |
| V | ELECTRICAL WORKS | |
| Note: | Overhead, Contingencies and Miscellaneous Expenses (OCM) | ₱ |
| Strictly enforce health protocols relative to the latest applicable DPWH memorandum | Profit | |
| | VAT | |
| | TOTAL ESTIMATED COST | ₱ |



1 VICINITY MAP SCALE: NTS




2 LOCATION PLAN SCALE: NTS



3 SITE DEVELOPMENT PLAN SCALE: NTS

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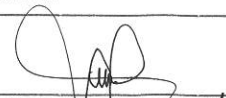


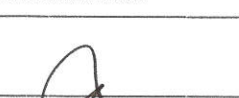
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CITY ENGINEERING DEPARTMENT

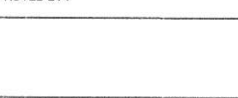
PROJECT TITLE :
PROPOSED REHABILITATION OF MULTI-PURPOSE HALL

LOCATION:
BARANGAY BAGUMBUHAY DISTRICT 3, QUEZON CITY

DRAWN BY : EME
DATE : AUG. 12, 2021
CHECKED BY: JAN
REVISION NO.: 1

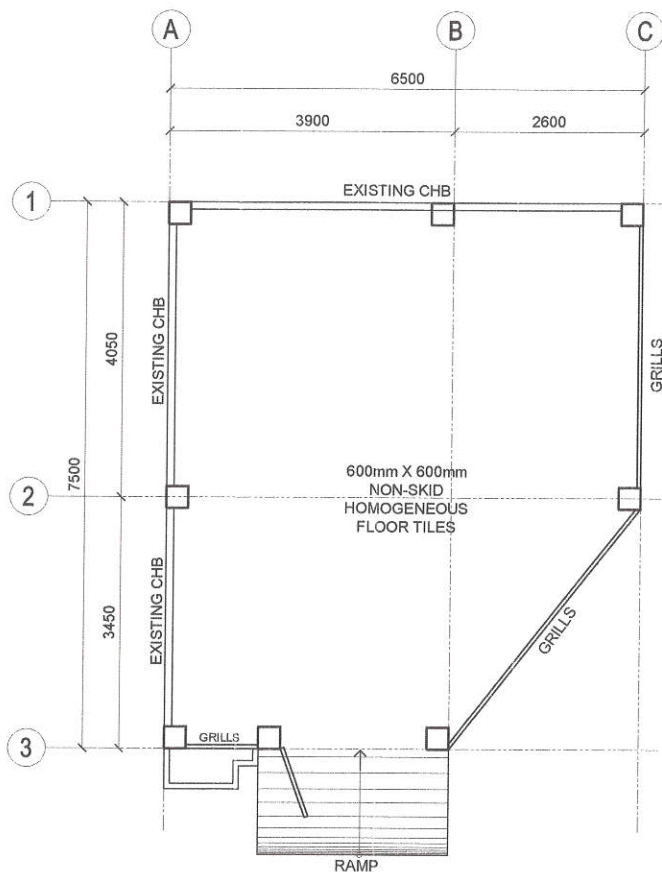
SUBMITTED BY:

ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL :

ENGR. ISABANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

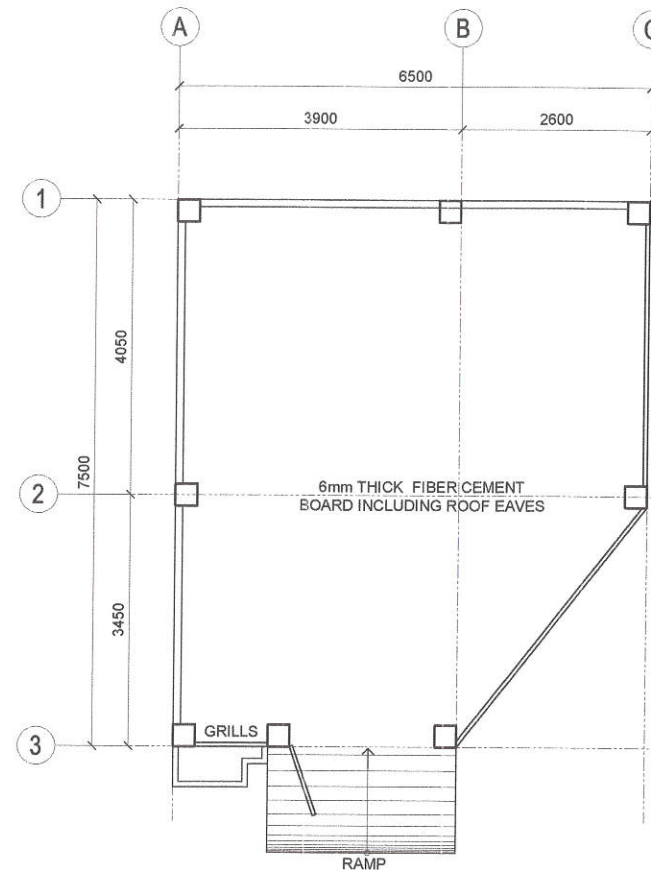
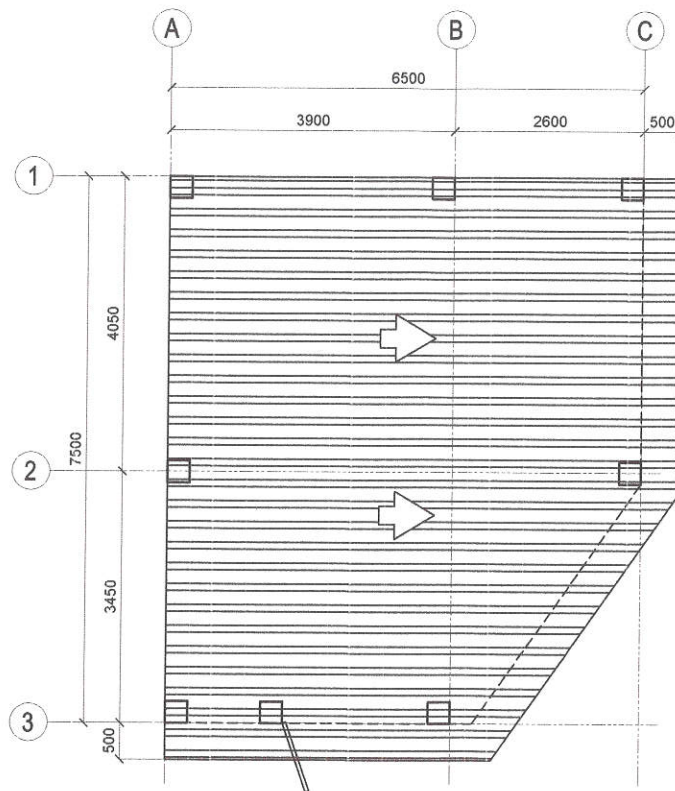
APPROVED BY :

HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

SHEET CONTENT
VICINITY MAP
LOCATION PLAN
PERSPECTIVE

SHEET NO.
AR-01
01/08



NOTE:
 1. EXISTING CHB WALL TO BE PLASTERED AND PAINTED.
 2. EXISTING METAL GRILLS TO BE REPAINTED.



1 PROPOSED G/F PLAN

SCALE: 1:100 METERS

2 ROOF PLAN

SCALE: 1:100 METERS

2 REFLECTED CEILING PLAN

SCALE: 1:100 METERS



Republika ng Pilipinas
 Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE :
PROPOSED REHABILITATION OF MULTI-PURPOSE HALL
 LOCATION:
 BARANGAY BAGUMBAY DISTRICT 3, QUEZON CITY

DRAWN BY : EME
 DATE : AUG. 12, 2021
 CHECKED BY : JAN
 REVISION NO.: 1

SUBMITTED BY:

ENGR. LEO S. DEL ROSARIO
 HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL :

ENGR. ISAGANI R. VERZOSA, JR.
 OIC, CITY ENGINEERING DEPARTMENT

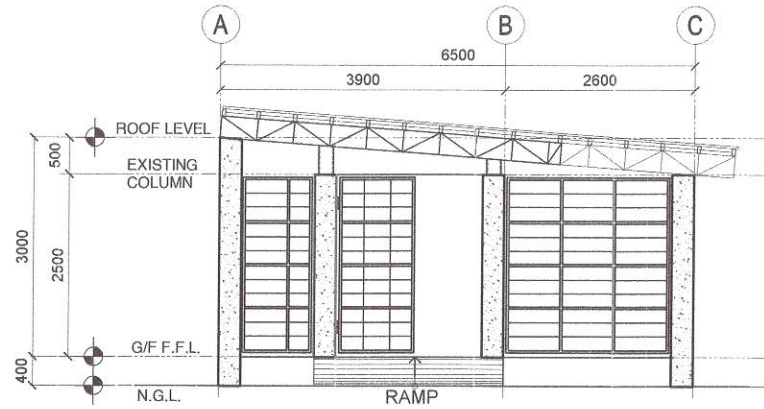
APPROVED BY :

HON. MA. JOSEFINA G. BELMONTE
 CITY MAYOR, QUEZON CITY

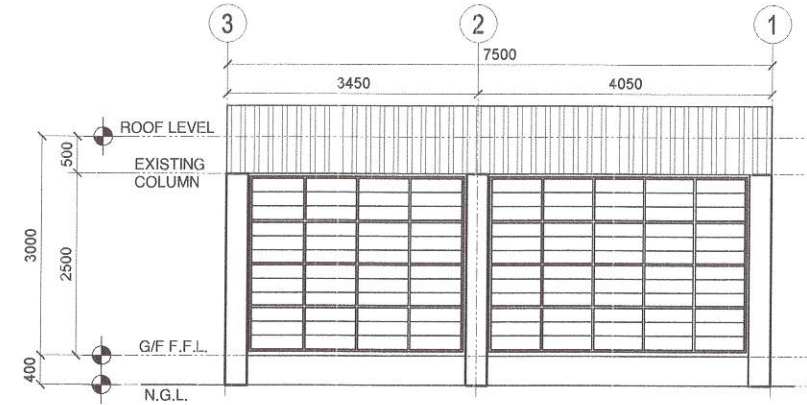
SHEET CONTENT
 PROPOSED G/F PLAN
 ROOF PLAN
 REFLECTED CEILING PLAN

SHEET NO.

AR-02
0208



NOTE:
1. EXISTING METAL GRILLS TO BE REPAINTED.

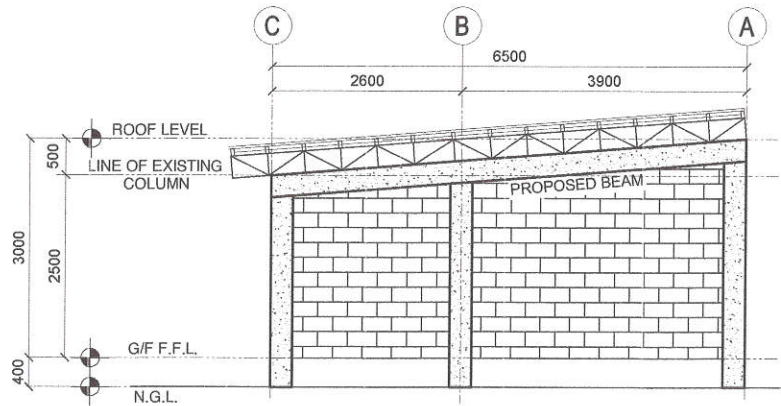


NOTE:
1. EXISTING METAL GRILLS TO BE REPAINTED.

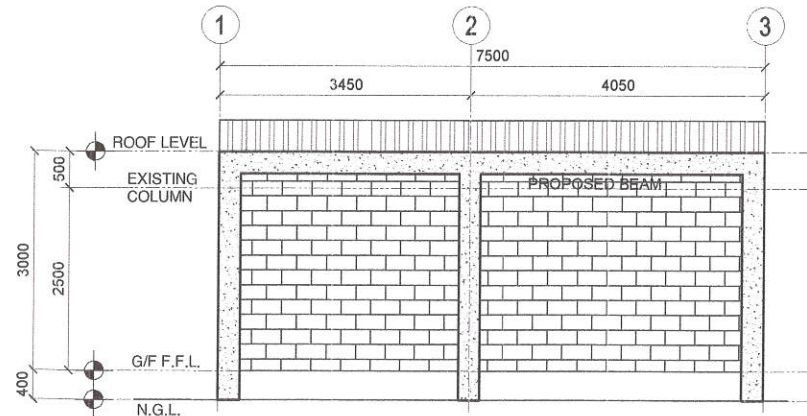
1 FRONT ELEVATION

SCALE: 1:100 METERS

3 RIGHT SIDE ELEVATION



NOTE:
1. EXISTING CHB WALL TO BE PLASTERED AND PAINTED.



NOTE:
1. EXISTING CHB WALL TO BE PLASTERED AND PAINTED.

2 REAR ELEVATION

SCALE: 1:100 METERS

4 LEFT SIDE ELEVATION

SCALE: 1:100 METERS



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
**PROPOSED REHABILITATION
OF MULTI-PURPOSE HALL**

LOCATION:
BARANGAY BAGUMBAY DISTRICT 3, QUEZON CITY

DRAWN BY: EME
DATE: AUG. 12, 2021
CHECKED BY: JMN
REVISION NO.: 1

SUBMITTED BY:

ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

SHEET CONTENT
FRONT ELEVATION
REAR ELEVATION
RIGHT ELEVATION
LEFT SIDE ELEVATION

SHEET NO.
AR-03
03/08

GENERAL NOTES:

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE LATEST BUILDING CODE OF AMERICAN CONCRETE INSTITUTE (ACI-318).
- ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT (28) DAYS WITH CORRESPONDING MAXIMUM SIZE AGGREGATE AND SLUMPS AS FOLLOWS.
- ALL REINFORCING BARS SHALL CONFORM TO PNS49 GRADE 275 FOR 12mm AND SMALLER BARS AND GRADE 415 FOR 16mm AND LARGER BARS.
- IN GENERAL THE LATEST EDITION OF ACM15, MANUAL OF STANDARD PRACTICE DETAILING REINFORCED CONCRETE STRUCTURES SHALL BE ADHERED TO UNLESS OTHERWISE SHOWN OR NOTED.
- MAINTAIN MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:

| LOCATION | STRENGTH | MAX. SIZE OF AGGREGATES | MAX. SLUMP |
|--|----------------------|-------------------------|---------------|
| SLAB ON GRADE CURBS, PAVEMENT & WALL FOOTING | 300 Psi (20.685 MPa) | 1 IN. (25mm) | 4 IN. (100mm) |
| BEAMS, COLUMN & FOOTING SUSPENDED SLAB | 300 Psi (20.685 MPa) | 3/4 IN. (19mm) | 4 IN. (100mm) |

| LOCATION | CONCRETE COVER |
|--|----------------|
| CONCRETE DEPOSITED DIRECTLY AGAINST GROUND | 75 mm |
| SUSPENDED SLABS | 20mm |
| SLAB ON GRADE | 40 mm |
| WALLS ABOVE GRADE | 25 mm |
| BEAMS & COLUMNS | 40 mm |

- SPLICES SHALL BE SECURELY WIRED TOGETHER AND SHALL LAP OR EXTEND IN ACCORDANCE WITH TABLE 1 (TABLE OF LAP SPLICE AND ANCHORAGE LENGTH UNLESS OTHERWISE SHOWN ON DRAWINGS SPLICES SHALL BE STAGGERED WHENEVER POSSIBLE).
- ALL ANCHOR BOLTS, DOWELS AND OTHER INSERTS SHALL BE PROPERLY POSITIONED AND SECURED IN PLACE PRIOR TO PLACING OF CONCRETE.
- CONTRACTOR SHALL NOTE AND PROVIDE ALL MISCELLANEOUS CURBS, SILLS, STOOLS, EQUIPMENTS AND MECHANICAL BASES.
- ALL CONCRETE SHALL BE KEPT MOIST FOR A MINIMUM OF SEVEN (7) CONSECUTIVE DAYS IMMEDIATELY AFTER POURING BY THE USE OF WET BURLAP FOG SPRAYING, CURING COMPOUNDS OR OTHER APPROVED METHODS.
- STRIPPING OF FORMS AND SHORES:

| | |
|---|----------|
| FOUNDATION | 24 HOURS |
| SUSPENDED SLAB EXCEPT WHEN ADDITIONAL LOADS ARE IMPOSED | 8 DAYS |
| WALLS | 21 DAYS |
| BEAMS | 14 DAYS |
| COLUMNS | 21 DAYS |

- DEVELOPMENT LENGTH FOR ALL BARS SHALL BE A MINIMUM OF 50 BAR DIAMETER UNLESS OTHERWISE NOTED STRUCTURAL STEEL AND PLATES.
- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM (A-36) SPECIFICATIONS WITH MINIMUM YIELD STRENGTH, $f_y = 250 \text{ MPa}$.
- ANCHOR & FASTENER BOLTS, ALL BOLTS SHALL CONFORM TO ASTM (A-307) SPECIFICATIONS.
- WELDING RODS, ALL WELDING RODS SHALL BE MILD STEEL ELECTRODE, LOW HYDROGEN E7018 WITH MINIMUM YIELD STRENGTH = 420 MPa.

FOUNDATION PLAN

- FOUNDATION IS DESIGNED BASED ON NATIONAL BUILDING CODE OF THE PHILIPPINES FOR AN ALLOWABLE SOIL BEARING CAPACITY OF 240kPa.
- FOUNDATION SHALL REST ON NATURAL SOIL, UNLESS OTHERWISE NOTED BY THE ENGINEER. NO PART OF THE FOUNDATION SHALL REST ON FILL.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER UPON COMPLETION OF FOUNDATION EXCAVATION FOR ACTUAL SOIL CONDITIONS WHICH DO NOT CONFORM TO THE BOA BEARING CAPACITY FOR PROPER REVISION.

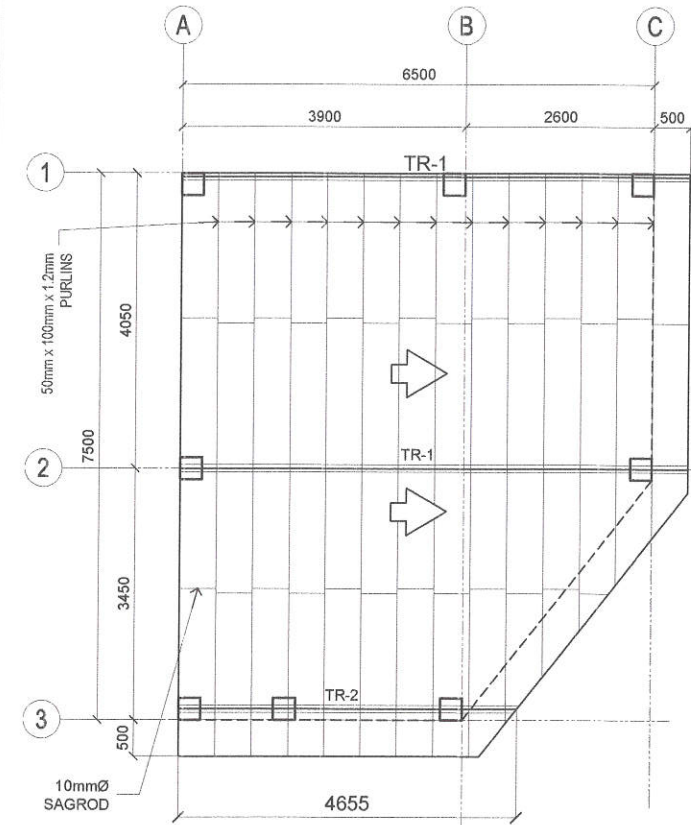
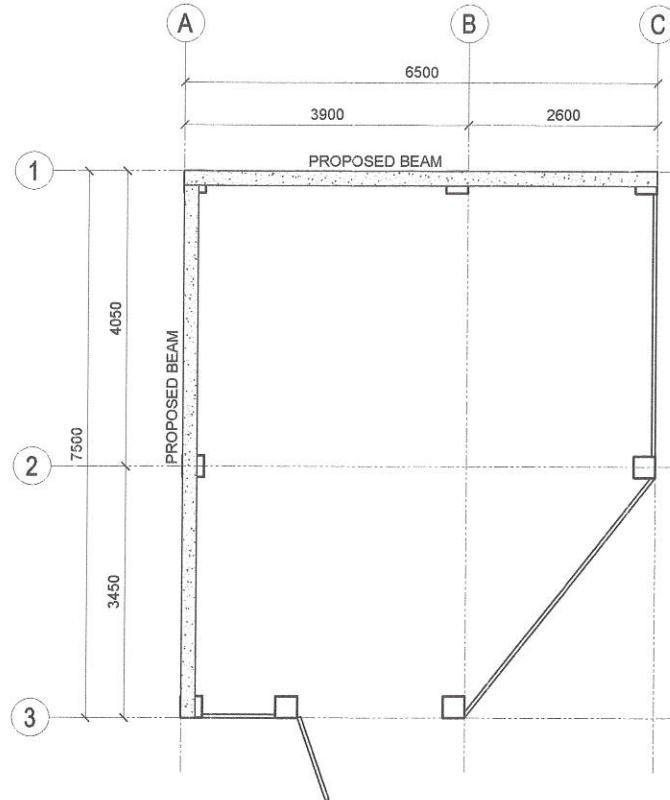
NOTES ON MASONRY WALLS

- ALL MATERIALS WORKMANSHIP SHALL BE IN ACCORDANCE W/ THE APPLICABLE STANDARD & SPECIFICATIONS OF THE STRUCTURAL CODE OF THE PHILIPPINES & UNIFORM BUILDING CODE.
- MORTAR & GROUT FOR ALL CONCRETE MASONRY SHALL CONFORM TO ASTM 270 - TYPE N & SHALL HAVE A MINIMUM OF 28 DAYS STANDARD CYLINDER COMPRESSIVE STRENGTH OF 17.5MPa (2500 Psi).
- ALL CHB SHALL BE LAID OUT WITH CELLS IN UNOBSTRUCTED VERTICAL CONTINUITY.
- ALL CELLS ESPECIALLY THOSE WITH REINFORCEMENT SHALL BE FILLED WITH MORTAR REINFORCEMENT, AS TABULATED BELOW SHALL BE PROVIDED UNLESS OTHERWISE SPECIFIED IN THE PLAN.
- ALL MASONRY WALLS SHALL BE PROVIDED W/ STIFFENED BEAM BLOCK & STIFFENER AS REQUIRED.
 - 5a. FOR HIGH WALLS (EVERY 3000mm & COLUMN (BOLT) AT 3000mm ON CENTER
 - 5b. FOR DOORS & WINDOWS OPENING PROVIDE LINTEL BEAM SAME AS STIFFENER BEAM BLOCK
- UNLESS OTHERWISE SHOWN IN PLANS, ALL CONCRETE HOLLOW BLOCK AND CERAMIC BLOCKS SHALL BE REINFORCED AS SHOWN IN THE SCHEDULE OF CONCRETE HOLLOW BLOCKS AND CERAMIC BLOCK REINFORCEMENT.

| SCHEDULE OF CONCRETE HOLLOW BLOCK AND CERAMIC BLOCK REINFORCEMENT | | | |
|---|--------------------|--------------------|---|
| BLOCK THICKNESS | REINFORCEMENT | | NOTES |
| | HORIZONTAL | VERTICAL | |
| 100 mm | 10mmØ @ 600mm O.C. | 10mmØ @ 600mm O.C. | A. MINIMUM LAP SPLICE = 0.25m B. PROVIDE RIGHT ANGLED REINFORCEMENT AT CORNERS 0.2m LONG C. WHERE CHB OR CER. BLK. WALL DOWELS JOIN COL. R.C. BEAMS AND WALL DOWELS WITH THE SAME SIZE AS VERT. OR HOR. REINFORCEMENTS SHALL BE PROVIDED. |
| 100 mm | 10mmØ @ 600mm O.C. | 10mmØ @ 600mm O.C. | |

TESTING & COMMISSIONING WORKS:

- ALL NECESSARY TESTING OF MATERIALS AND COMMISSIONING WORKS MUST BE PERFORMED AS PER STANDARD PROCEDURE.



1 GENERAL NOTES

SCALE NTS

2 FRAMING PLAN

3 ROOF FRAMING PLAN

SCALE: 1:100METERS



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION OF MULTI-PURPOSE HALL

LOCATION:
BARANGAY BAGUMBUHAY DISTRICT 3, QUEZON CITY

DRAWN BY: EME
DATE: AUG. 12, 2021
CHECKED BY: JAN
REVISION NO.: 1

SUBMITTED BY:

ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

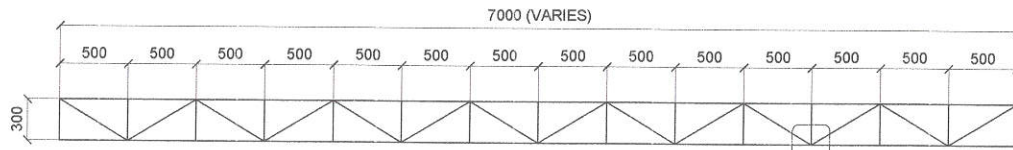
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

SHEET CONTENT
GENERAL NOTES
FRAMING PLAN
ROOF FRAMING PLAN

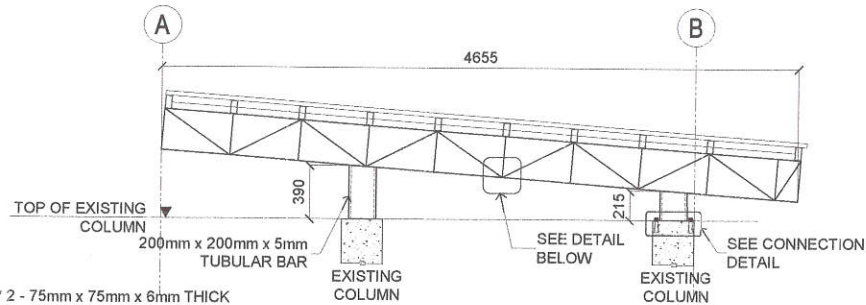
SHEET NO.
ST-01
04 08



* 2 - 75mm x 75mm x 6mm THICK ANGLE BAR (TOP & BOTTOM CHORD)
 * 2 - 50mm x 50mm x 6mm ANGLE BAR (WEB MEMBER)

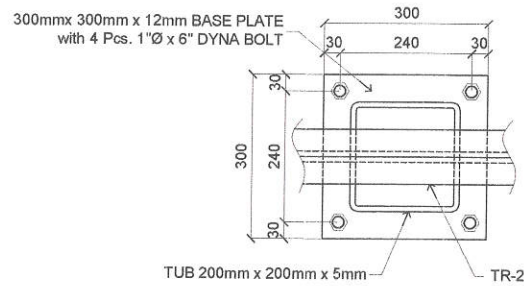
TR-1 DETAIL

SEE DETAIL BELOW

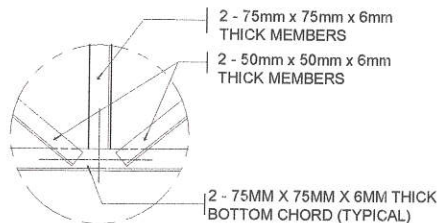


* 2 - 75mm x 75mm x 6mm THICK ANGLE BAR (TOP & BOTTOM CHORD)
 * 2 - 50mm x 50mm x 6mm ANGLE BAR (WEB MEMBER)

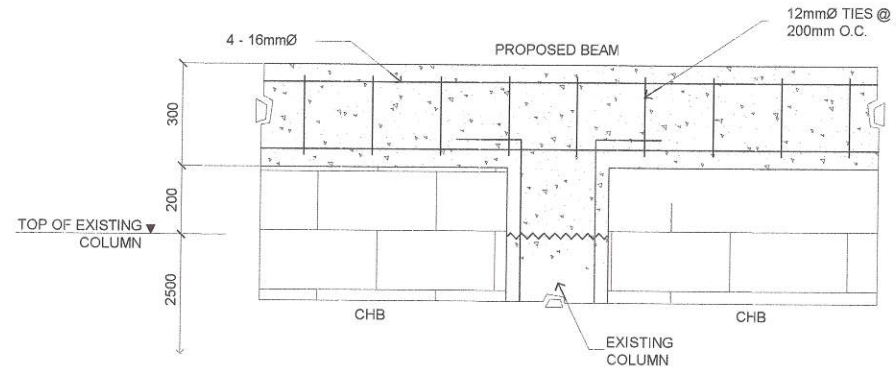
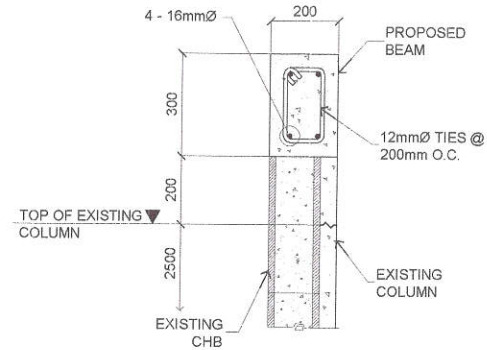
TR-2 DETAIL



BASE PLATE DETAIL



NOTE:
 * 2 - 75 mm x 75 mm x 6mm THICK ANGLE BAR (TOP & BOTTOM CHORD)
 * 2 - 50 mm x 50 mm x 6 mm ANGLE BAR (WEB MEMBER)
 * 50 mm x 100 mm C-PURLINS @ 600 MM SPACING ON CENTER



1 TRUSS DETAIL

SCALE: 1:100 METERS

2 PROPOSED BEAM DETAIL

SCALE: 1:100 METERS



Republika ng Pilipinas
 Lungsod ng Quezon
 CITY ENGINEERING DEPARTMENT

| | |
|---|---------------------|
| PROJECT TITLE: | DRAWN BY: EME |
| PROPOSED REHABILITATION OF MULTI-PURPOSE HALL | DATE: AUG. 12, 2021 |
| LOCATION: BARANGAY BAGUMBUHAY DISTRICT 3, QUEZON CITY | CHECKED BY: JAN |
| | REVISION NO.: 1 |

| | |
|---|---|
| SUBMITTED BY: | RECOMMENDING APPROVAL: |
| ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION | ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT |

| |
|--|
| APPROVED BY: |
| HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY |

| | |
|---|---------------|
| SHEET CONTENT | SHEET NO. |
| TRUSS DETAIL PROPOSED BEAM DETAIL | ST-02 0508 |

GENERAL NOTES:

- ALL ELECTRICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE LAWS AND ORDINANCES OF THE LOCAL CODE ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL POWER AND TELEPHONE UTILITY COMPANY.
- THE CONTRACTOR SHALL SECURE ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE WORK AND SHALL FURNISH THE OWNER THROUGH THE ENGINEERS, FINAL CERTIFICATES OF ELECTRICAL INSPECTION AND APPROVAL FROM PROPER GOVERNMENT AUTHORITIES FOR COMPLETION OF WORK.
- ALL EMBEDDED BRANCH CIRCUITS SHALL BE PVC CONDUITS AND FOR EXPOSED INSTALLATION SHALL BE IMC SUPPORTED BY CONDUIT CLAMPS EVERY 700 MILLIMETER
- PULL BOXES SHALL BE PROVIDED BY THE CONTRACTOR WHENEVER NECESSARY TO FACILITATE WIRE PULLING EVEN IF THESE ARE NOT INDICATED ON THE PLANS. SIZING OF ALL PULLBOXES SHALL BE COMPUTED BASED ON THE CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. LOCATION OF PULLBOXES SHALL BE APPROVED BY THE ARCHITECT/ENGINEER AND MUST BE REFLECTED ON THE "AS-BUILT" PLAN.
- ALL POWER OUTLETS AND SWITCHES SHALL BE GROUNDING TYPE WITH PARALLEL SLOTS FOR 230 V.
- PROVIDE GROUND FAULT CURRENT INTERRUPTER CIRCUIT BREAKER FOR LOADS MARKED "GFCI" ON THE PLAN.
- ALL METALLIC CONDUITS, CABINETS AND EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED.
- UNLESS OTHERWISE NOTED, MOUNTING HEIGHT FOR WALL MOUNTED DEVICES SHALL BE AS FOLLOWS:

RECEPTACLE OUTLET - 300 MM AFF. (1600MM ABOVE WORKING COUNTER)
 TELEPHONE OUTLET - 300 MM AFF
 CATV OUTLET - 300 MM AFF
 LIGHTING SWITCH - 1400 MM AFF
 PANELBOARD - 1600 MM AFF

- REFER TO MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR RATINGS AND LOCATIONS OF EQUIPMENT AS WELL AS THEIR CONTROL SEQUENCES AS SPECIFIED AND OR SHOWN UNDER THEIR RESPECTIVE SECTIONS.
- ALL MATERIALS TO BE USED SHALL BE OF THE BEST QUALITY, BRAND NEW AS SPECIFIED.
- THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO PRESENT GENERAL LAYOUT AND BROAD OUTLINE/DESCRIPTION OF THE PROJECT BUT DO NOT NECESSARILY INDICATE/DESCRIBED ACTUAL LOCATIONS, LEVEL AND DISTANCES OF THE EQUIPMENT. THE CONTRACTOR IS HEREBY REQUIRED TO MAKE SUCH ADJUSTMENT AT THE JOBSITE AS LOCATION, DISTANCES AND LEVELS ARE GOVERNED BY ACTUAL FIELD CONDITIONS.
- ANY DISCREPANCY BETWEEN THE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION DECISION.
- ALL LIGHTING AND CONVENIENCE OUTLET CIRCUITS SHALL BE 3.5 SQ. MM. THWN-2 COPPER WIRE UNLESS OTHERWISE NOTED. MINIMUM SIZE OF WIRE SHALL BE 3.5 SQ. MM. COPPER WIRE. ALL WIRES AND CABLES SHALL BE COLOR CODED AS FOLLOWS:

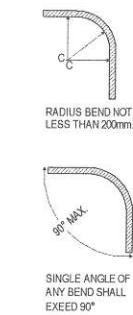
LINE 1 - RED
 LINE 2 - YELLOW
 NEUTRAL - WHITE
 GROUND - GREEN

- BOXES, WIRE, GUTTERS, ENCLOSURE SHALL BE FABRICATED FROM STEEL WITH THICKNESS AS FOLLOWS:
 MAXIMUM WIDTH OF THE WIDEST SURFACE STEEL
 UP TO INCLUDING 152.40 MM GA 16 PAINTED WITH METAL PRIMER EPOXY AND TOPCOAT
 OVER 152.40 MM BUT NOT OVER 457.30 GA 14 PAINTED WITH METAL PRIMER EPOXY AND TOPCOAT
 OVER 457.30 MM BUT NOT OVER 762 MM GA 12 PAINTED WITH METAL PRIMER EPOXY AND TOPCOAT
 OVER 762 MM GA 10 PAINTED WITH METAL PRIMER EPOXY AND TOPCOAT
- ALL ELECTRICAL WORKS HEREIN SHALL BE EXECUTED BY EXPERIENCED MEN UNDER THE DIRECT SUPERVISION OF A FULL-TIME LICENSED ELECTRICAL ENGINEER AND A DULY ACCREDITED ELECTRICAL CONTRACTOR BY PCAB. WORKS SHALL BE NEATLY PLACED, SECURELY FASTENED AND PROPERLY FINISHED.
- TYPE OF SERVICE ENTRANCE SHALL BE SINGLE-PHASE, TWO-WIRE PLUS GROUND, 60 HERTZ, 230V AC NOMINAL.
- CONDUITS IN NO CASE SHALL THERE BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS IN ANY ONE RUN. ALL CONDUIT BENDS SHALL BE FIELD MADE BY USING HYDRAULIC BENDERS. MINIMUM BENDING RADIUS MUST BE IN ACCORDANCE TO THE CODE REQUIREMENTS.
- UPON COMPLETION OF ELECTRICAL CONSTRUCTION WORK, INSULATION RESISTANCE TEST AND FUNCTIONALITY TEST SHALL BE PERFORMED BY THE CONTRACTOR INCLUSIVE OF THE INSTALLATION TO BE REPORTED IN DETAILS ON FORMS APPROVED BY THE QUEZON CITY ENGINEERING DEPARTMENT REPRESENTATIVE. THE GROUND RESISTANCE FOR ELECTRICAL SYSTEMS SHALL NOT BE MORE THAN 5 OHMS. COMMUNICATION GROUNDING RESISTANCE SHALL NOT EXCEED 2 OHMS.

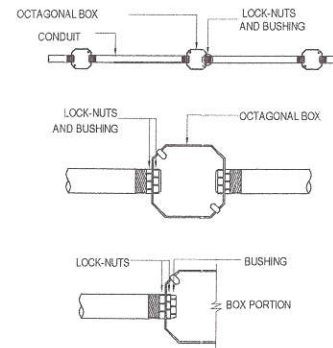
| | | | | | |
|--|--------------------------------------|--|--|--|------------------|
| | ADDITIONAL DUPLEX CONVENIENCE OUTLET | | ADDITIONAL 1X18W RECESSED TROFFER TYPE | | CIRCUIT HOMERUN |
| | ADDITIONAL ORBIT FAN | | SELECTOR SWITCH (FAN) | | PANEL BOARD |
| | THREE GANG SWITCH (LIGHTS) | | KILOWATT-HOUR METER | | SERVICE ENTRANCE |

2 LEGEND & SYMBOLS

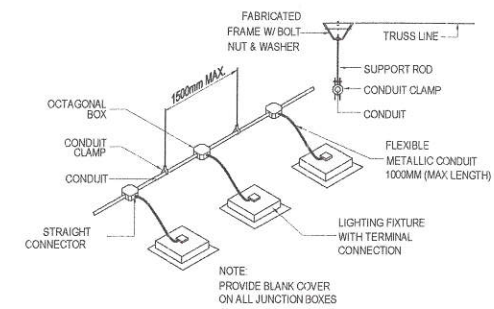
SCALE NTS



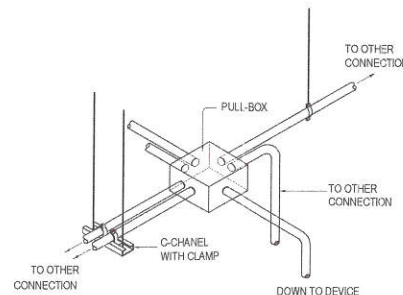
BENDING RADIUS DETAIL



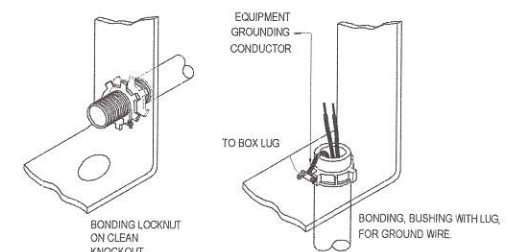
SPOT DETAIL OF CONDUIT RUN AND BOX



CONDUIT RUN FOR LIGHTING DISTRIBUTION IN ONE CIRCUIT (FOR EXPOSED OR INSIDE DROP-CEILING INSTALLATION)



PROPER CONDUIT LAYOUT at PULL BOX



NOTE: CONNECTION OF THREADED RIGID METAL CONDUIT OR INTERMEDIATE METALLIC CONDUIT TO A THREADED BOSS OR HUB IS CONSIDERED TO BE A BONDED CONDUIT TERMINATION.

BONDED RACEWAY TERMINATION FOR SHEET METAL

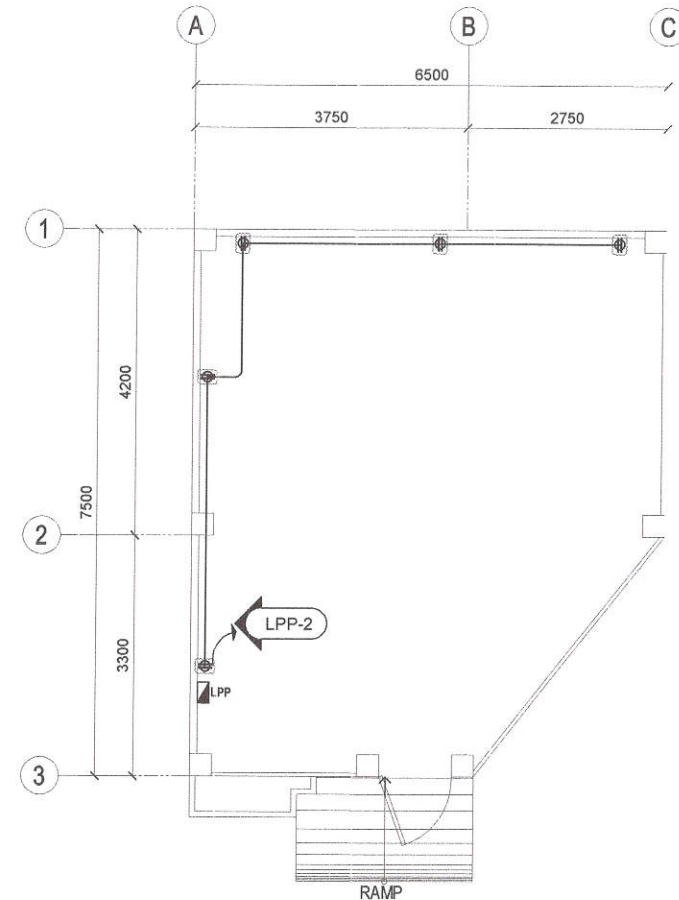
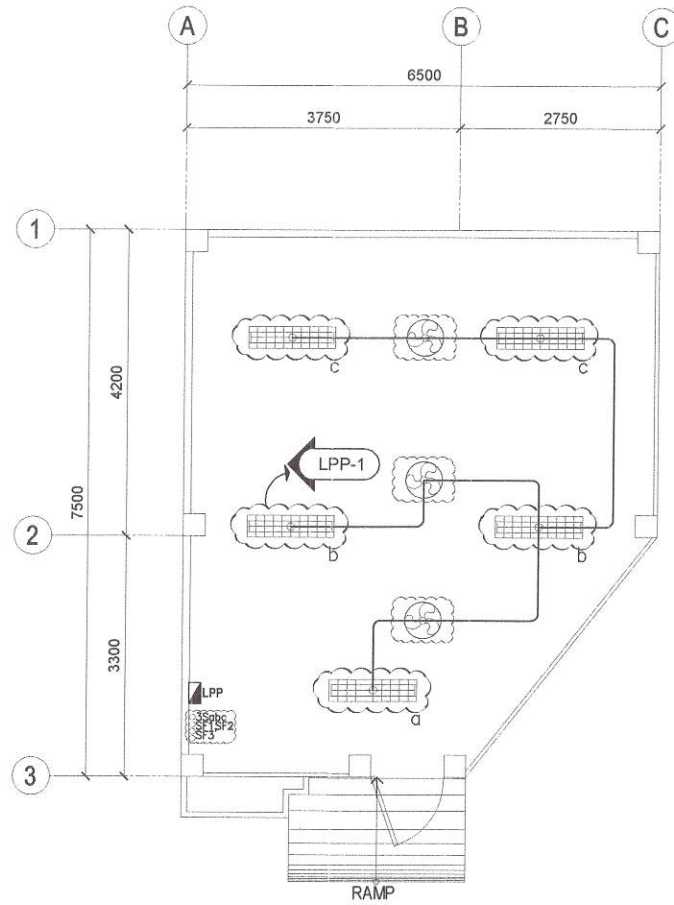
1 GENERAL NOTES

SCALE NTS

3 MISCELLANEOUS DETAILS

SCALE NTS

| | | | | | | | |
|---|---|----------------------|------------------|---|---|--|--|
| <p>Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT</p> | PROJECT TITLE : | DRAWN BY : EME | SUBMITTED BY : | RECOMMENDING APPROVAL : | APPROVED BY : | SHEET CONTENT | SHEET NO. |
| | <p>PROPOSED REHABILITATION OF MULTI-PURPOSE HALL</p> | DATE : AUG. 12, 2021 | CHECKED BY : JAN | ENGR. LEO S. DEL ROSARIO HEAD, PLANNING PROGRAMMING DIVISION | ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT | HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY | GENERAL NOTES LEGENDS AND SYMBOLS MISCELLANEOUS DETAILS |
| LOCATION: | BARANGAY BAGUMBUHAY DISTRICT 3, QUEZON CITY | REVISION NO. : 1 | | | | | |



1 LIGHTING LAYOUT

SCALE: 1:100 METERS

2 POWER LAYOUT

SCALE: 1:100 METERS



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

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OF MULTI-PURPOSE HALL**

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BARANGAY BAGUMBUHAY DISTRICT 3, QUEZON CITY

DRAWN BY: EME
DATE: AUG. 12, 2021
CHECKED BY: JMN
REVISION NO.: 1

SUBMITTED BY:

ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

ENGR. SAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

SHEET CONTENT
LIGHTING LAYOUT
POWER LAYOUT

SHEET NO.
EL-02
07/08

LIGHTING POWER PANEL (LPP)

LOCATION: GROUND FLOOR

MOUNTING: NEMA1, RECESSED WITH GRAY POWDERED COATED FINISH WITH MULTI-TERMINAL BLOCK FOR SOLID GROUND BUS

| CKT. NO. | LOAD DESCRIPTION | VOLTS | VA | AMP. | AT | SIZE OF | |
|----------|----------------------------------|-------|------|------|----|--|-------------------|
| | | | | | | WIRES | CONDUITS |
| 1 | 5-LIGHTING OUTLET 3-ORBIT FAN | 230 | 1350 | 5.87 | 20 | 2-3.5mm ² THHN COPPER WIRE 1-3.5mm ² TW GROUND WIRE | IN 20mmØ PVC PIPE |
| 2 | 5-CONVENIENCE OUTLET | 230 | 800 | 3.48 | 20 | 2-3.5mm ² THHN COPPER WIRE 1-3.5mm ² TW GROUND WIRE | IN 20mmØ PVC PIPE |
| 3 | SPARE | 230 | - | - | 20 | - | - |
| 4 | SPARE | 230 | - | - | 20 | - | - |
| | | | 2150 | 9.34 | | | |

COMPUTATION :

$$IT = \frac{6170}{230V} \times 1.25$$

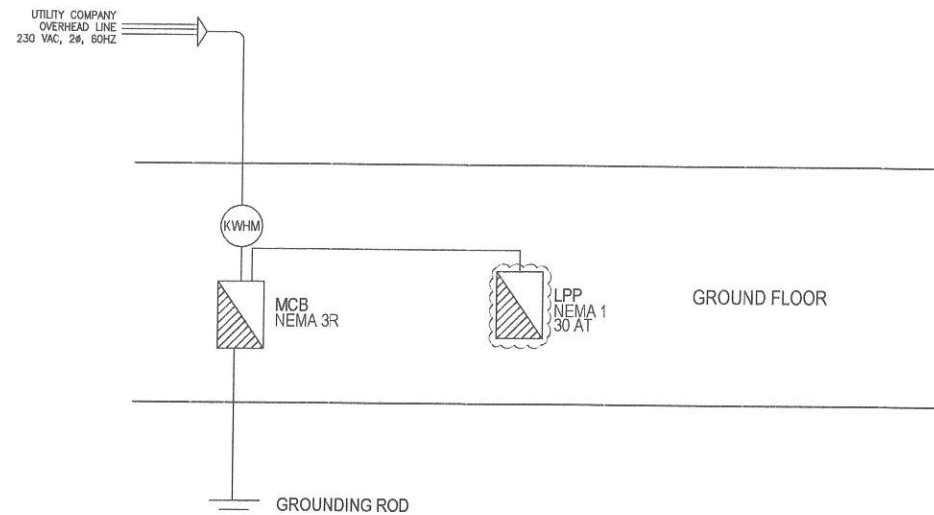
$$IT = 11.63 \text{ AMP.}$$

OVER CURRENT PROTECTION:

USE : 30AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER IN NEMA 1

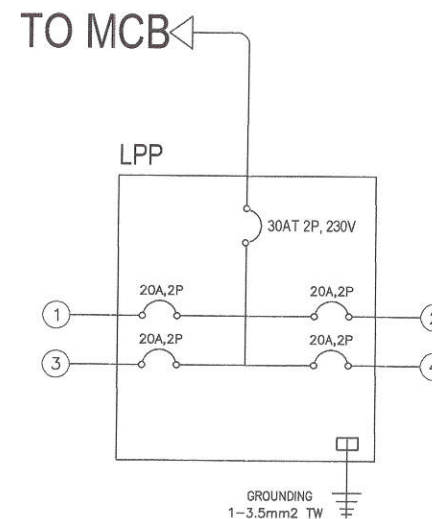
MAIN FEEDER :

USE : 2 - 3.5mm² THHN & 1-3.5mm² TW GROUND WIRE
IN 20mmØ PVC PIPE



2 SINGLE LINE DIAGRAM

NOT TO SCALE



SCHEDULE OF LOADS

NOT TO SCALE

3 PANEL BOARD DETAIL

NOT TO SCALE



Republika ng Pilipinas
Lungsod ng Quezon
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HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL :
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY :
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

SHEET CONTENT
SCHEDULE OF LOADS
SINGLE LINE
DIAGRAM
PANEL BOARD
DETAIL

SHEET NO.
EL-03
0808