PHILIPPINE BIDDING DOCUMENTS

PROCUREMENT OF REHABILITATION OF POWER HOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT

Government of the Republic of the Philippines

BID NO. 24-067-09 ALPHA

Sixth Edition
July 2020

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender.* (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

Invitation to Bid for

REHABILITATION OF POWER HOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT
Bid No. 24-067-09 ALPHA

1. The Civil Aviation Authority of the Philippines, through the APP CY 2024 CAAP Corporate Fund (Supplemental Fund) intends to apply the sum of **TWO MILLION THREE HUNDRED ELEVEN THOUSAND FIVE HUNDRED FOURTEEN PESOS AND 42/100 (PHP 2,311,514.42)** being the Approved Budget for the Contract (ABC) to payments under the contract for **REHABILITATION OF POWER HOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT (Bid No. 24-067-09 ALPHA).** Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The Civil Aviation Authority of the Philippines now invites bids for the above Procurement Project. Completion of the Works is required **ONE HUNDRED TEN (110) CALENDAR DAYS (inclusive of 19 rainy/unworkable days)**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using non-discretionary "*pass/fail*" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

4. Interested bidders may obtain further information from the Civil Aviation Authority of the Philippines, BAC Office and inspect the Bidding Documents at the address given below from 08:00 AM to 05:00 PM from Monday to Friday.

5. A complete set of Bidding Documents may be acquired by interested bidders on **19 September 2024 until deadline of submission of bid** from given address and website/s below *and* upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **PHP 5,600.00 (inclusive of 12% VAT).** The Procuring Entity shall allow the bidder to present its proof of payment for the fees by presenting the official receipt in person.

6. Upon payment of the bid documents, bidders must provide their respective email addresses to the BAC Secretariat. All communications, including but not limited to Notices, Resolutions, and Replies, among others, will be sent to the email address provided by the bidder/s. The date when such email was sent shall be considered

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

the date of receipt of the bidder/s for purposes of complying with the requirements under RA 9184.

7. Bidders must also check the PhilGEPS website, CAAP website, and BAC Secretariat for any bid bulletins and announcements related to the bidding.

8. The Civil Aviation Authority of the Philippines will hold a Pre-Bid Conference[1] on **26 September 2024 @ 9:30 AM** through videoconferencing/webcasting via Jitsi/Zoom/Google Meet, which shall be open to prospective bidders.

9. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below on or before **08 October 2024 @ 9:30 AM.** Late bids shall not be accepted.

10. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.

11. Bid opening shall be on **08 October 2024 @ 9:30 AM** at the given address below and/or Jitsi/Zoom/Google Meet. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

12. The Civil Aviation Authority of the Philippines reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

13. For further information, please refer to:
    ENGR. LEANDRO R. VARQUEZ
    Head, BAC Secretariat
    3rd Floor Supply, Procurement Building
    Civil Aviation Authority of the Philippines
    MIA Road corner Ninoy Aquino Avenue
    1300 Pasay City, Metro Manila
    Telephone number – (02) 8246-4988 loc. 2236
    Email: bac@caap.gov.ph
14. You may visit the following websites:
    For downloading of Bidding Documents: **www.caap.gov.ph**

_____

CAPTAIN EDGARDO G. DIAZ
Chairperson, Bids and Awards Committee – Alpha

[1] May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a pre-bid conference.

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, Civil Aviation Authority of the Philippines invites Bids for the **REHABILITATION OF POWER HOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT** with Project Identification Number: **Bid No. 24-067-09 ALPHA**.

The Procurement Project (referred to herein as "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for APP CY 2024 CAAP CORPORATE FUND in the amount of **TWO MILLION THREE HUNDRED ELEVEN THOUSAND FIVE HUNDRED FOURTEEN PESOS AND 42/100 (PHP 2,311,514.42).**

2.2. The source of funding is GOCC and GFIs, the Corporate Operating Budget.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive,

coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

7.1. The Procuring Entity has prescribed that subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing/webcasting as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail

indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

10.3. A valid special PCAB License in case of Joint Ventures, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.

10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.

10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. Payment of the contract price shall be made in Philippine Pesos.

15. Bid Security

15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

15.2. The Bid and bid security shall be valid until *[indicate date].* Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB.**

18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 15 shall be submitted for each contract (lot) separately.

19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

<table>
<tr><th>ITB Clause</th><th></th></tr>
<tr><td>5.2</td><td>A. For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be:

<table>
<tr><th>Category</th><th>ABC</th></tr>
<tr><td>1. Building Construction/ Improvement/ Rehabilitation/ Repair</td><td>Php 2,311,514.42</td></tr>
</table>

B. The statement of SLCC shall be accompanied by a Certificate of Final Acceptance issued by the owner, or a final rating of at least "Satisfactory in the Constructors Performance Evaluation System (CPES). In the case of contracts with the private sector, an equivalent document shall be submitted. (Section 23.4.2.5 of the Revised IRR of Republic Act No. 9184).</td></tr>
<tr><td>7.1</td><td>Subcontracting is not allowed.</td></tr>
<tr><td>10.3</td><td>Valid PCAB License or a valid special PCAB License in case of Joint Ventures, and registration for the type and cost of the contract for this Project.

Small B - License Category C&D (Building and Industrial Plant)

No other contractor license or permit is required.</td></tr>
<tr><td>10.4</td><td>The key personnel must meet the required minimum years of experience set below:
<table>
<tr><th>Key Personnel</th><th>General Experience</th><th>Relevant Experience</th></tr>
<tr><td>Project (Civil) Engineer
Electrical Engineer
Construction Foreman
Master Electrician
Construction Safety and Health Officer</td><td>Five (5) years in General Engineering</td><td>Three (3) years in Building Construction/ Improvement/ Rehabilitation/ Repair</td></tr>
</table>

Use Annex "B" Forms 3, 4a, 4b & 4c</td></tr>
<tr><td>10.5</td><td>The minimum major equipment requirements are the following:

<table>
<tr><th>Equipment</th><th>Capacity</th><th>Number of Units</th></tr>
<tr><td>10 MT Mobile Crane</td><td>10 MT</td><td>One (1)</td></tr>
<tr><td>Jack hammer</td><td></td><td>One (1)</td></tr>
<tr><td>One-bagger Concrete Mixer</td><td></td><td>One (1)</td></tr>
<tr><td>Concrete Vibrator</td><td></td><td>One (1)</td></tr>
<tr><td>Oxy-Acetylene Cutting Torch/</td><td></td><td>One (1)</td></tr>
</table></td></tr>
</table>

	Welding Outfit Welding Machine, 10-200A One (1) Manual Bar Cutter One (1) **Use Annex "B" Form 5**
12	No further instructions.
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than two percent (2%) of ABC, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than five percent (5%) of ABC if bid security is in Surety Bond.
19.2	Partial bid is not allowed. The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
20	The Bidder with the Lowest Calculated Bid (LCB) that complies with and is responsive to all the requirements and conditions shall submit its a) Updated Valid PhilGEPS Certificate of Registration; b) Latest income and business tax returns filed through the Electronic Filing and Payment System (EFPS); c) Key personnel licenses; d) Updated status of all ongoing contracts, including contracts awarded but not yet started, issued by the government agency or private concerned; Failure to submit any of the post-qualification requirements on time, or a finding against the veracity thereof, shall disqualify the bidder for award. Provided, that in the event that a finding against the veracity of any of the documents submitted is made, it shall cause the forfeiture of the Bid Security in accordance with Section 69 of the IRR of RA 9184.
21	The following relevant project documents are required to be submitted by the successful bidder who submitted the LCRB as part of the Contract Agreement during its signing: a) Construction schedule b) Bar Chart & S-curve c) PERT/CPM Network Diagram d) Manpower schedule

	e) Construction methods f) Equipment utilization schedule Construction safety & health programs approved by the Department of Labor & Employment **(REHABILITATION OF POWER HOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT.**

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

2. Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Possession of Site

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC,** which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

7. Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC.** If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule

specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

15. Operating and Maintenance Manuals

15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC.**

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	Not applicable.
3.1	The **CIVIL AVIATION AUTHORITY OF THE PHILIPPINES** shall give possession of all parts of the Site to the Contractor upon receipt of the Notice to Proceed.
5	In addition to the Performance Security, winning bidder shall submit Contractor's All Risks Insurance (CARI) prior to signing of Contract.
6	None.
7.2	Five (5) years.
10	No dayworks are applicable to the contract.
11.1	Not applicable.
11.2	Not applicable.
13	The amount of the advance payment shall not exceed 15% of the total contract price.
14	No further instructions.
15.1	The date by which operating and maintenance manuals are required is upon completion of the project The date by which "as built" drawings are required is upon completion of the project. PDF/AutoCAD File of the "as built" plans shall include as attachment to the required hard copy of the same upon completion of the project.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is percent (2.00%) of the Contract price.

Section VI. Specifications and Scopes of Work

SCOPE OF WORK

Name of Project**:** **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY, AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

Location : Basco Airport, Barangay Ihuvok II, Basco, Batanes

Duration : One Hundred Ten (110) calendar days inclusive of Nineteen (19) rainy/unworkable days

The details of work are at best enumerated below, but be noted that the Contract includes all works and services although not specifically mentioned herein, but are needed to fully complete the Project:

The project covers the supply of labor, materials, tools/equipment's, and construction related permits necessary for ***REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT*** with the following scope of works which shall be done in accordance with the approved plans, specifications and provision of contract.

SPL-1 MOBILIZATION/ DEMOBILIZATION

This work includes mobilization and demobilization of the contractor's equipment necessary for performing the work required under the contract.

a. Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and establishment of offices, and other necessary facilities for the contractor's operations at the site.

b. Demobilization shall include the disassembly of offices and other facilities on the site, as well as the removal and hauling of debris and rubbish materials.

SPL-2 TEMPORARY FACILITY

The following provisions must be delivered within seven (7) days upon receipt of the Notice to Proceed (NTP).

STAFF HOUSE

This item covers the Contractor's provision of PMO Staff House on rental basis. The Facility shall be provided with air-con including the supply of kitchen utensils, gas and stove, beds and beddings, and dining sets for the exclusive use of CAAP-PMO in supervising the project. The Contractor shall be responsible for the payment of utility bills (water and electric) for the whole duration of the project.

SPL-2 CONSTRUCTION SAFETY AND HEALTH

This item covers the supply of materials intended for CAAP-PMO staffs and resident engineer/s. The contractor shall further take all necessary precautions against damage to property of the airport or of others located at or adjacent to the site.

The Contractor shall all times comply with any accident prevention, regulations and any safety regulations of local or national authorities or that shall be prescribe by CAAP.

The Contractor shall appoint a Part-Time Safety Officer/Practitioner and First Aider to hold periodical safety meetings with the workers and with his own supervisors and foreman. The Contractor shall report in writing within twenty-four (24) hours to the PMO all the accidents involving the death of and/or injury to any person, resulting from the Contractor's operation.

1.00 CIVIL / STRUCTURAL WORKS

1.01 Site Works (including demolition works)

This work includes the supply of labor, materials, tools, and equipment needed for the site works including dismantling/demolition of existing structures, excavation, and backfill as indicated on the approved plans and specifications. This item also includes the provision of gravel bedding conforming to the required thickness and layout of 1.50mm polypropylene geotextile as indicated on the approved plans. The Contractor must provide equipment for hauling and disposal of excavated materials and site cleanup.

1.02 Concrete Works

The work includes all materials, labor and equipment/tools for the construction of all concrete works including formworks and installation of reinforced steel bars for engine bed extension, and cable trench as specified on the approved plans. Materials to be used and workmanship must be approved by the Project In-Charge assigned by CAAP. All materials, design and specifications must have the approval of the Project-in-Charge prior to purchase and installation.

Total weight of Rebars = 182.96 kgs.
Total area of Formworks = 10.55 sq.m.
Total volume of Concrete = 1.39 cu.m.

1.03 Steel Works

The work includes all materials, labor, and tools/equipment needed to complete the steel works including fabrication, installation and painting of cable trench steel components including trench angular steel bar framing, 6mm thick checkered plate cover, 2" diameter PVC pipe weep hole and other materials as indicated on the approved plans. The Contractor must secure the scaffoldings and formworks prior to the installation and must conform to the specifications. Materials to be used and workmanship must be approved by the Project In-Charge assigned by CAAP.

Total weight of Steel Works = 142.81 kgs.

1.04 Tile Works

The work includes supply of materials, labor, and equipment/tools necessary for the installation of floor tiles with a total coverage area of 16.32 sq.m. and wall tiles with total area of 7.84 sq.m. as indicated on the approved plans. The work also includes supply of materials, labor and equipment/tools to complete the waterproofing works (using water base waterproofing membrane) with a total coverage area of 10.45 sq.m. (use 4-coats) as indicated on the approved plans.

1.05 Painting Works

The work includes supply of materials and labor to complete the painting of interior walls incl. columns, exterior walls, ceiling, window and doors with a total coverage area of 509.00 sq.m. as indicated on the approved plan.

2.00 ELECTRICAL WORKS

2.01 Feeder Conduits and Fittings

The work includes all materials, labor, and equipment/tools for the installation of feeder conduits including conduit fittings, hangers, supports and other hardware and accessories to complete the installation. Routing of conduits shall be for approval of the CAAP Project In-Charge. All conduits and fittings shall be Underwriters Laboratories (UL) Listed.

2.02 Feeder Conductors

The work includes all materials, labor, and equipment/tools for the installation of 1,972 linear meters of feeder conductors including ground rod, termination accessories and other hardware to complete the installation. All conductors shall be Underwriters Laboratories (UL) Listed and shall be tested and passed the Insulation Resistance Test prior to energization. Feeder Conductors shall be color coded as follows:

Line: Red
Neutral: Black
Ground: Green

2.03 Panelboard

The work includes all materials, labor, and equipment/tools for the installation of one (1) assembly of panel board (Panel LPPH) including other hardware and standard accessories to complete the installation. All Panel Boards and Circuit Breakers should be tested and commissioned.

2.04 Emergency Power Supply

The work includes all materials, labor, and equipment/tools for the installation of 1.00 set of 100kVA Silent Type Diesel Engine Generator Set including other hardware and standard accessories to complete the installation.

The contractor shall conduct Testing, Commissioning and Adjustment (if necessary) of the Generator Set including other components and accessories. The Generator

set should be tested by operating it continuously at a minimum of 4 hours but not to exceed 8 hours.

The contractor shall conduct trainings/seminars to qualified airport maintenance operators and engineering unit personnel at Basco Airport on proper operation and preventive maintenance of the equipment.

All scopes of work for this item must be in accordance with the approved plans and specifications. Quality and types of materials must conform to specifications and must be approved by the project in-charge of the CAAP.

The contractor shall be responsible in providing personal protective equipment (PPE) for staffs and workers, and Safety Inspectors or Safety Engineers on site while construction is ongoing. Regular safety and weather reports should be accomplished.

The contractor shall be responsible for all laboratory, material testing, safety permits and survey instruments necessary in the project implementation. All expenses shall be incorporated in the contractor's overhead cost and shall not be considered as pay item.

GENERAL PROVISIONS

Provisions for staff house, service vehicles, laptops, printers, cameras, plotters, furniture and other materials, devices and equipment under Special Item or Temporary Facilities shall not include OCM & CP.

The contractor shall be responsible in providing safety perimeter fence or security fences, personal protective equipment (PPE) for staffs and workers on site while construction is ongoing. Safety reports should be prepared regularly.

The contractor shall be responsible for all laboratory, material testing, building and safety permits and survey instruments necessary in the project implementation. These expenses shall be incorporated in the contractor's overhead cost and shall not be considered as pay item.

SPECIFICATIONS

Section 105 Mobilization

105-1 Description. This item shall consist of work and operations, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-1.1 Posted notices. Prior to commencement of construction activities the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

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The Owner may include additional posted notices as required by local and State law.

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105-2 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. With first pay request, 25%.

b. When 25% or more of the original contract is earned, an additional 25%.

c. When 50% or more of the original contract is earned, an additional 40%.

d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by 90-11, the final 10%.

****

Item Mobilization may be added to project at Owner's discretion. Rather than paying Contractor 100% of mobilization on first pay request, many Sponsors have found a payment schedule to be an effective way to reimburse Contractor for mobilization and demobilization. It is not required but it is recommended that the final 10% of this bid item not be paid until the Contractor has cleaned up the project staging area. The payment schedule can be altered, e.g., on small projects may not be appropriate to have more than two (2) payments.

****

END OF SECTION 105

1. CIVIL / STRUCTURAL WORKS

1.1. EXCAVATION, FILLING AND GRADING

SCOPE OF WORK

The work under this section of the Specifications consists of furnishing all items, materials, equipment, labor, plants, appliances, methods and all operations that may be necessary, and incidentals to complete excavation, filling, back-filling and grading in accordance with the Plans, and schedule if any, and subject to the terms and conditions of the Contract.

A. EXCAVATION

The Contractor shall make all necessary excavation for foundations to establish grades indicated on drawings without extra compensation including all other excavations required and necessary for the proper prosecution of the work.

1. Cut slope for permanent excavations shall not be steeper than 1-1/2 horizontal to one vertical, and slopes for permanent fills shall not be steeper than 2 horizontal to one vertical unless a substantiating data which justify steeper slopes are submitted.

2. Deviation from the foregoing limitations for slopes shall be permitted only upon presentation of a soil investigation report acceptable to the supervising Engineer.

3. Trim the excavation to the required depth, lines and grades and other incidental excavations to level up the footing plus compacting tamping which are included in the building contract.
4. The materials to be excavated shall include any rock, earth and other materials of any nature and description encountered in obtaining the indicated lines and grades.

5. If the required safe bearing power of the soil is not obtained at the excavations shall be continued until such safe bearing power is reached.

6. Piers and walls shall be lengthened accordingly and likewise, the footings shall be revised to suit the new conditions for which the Contractor shall be paid at the unit price bid for concrete work.

7. No fill or other surcharge loads shall be placed adjacent to any building or structure unless such building or structure is capable of withstanding the addition loads caused by the fill or surcharges.

8. Footings or foundations which may be affected by the excavation shall be underpinned adequately, or otherwise, protected against settlement and/or against lateral movement.

9. Fills to be used to support the foundations shall be placed in accordance with accepted engineering practices. A soil investigation report and a report of satisfactory placement of fill, both, shall be acceptable to the supervising Architect or Engineer.

10. Additional payment for excavation will be computed per unit bid price and/or at established unit price for same as follows:

EXCAVATION, FILLING AND GRADING

a) All materials of every nature and description, which in the Owner's opinion will require the use of air operated hammers, wedging, or drilling and blasting.

b) For additional excavation to safe-bearing power soil as required in 5 based upon work required between indicated grades and authorized grades.

B. UNAUTHORIZED EXCAVATION

1. Where existing surface levels are lower than the sub-grade levels required for work, or where excess or authorized excavation takes place beyond the indicated lines and grades, the contractor shall fill the indicated line and grade at his expense under the following conditions.

2. Where the footings and foundations occur, use concrete fill of the same class as specified for footings and foundations.

3. Where slabs occur, use well compacted sand and gravel fill.

C. EXCAVATION OMITTED

1. When the nature of the soil is such that good-bearing or safe-bearing is found to exist at higher grades than the sub-grade levels indicated on the Plan, the

supervising Architect or Engineer may decide to stop the excavation work at those higher grades.

2. Should the Owner so decide, it will be ordered in writing. This will be subject to reduction in the contract price in favor of the Owner at Unit Price Bid and or at established price based upon measurements taken between authorized higher grades and grades indicated on drawings. The same is true for omitted filling due to change of grade.

3. Footing shall not be placed on fill.

D. PROTECTION, PUMPING AND MAINTENANCE

1. The Contractor shall at all times protect the excavations and trenches from damages of rain water, spring water, backing of drains, and all other water.

2. He shall provide and operate all pumps or other equipment necessary to drain and keep excavations, pits, trenches and the entire sub-grade area free of water under any circumstances and contingencies that may arise.

3. He shall build all necessary enclosures, construct and maintain temporary drainage for this purpose. He shall provide all shoring, bracing and sheathing as required for safety, or necessary to support adjoining walls, walks, soils, streets, buildings, fences, and the like and for prosecution of the work, all these to be removed when work is completed, and or required by the Owner.

E. BLASTING

F. INSPECTION

No pouring of concrete shall be done by the Contractor unless the bearing surfaces has been inspected and approved by the Owner, and the authority to proceed has been received by the contractor.

G. DRAINAGE SYSTEM AT SITE

The Contractor shall provide, construct and maintain for the duration of the work, drainage system of the site approved and or as directed by the supervising Architect or Engineer.

H. UTILITIES

1. The Contractor shall protect and maintain all conduits, drains, sewer pipes and other utility services that are to remain on the property or in the building, or in the site, where required for the proper execution of the work.

2. The Contractor shall notify all corporations, companies, individuals, or the other authorities concerned with the above conduits, drains, water and sewer pipes, running to the property of the site, and protect relocate, remove, cap or discontinue all pipes, sewer, and other utility services, which interfere with the excavation in accordance with instruction and requirements of the above notified parties.

I. FILLING AND GRADING

1. All excavations shall be back-filled immediately as work permits after concrete walls and piers have attained full design strength and or as the Owner's Engineer directs.

2. After the forms have been removed from the footings, walls and piers, the materials taken from excavations (free from waste and objectionable matter) shall be used for back-filling around them.

3. These filling materials shall be made in layers not to exceed 15 centimeters and thoroughly tamped before the next fill is placed. Excess excavated materials shall be placed and spread on the immediate premises as directed by the supervising Engineer, provided, however, that the Contractor shall not be required to remove such materials more than 50 meters from the building line.

4. Open tile drains around the building if any, shall be covered with crushed rock or gravel for a depth of 30 cm. and the same shall be graded from course to fine.

5. Open tile drains under floor slab (where so indicated on drawings) shall be covered with broken stones or gravel up to the bottom of the slab.

6. In spaces where slabs rest on ground, or on earth-fill as specified in paragraph 2, shall be labeled and accurately graded with 10 cm. thick of gravel and sand, and tamped thoroughly before concrete pouring is done.

7. All exterior grades shall be formed in accordance with the drawings and specifications, taking into account the requirements for landscaping work, if any, and giving due allowances for the top soil depth.

8. The Contractor shall grade the area included within clearing lines as defined "Clearing" under the General Conditions, and all such grading work should be included in the building Contract without extra or additional cost. Banks of graded areas shall have a slope of 3.8 cm. horizontal to one vertical distance.

9. Extra grading (cut or fill) beyond the ___meters and or due to change of grade shall be paid at the unit price bid for the same.

J. TOP SOIL STRIPPING AND SPREADING

For use when topsoil is salvaged for landscaping work.

1. Topsoil stripping operations shall start from the areas affected by the construction to limits indicated by the Owner and or as specified.

2. Topsoil shall be stripped to varying depths as approved by the Architect, but not beyond topsoil strata.

3. Topsoil shall be stripped by approved methods and stored where it will not interfere with the work.
4. This topsoil shall be evenly spread to the true contours and raked to even, smooth surfaces ready for seeding and planting.

K. TEMPORARY EASEMENT

The Contractor shall obtain the consent of adjoining property owners regarding the need for temporary easements or any other manner of physical encroachment at his own expense.

L. PAVEMENT

The Contractor shall restore, without extra cost to the Government, any street pavements, concrete sidewalks and curb, and similar public structures that may be opened, removed or demolished in the performance of work under this Section in the manner prescribed by authorities having jurisdiction.

M. PROTECTION OF TREES

The Contractor shall protect trees indicated to remain in place by boxing them, by using guys and the like, and or as indicated by the supervising Architect or Engineer.

N. PROTECTION OF ADJOINING PROPERTY

The Contractor shall protect the excavation to be made below existing grade line so that the soil of adjoining property will not cave-in or settle and shall defray the cost of underpinning or extending the foundation of buildings on adjoining properties.

1. Before starting the excavation, the Contractor shall notify in writing the owners of the adjoining buildings not less than 10 days before such excavation is to be made and that the adjoining building will be protected by him.

2. The Owners of the adjoining properties shall be given access to the excavation for the purpose of verifying if their properties are sufficiently protected by the contractor making the excavation.

3. In case there is a party wall along a lot-line of the premises where an excavation is being made, the contractor at his expense preserve such party wall in as safe a condition as it was before the excavation was commenced and shall, when necessary, underpin and support the same by adequate methods.

4. Guards or fences shall be provided along open sides of excavation except that, in the discretion of the Engineer such guards or fence may be omitted from any side or sides other than those adjacent to streets or public passageways.

1.2. CONCRETE WORKS

A. PLAIN AND REINFORCED CONCRETE

SCOPE OF WORK

This Item shall consist furnishing, placing and furnishing concrete in buildings and related structures, flood control and drainage, and water supply structures in accordance with this Specifications and conforming to the lines, grades, and dimensions shown on the Plans.

GENERAL REQUIREMENTS

1. **Acronyms**
   The following acronyms for applicable standards/ publications are referred to this Specification:

   ASTM – American Society for Testing Materials
   ACI – American Concrete Institute
   POI – Pre-Stressed Concrete Institute
   AWS – American Welding Society
   AISC – American Institute of Steel Construction

2. **Standard Specifications and Codes**
   The work covered by this Section unless otherwise specified or detailed, shall be governed by the Building Code requirements for Reinforced Concrete (ACI 318), Standard Code for Arc and Gas Welding Society. The latest edition of all standards Specifications or Codes will be used.

3. **Coordination**
   The concrete work shall be coordinated with the work of other trades allow reasonable time to set sleeves, inserts and other accessories which must be in position before concrete bases and pads of mechanical equipment shall be placed to comply with approved shop drawings for the equipment.

4. **Workmanship**
   The Contractor shall be responsible for any additional cost which may result from concrete surfaces which are not finished to the required profile or elevation.

5. **Samples**
   The Contractor shall submit samples of cement and aggregates proposed for use in the concrete work for approval, enumerating names, sources and description of materials.

MATERIAL REQUIREMENTS

1. **Portland Cement**

a) Portland cement shall conform to the requirements of ASTM C-150 Type for normal Portland cement; Type-III for Highly Early Strength Portland Cement.

b) Cement shall be any standard commercial brand in 40 kilograms per bag such as: Filipinas, Union, Republic Apo or other locally available equivalent.

2. **Fine Aggregates**

Sand shall be clean, hard coarse river sand or crushed sand free from injurious amount of clay loam and vegetable matter and shall conform to ASTM C-33 or C330.

3. **Coarse Aggregate**

Gravel shall be river run gravel or broken stones. The maximum size shall be 1/5 of the nearest dimension between sides of forms of the concrete, or ¾ of the minimum clear spacing between reinforcing bars, or between re-bars and forms whichever is smaller.

4. **Mixing Water**

Water used in mixing concrete shall be clean and free from injurious amounts of oils, acids, alkali, organic materials or other deleterious substances.

5. **Admixture**

All air-entertaining admixtures if used shall conform to ASTM C-260. Water reducing admixtures, retarding admixtures, and water reducing and accelerating admixtures, if used, shall conform to the requirements of ASTM C-494.

STORAGE OF MATERIALS

1. Cement and Aggregates shall be stored in such a manner as to prevent their deterioration or the intrusion of foreign matter

2. Cement shall be stored, immediately upon arrival on the site of the work, in substantial waterproof bodegas, with a floor raised from the ground sufficiently high to be free from dampness. Aggregates shall be stored in such manner as to avoid the inclusion of foreign matter.

PLAIN CONCRETE

General Requirements

1. Plain Concrete, other than fill, shall have a minimum ultimate compressive strength at 28 days of 140 kilograms per square centimeter or 2,000 pounds per square inch and material proportioning, and placing shall conform to the requirement of this section.

2. Concrete made with lightweight aggregate may be used with strengths less than 140 kg. per square centimeter if it has been shown by tests or experience have sufficient strength and durability.

3. The thickness of plain concrete walls may be 5 centimeters (2 inches) less than the required by 6.17 for plain masonry wall but in no case less than 18 centimeters and the ratio of unsupported height or length whichever is the lesser to thickness shall not be greater than 22.

4. Concrete shall consist of Portland Cement, fine aggregates, water, and where specified, Admixtures, proportioned mixed place, cured and finished as hereinafter specified.

5. The following special types of concrete shall be used where indicated on the detailed drawings or as specified.

    a) Lean Concrete
    b) Concrete with integral waterproofing
    c) Highly early strength concrete may be used subject to the approval of the supervising Architect or Engineer.

6. All provisions of the Specifications shall apply the seven (7) day compressive strength equal to the 28 day strength required for normal concrete. Admixture used in concrete shall be produced by a reputable manufacturer and used in accordance with the manufacturer's printed directions.

    a) **Plasticizing Admixture** – Concrete admixture shall be free from chlorides and shall conform to ASTM C-494-651. The admixtures shall be used in all concrete mixtures in accordance with the manufacturer's specifications.

    b) **Calcium Chloride** – shall not be used under any circumstances.

PROPORTIONING OF CONCRETE

1. The Contractor shall employ, at his own expense, an approved testing, laboratory which shall design the mix for each type of concrete required by the Specifications and drawings to obtain strength as determined at least 15% higher than required. Strength requirements shall be as noted on the drawings.

2. The adequacy of the mix design shall be verified by a test on a minimum of 6 cylinders, 3 tested at 7 days; 3 at 28 days, in accordance with ASTM C-192 and G-3 and by Slump Tests in accordance with ASTM C-143.

3. The testing laboratory shall submit 5 copies of the mix design and the test results to the Owner or his duly authorized representative for approval before any concrete is placed.

4. If any time during construction, the concrete resulting from the approved mix design proves to be unsatisfactory for the reason such as too much water, lack of sufficient plasticity to prevent segregation, honeycomb, etc. or insufficient strength, the Contractor shall immediately notify the testing laboratory and the supervising Engineer.

5. The laboratory shall modify the design, subject to approval by the supervising Architect or Engineer until a satisfactory concrete is obtained.

6. **Stone concrete** – Minimum compressive cylinder strength of concrete fc' at 28 days area as follows:

    a) Fc' 27.58 Mpa for suspended beam, slab and columns
    b) Fc' 20.68 Mpa for footings and walls.

7. The **Water Content** shall not exceed 28 liters per 40 kilograms per bag cement, and the slump test shall not exceed 10 cm. in all cases unless otherwise changed by the supervising Architect or Engineer.

8. **Lean Concrete** – Lean concrete mix to be designated to produce concrete with 28 day strength of 13.79 Mpa, slump and size shall be subjected to approval depending where it is mixed.

DETERMINING CONCRETE PROPORTIONS
CONCRETE PROPORTIONS AND CONSISTENCY

1. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the form and around reinforcement without permitting the materials to segregate or excess free from water to collect on the surface.

2. The methods of measuring concrete materials shall be such that the proportions can be accurately controlled and easily checked at any time during the work.

CONCRETE TEST

1. **Testing Laboratory**

   a) The Contractor shall employ at his own expenses, an approved Testing Laboratory which may shall make compression and Slum Tests and immediately submit 5 copies of the test reports to the supervising Architect or Engineer.

   b) Ready mixed concrete companies may use their own laboratories provided that testing is done with the supervision of the Owner or his authorized representatives.

2. **Compression Slump Test**

   Compression and Slump Tests shall be made every 50 cubic meters of concrete or fraction thereof; but not less than 1 set of tests shall be made from any one batch of concrete and all 3 tests shall be made from the same batch.

3. **Compression Tests**

   Make 3 standards 15 cm x 30 cm. cylinder and tests in accordance with ASTM C-31 and C-39. The one (1) cylinder at the age of 28 days and one (1) cylinder in reserve for 56 days test. If the 28 days test does not meet the requirements, make additional cylinder as required to check strength of concrete in the construction. These cylinders are to be cured in the field in the same manner as to the concrete in the construction is cured.

4. **Slump Test**

   For each representative quantity of concrete mentioned above, two slump tests shall be made in accordance with ASTM C-143.

5. **Test Report**

   The testing laboratory shall submit 4 copies of its test cylinder reports which are to include, as far as applicable, the following information:

   a) Location of the structure where the concrete is used, design number, concrete design strength, type and manufacturer of Portland cement.

   b) Amount of any Admixtures used, Slump Tests, date of sampling, cylinder application number, days cured in the field, and days cured in laboratory.

c) Age at the time of testing, crushing stress, type of failure, who made the cylinders, who shipped the cylinders to the laboratory and whether concrete strength meets the specifications.

6. Inspection of Batch Plant Operation

Inspection on a "Spot Check" basis required to insure the concrete delivery to the job complies with the Specifications and the design mix. The testing laboratory shall provide this service as directed by the Owner's supervising Engineer.

7. Additional Tests

If, in the opinion of the supervising Engineer, based on cylinder strengths below specifications requirements or visual defects, concrete of poor quality has been placed, additional tests shall be made as directed by the Owner at the expense of the Contractor. Test may be Compression Test on core cylinder per ASTM C-42, and or Lead Tests as cut-lined in ACI 318, Section 202, or as specified.

MIXING CONCRETE

The mixing and measuring equipment shall be approved by the supervising Architect or Engineer. Unless otherwise authorized, concrete shall be machine mixed at the site or by ready-mixed concrete.

1. Site Mixed Concrete

Provide a batch mixer type equipped with accurate timing and measuring devices and operate in accordance with the manufacturer's recommendations:

2. Mixing Time

a) For each batch, after all solid materials are placed inside the mixing drum, and water is introduced before ¼ of the mixing time has elapsed, shall not be less than 1 minute for mixers having a capacity of one (1) cubic meter or a fraction thereof for additional concrete.

b) The concrete mixer shall revolve at no less than 14 or more than 20 revolutions per revolutions per minute. Speed greater than 20 revolutions per minute and less than 14 revolutionary per minute are usually found to be unsatisfactory.

READY MIXED CONCRETE

1. All ready mixed concrete shall conform to the requirements of ASTM C-94, placed in forms within one (1) hour after adding water or not more than ½ hours if a retarder is used. It shall be kept constantly agitated during the transit period.

2. Pouring of concrete should not be started until after the forms and reinforcement for the whole unit are properly laid and installed, cleaned, inspected and approved.

3. Construction joints shall be rough-in and clean thoroughly before any pouring starts. Wet and slush surface with cement mortar.

HANDLING AND PLACING CONCRETE

1. Immediately after the concrete is mixed, it shall be conveyed by the approved push cart or buggies to designated locations, and carefully deposited in such manner as to prevent the separation of ingredient or displacement of the reinforcements.

2. Keep temporary runways built in such a manner that runway supports will not bear upon reinforcement of fresh concrete. Conveying or hauling of concrete by the use of long inclined chutes or pipes shall not be permitted.

3. Dumping concrete into carts or buggies with a free fall of more than one (1) meter will not be permitted. Hardened splashes or accumulation of concrete on forms or reinforcements shall be removed before the work continues.

4. When placing more than 1.50 meters high, it shall be deposited through sheet metal or other approved conveyors.

5. As for practicability, the conveyers shall be kept full of concrete during the placing and their lower ends shall be kept buried in the newly placed concrete.

6. After the initial set of the concrete, the forms shall be jarred, and no strain' shall be placed on the ends of the projecting reinforcing bars. Foundation shall be free from water during concreting and construction joints shall be determined by the supervising Architect or Engineer.

7. Concrete in columns shall be placed in one continuous pouring operation and allowed to set 12 hours before caps are placed. Likewise, concrete in beams and slabs in superstructures shall be poured in one operation.

RE-TAMPERING

The contractor shall mix only such quantities that are required for immediate use. Mixture which has developed initial setting shall not be used. Concrete which has partially hardened shall not be re-tampered for use.

CURING AND PROTECTION

1. All concrete work shall be protected from drying out after removal of forms by covering with waterproof paper, polyethylene sheeting burlap, with a coating of approved membrane curing compound having a moisture retention equal 90% based on ATM C-309 and C-156, applied in accordance with the manufacturer's instruction for use

2. Membrane curing compound shall not be used where the floor hardener, membrane waterproofing, damp-proofing, resilient floor tile or other floor or wall covering set in adhesive, concrete-fill or setting beds, paint, plaster or other applied finishing or surfaces treatment are to be subsequently applied.

3. Wet burlap as often as required to keep concrete wet throughout each day for as period of at least 7 days where normal Portland cement is used and 3 days where high early strength cement is used.

METAL REINFORCEMENT

1. Steel Bars

a) Reinforcing bars shall conform to ASTM Specifications A-615. All mild steel for columns, shear wall, footings and footing beams shall be high grade deformed 413.7 Mpa.

b) For 10 mm and smaller bars use intermediate grade deformed bars. Fy = 275.8 Mpa

c) If reinforcing bars are to be welded, these specifications shall be supplemented by requirements assuring satisfactory weld ability.

d) Bar and rod mats for concrete reinforcement shall conform to ASTM Specifications A-184 and Wires for concrete reinforcement shall conform to ASTM A-82 Specifications.

e) Welded wire fabric for concrete reinforcement shall conform to ASTM A-185 except that the weld shear strength requirements shall be extended to include a wire size differential up to and including six gauges.

f) Wire and strand shall conform to ASTM A-416. Structural steel shall conform to ASTM A-26 and Steel pipe for composite column shall conform to ASTM Specification A-377.

2. Accessories

Provide bar supports and other accessories necessary to hold reinforcing bars in the proper positions while concrete is being placed. Bar supports which come in contact with forms for concrete exposed to view in the finished structure shall be galvanized or stainless subject to approval.

3. Mill Certificate and Test

a) The Contractor shall furnish 2 copies of the manufacturer's certificate of mill tests al reinforcing steel.

b) The Contractor shall, employ at his own expense an approved testing laboratory which shall conduct testing of all reinforcement sizes of each bulk under the supervision of the supervising Architect or Engineer.

4. Shop Drawing

a) Each reinforcing steel detail and placement drawings shall be submitted for approval. Any material fabricated before the final approval of the shop drawings will be done at the Contractor's risk, but no material shall be installed until final approval of the "Shop Drawings".

b) All shop drawings shall be in accordance with the Manual Standard Practice for Detailing Reinforced Concrete Structure ACT-315.

5. Labeling

Bars shall be properly labeled with weatherproof tags to facilitate identification.

PLACING OF REINFORECEMENT

1. All reinforcement shall be placed according to the approved drawings. The Contractor shall provide sufficient bar supports, ties, anchors and other accessories to hold all bars securely in place.

2. Unless detailed on drawings, all stirrup shall be held in place by bar spacer. Reinforcing steel shall be cleaned of oil, grease, scale, rust or other coatings which will impair bond.

3. All bars shall be bent cold

4. All welded spices shall be done by certified welders having welder's certificate and shall be submitted and approved by the supervising Architect or Engineer before any welding works shall be started.

5. The welding of bars shall conform to AWS D -12.1 Recommended Practices for Welding Reinforcing Steel.

STORAGE OF MATERIALS

Reinforcing steel bars shall be stored on supports above the ground level properly covered with roof or plastic materials for protection from direct effect of moisture and the considerable delay in use.

FORMS

General Conditions

1. Forms shall conform to the shape, lines and dimensions shown on the drawings. They shall be substantial and designed to resist the pressure and weight of the concrete.

2. Forms shall be properly tied and braced or shored so as to maintain their position and shape. Forms shall be sufficiently tight and strong to prevent leakage of mortar.

3. Where required by the Owner, Shop drawings of formwork, shall be submitted for approval before fabrication and erection of such formwork.

4. Provide temporary openings where necessary to facilitate cleaning and inspection before depositing concrete.

5. Before construction, all form materials are subject to approval. The type of form used shall be in accordance with the finish requirements as specified or as shown on the detailed drawings.

6. Forming shall start at the first floor level with new materials. Forms for exposed concrete may be reused only if the surface has not absorbed moisture and has not splintered, warped or peeled, subject to the approval of the supervising Architect or Engineer.

7. Forms shall be coated with non-staining form oil before setting reinforcement. The form oil shall not contain chemical that will impair the strength of the concrete.

8. Side forms of footings may be omitted and concrete be placed against the next excavation only when approved by the supervising Architect or Engineer.

9. All exposed corners shall be square. Extra care shall be exercised while stripping the forms. Corners shall be protected against chipping or other damages that may be caused by the working force.

10. Removal of forms or shoring is subject to approval by the supervising Architect or Engineer, and under no circumstances shall bottom form and shoring be removed until after the members have acquired sufficient strength to support their weight and the load thereon. Forms shall main in place for a minimum time as follows:

Columns, shear and bearing walls --------- 3 days
Stairs (bottom forms) ---------- 21 days
Beams and Slabs (bottom form) --------- 21 days

OTHER FORMS

Exposed exterior surfaces of building where Architectural finishing is required and as shown on detailed drawings, the following conditions shall be observed:

1. Forms shall be designed and constructed to facilitate early removal without damage to exposed surfaces of the concrete, free of offsets, and square corners true to lines and profiles as detailed.

2. Form ties will not be permitted through forms for surfaces which will be exposed. Formworks shall not be used twice unless otherwise approved by the supervising Architect or Engineer.

3. Exposed and Interior Surfaces treated plywood forms or moisture resistant plywood shall be laid vertically or horizontally in large are with joints so arranged and treated properly as required to provide smooth concrete surfaces.

FORMWORK ACCESSORIES

Form ties shall be submitted for approval. It shall be so designed as to leave no metal closer than 19 mm to the surface of the concrete or to leave a hole greater than 22mm in diameter on the face of the concrete.

FINISHING OF FORMED SURFACE

Remove forms and form tie ends then fill holes with 1:2 Portland cement mortar mixed to match the concrete. All defective areas below grade line not exposed to view shall be patched with Portland cement mortar mixed to match the concrete mixture as directed by the supervising Architect or Engineer.

1. *Exposed Exterior surfaces of the building where special finish is indicated* – Concrete shall be placed and finished as herein before specified and as required to provide eve dense surface of uniform color, free from marks, aggregate, pockets, honeycomb or other imperfections so that after treatment of the finished surfaces will not be required.

2. Any concrete which is not formed on level of alignment, or shows defective surfaces shall be considered as not conforming with the expense of the

Contractor, unless the Owner or his authorized representative grants permission to patch or otherwise correct the defective areas.

3. Permission to patch any such area shall not be a waiver of the right of the Owner to require complete removal of the defective works.

4. *Exposed Interior Finishes* – patch all defective areas and remove all fins, form joint marks, rough spots and other defects by rubbing with a suitable tools until such defects and rough areas are completely removes and surfaces free from imperfections so as to produce dense, smooth, uniform finish with desired texture and design.
5. Silicone water repellent shall be applied to all exterior exposed concrete surfaces above grade which are not to be painted.

INSERT, SLEEVE AND SIMILAR ITEMS

1. All required flashing, reglets, seal, masonry ties, anchors, wood locks, nailing strips, ground, inserts, wire hangers, sleeves, drains, guard angles, (*insert for elevator guide supports where required)*, provisions for floor hinges boxes, and concealed overhead door closer and al items specified, as furnished under this and other sections of the Specifications shall be in their final position at time concrete is placed and shall be properly located, accurately positioned and built-in to the construction and maintained securely in place.

2. Insert on hangers for ceiling construction specified under the plastering section shall be located only in bottom of concrete ribs or other concrete members crossed such ceiling construction.

3. Sleeves shall not be installed in beams, ribs, or column, except upon formal approval of the Architect or Engineer.

4. All stone-cut and V-cut lines, Sunk fillets, and the like, on concrete wall surface shall be integrated into the concrete with the corresponding removable mould on the forms before the concrete is poured and shall be finished straight and clean-cut in accordance with the size and shape as shown on full size details.

FINISHING OF SLAB

1. Finish floor and roof slabs shall be level plane surfaces unless otherwise specified on the drawings, with a tolerance of 3 mm in 3.0 meters. Surfaces shall be slope towards the drains as required.

2. Resilient flooring, Ceramic Tile or Marble, base slabs which are to receive these finishes or other finished requiring “Thin-Set” installation shall be floated and toweled with a steel trowel to provide a smooth surface as required to receive the flooring.

3. For roofing membrane waterproofing, the working processes is the same as that for Resilient Flooring except steel troweling which may be omitted.

4. Exposed concrete finish surface where no finishing applied as called for on the drawings shall be finished with a steel trowel as required to produce a hard, dense finish free from surface imperfections.

5. Dry materials should not be used on the surface to be finished. Apply hardener and sealer in accordance with the manufacturer’s printed instructions.

WATERTIGHT CONCRETE

1. All waterproofing on deck wherever called for in the plan shall be guaranteed to be absolutely water proofed and free from leaking for a period of two (2) years.

2. Should any leakage develop in these areas, they shall be made waterproof by approved waterproofing methods and materials and this shall be repeated if necessary until all leaks has been stopped.

3. Guarantee shall extend for a full two years after the last leak has stopped

4. All pipes or piping under slabs must be completed before the slabs are poured.

CONCRETE FLOORS ON FILL

Concrete floor and steps on fill shall be laid on a prepared foundation which shall be placed as follows:

1. Earth or sand fill shall be laid to a uniform grade as shown on the detailed drawings; fill shall be placed in layers not to exceed 15 centimeters thick, for each layer being thoroughly wetted and rolled or tampered.

2. Earth or sand fill shall be made as soon as the concrete of the walls and foundations has set sufficiently to permit the filing load and pressure. On top of this fill shall be placed 10 cm. layer of gravel which shall be rolled or tampered.

3. All of these sand and gravel foundations specified above shall be kept wet for at least 30 days after rolling or tamping so as to allow settlement before the floors are placed.

4. Concrete floors shall be laid in alternate strips about one (1) meter in width by 6 meters minimum length, but following pattern shown on drawings. The construction joints shall coincide with the groove in case such items are called for in the cement finish. After the concrete has set, the form shall be removed and the remaining strips, laid.

5. All concrete shall be of such consistency as to require a tamping to bring the water to the surface. Tampering shall be done mechanically.

6. Concrete floor and steps on fill or in ground shall be reinforced if indicated in the drawings. The size and spacing of the reinforcing steel shall be in accordance with the drawing of Specifications.

HANDLING AND PLACING OF CONCRETE

Concrete during and immediately after depositing, shall be thoroughly compacted. The compaction shall be done by mechanical vibration subject to the following provisions:

1. The vibration shall be internal unless special authorization of the other method is given by the supervising Architect or Engineer or as provided herein.

2. Vibrators shall be of a type and design approved by the supervising Engineer. They shall be capable of transmitting vibration to the concrete at frequencies of not less than 4,500 impulses per minute.

3. The intensity of vibration shall be as such as to visibly affect a mass of concrete of 25 mm, slope over a radius of at least 50 centimeters.

4. The Contractor shall provide a sufficient number of vibrators to properly compact each batch immediately after it is placed in the forms.

5. Vibrations shall be applied at the point of deposit and in the area of freshly deposited concrete. The vibrator shall be inserted into and withdrawn from the concrete slowly and gradually.

6. The vibration shall be sufficient duration and intensity to compact the concrete thoroughly but shall not be continued so as to cause segregation. Vibration shall not be continued at any one point to the extent that localized areas of grout are formed.

7. Vibrators shall be thoroughly manipulated so as to work the concrete around the reinforcement and embedded fixtures and into the corners and angles of the forms.

8. Application of vibrators shall be at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly affected.

9. Vibration shall not be applied directly or through the reinforcement sections of layers of concrete which have hardened to a degree that the concrete ceases to be plastic under vibration.

10. It shall not be used to make concrete flow in the form over distances so great as to cause segregation and vibration shall not be used to transport concrete.

GRADATION OF AGGREGATES

1. Fine and Coarse aggregates used in concrete, shall be tested in accordance with the requirements of the *"Standard Specifications for Concrete Aggregates"* ASTM 033-67m with a minimum frequency of one (1) set of 6 and one (1) set of 7 test per 1,000 cubic meter source, as follows:

2. At least one sample of fine and coarse aggregates used in concrete shall be tested in accordance with the requirements of the *"Standard Specifications for Concrete Aggregates"* ASTM 033-67 grading as follows:

Coarse Aggregates

Specific ..... Grading
Gravity ..... Soundness
Absorption ..... Abrasion
Material finer than No. 200 sieve

Fine Aggregates

Grading .....Absorption
Soundness.....Organic Impurities
Material Finer than No. 200 sieve
Mortar strength, 7 days
Specific Gravity

Coarse Aggregates (percent passing)

38 mm sieve 100%
25 mm sieve 95-100
13 mm sieve 25-50
No. 4 sieve 0-10
No. 8 sieve 0-5

Fine Aggregates (percent passing)

9 mm sieve 100%
No. 1 sieve 90-100
No. 8 sieve 80-95
No. 16 sieve 50-85
No. 30 sieve 30-70
No. 50 sieve 10-45
No. 100 sieve 0-10

3. Aggregates failing to meet these specifications, but which have been shown by approved laboratory tests to produce concrete of the required quality may be used where authorized by the Architect or Engineer.

4. Aggregates shall be quarried or washed in fresh water and shall contain no more than one twentieth 1/20 of (1%) percent salt by weight.

STORAGE OF MATERIALS

1. **Portland Cement**

a) Cement delivered in bags shall be stored immediately upon receipt at the work site in a weather proof structure which shall be air tight as practicable with suitable wooden floors which shall be elevated above the ground at a distance sufficient enough to prevent the absorption of moisture.

b) Bags shall have guaranteed constant cement content and shall be provided with proper labels showing the number of consignment and the date of site delivery.

c) The bag shall be stacked close together to reduce circulation of air but should not be stacked against outside walls but in such a way that they will be easily accessible for inspection and testing and shall be used in the order of their delivery.

d) Cement that has been in storage longer than six months will be tested by standard mortar tested or other tests as deemed necessary by the Owner to determine its suitability and such cement shall not be used without the express approval of the Owner.

e) Bags shall not be stored to a height greater than two (2) meters. All cement must be free from lumps or evident for deterioration.

f) Cement delivered in bulk shall be stored in properly designated elevated airtight and waterproofed silos or bins, provided at the Contractor's expense. The silos shall be adequate in size to ensure continuity of work at all times.

g) The site shall be kept perfectly dry. Bag cement shall be transported closed and effectively protected from weather by adequate coverings. Bulk cement shall be transported in closed container.

2. **Aggregates**

a) All aggregates shall be stored in bunkers provided with proper floors or tightly laid wood planes sheet metals, or other hard and clean surface. Fine and coarse aggregates of different sizes shall be stored in separate bunkers or piles in such a manner as to prevent aggregation, inclusion and contamination by dirt and other injurious foreign materials.

b) Stockpiles of coarse aggregate shall be built in horizontal layers not exceeding 1.20 meters in depth to minimize segregation. Should the coarse aggregate become

segregated, it should be re-mixed to conform to the grading requirements given herein before.

3. **Reinforcing Steel Bars**

   Reinforcing steel bars shall be transported and stored at the site in such a way as to prevent damage or deterioration of the steel by rust or coating with grease, oil, dirt and other objectionable materials. Storage shall be in separate piles or racks so as to avoid confusion or loose of identification after bundle are broken.

REBAR SPACING AND COVER

1. Reinforcing Bars

   Reinforcing bars shall be fixed one to the other by means of adequate steel wire ties to form rigid reinforcement cages or nets. The reinforcement shall be fixed in the form by approved concrete distance blocks, space bars, links and stirrups, and all to be provided at the Contractor's expense. Reinforcing bars shall be spaced according to the approved working drawings and the distance between bars shall not be less than those recommended in ACI-318.

2. Concrete Cover

   The concrete to the gutter reinforcing bars shall be those recommended in ACI 318, unless otherwise specifically indicated on the drawings.

3. Anchorage Length

   Plain bars shall be provided with end hook unless otherwise specified. The lengths of the anchorage of reinforcing bars shall be at least those recommended in ACI 318

4. Splices

   Splices in bars shall be avoided as far as possible and shall be staggered in any one structural member. They shall conform to the recommendations in ACI 318. In no case shall splices be made at critical points of maximum stress.

PATCHING

1. Immediately after the forms have been removed and work has been examined by the Owner, and his permission given, all loose materials shall be removed.

2. All holes, stone pockets and other surfaces which were in contact with forms treated with cement retarding materials shall be removed with wire brush or other approved method until a rough bonding surface of exposed aggregate is obtained.

3. Any surface considered by the supervising Engineer to be insufficiently roughened shall be further roughened by an approved mechanical means. Surfaces shall be thoroughly washed down with water.

4. Honey combed and other defective areas must be chipped out to solid concrete, the edge cut as straight as possible and at right angles to the surface of slightly undercut to provide a key at the edge of the patch.

5. Shallow patches may be filled with mortar similar to that used in the concrete. This should be placed in layers not more than 12 mm thick and each layer given a scratch finish to improve bond with the succeeding layer.

CONSTRUCTION JOINTS

1. Once started, concreting shall be continued without interruption and shall only be stopped at properly indicated and prepared construction joints.

2. The position of construction joints shall be decided in advance so that the amount of concrete required to be placed at any one time does not exceed the capacity of the mixing plant.

3. In all cases where the positions of construction joints have not been indicated on the drawings, they must be approved by the Architect or Engineer.

4. Except where inclined joints are specified, all joints shall be formed to vertical or horizontal planes. Vertical joints shall be formed against a properly constructed stop-board.

5. As a general rule, joints in columns shall be made as near as possible to a beam haunching and joint in beams and slabs shall be made at positions shown on the drawings.

6. Construction joints shall be wire-brushed while the concrete is still green, roughened or hacked to expose the aggregate across the whole area of the joint.

7. Before fresh concrete is placed, the roughened surface shall be swept clean of all loose materials, thoroughly wetted and covered with a 12 mm thick layer of mortar

composed of cement and sand in the same ratio as the cement and sand in the concrete mix.

8. Special care shall be taken to ensure that the first layer of fresh concrete is thoroughly rammed against the existing layer.

9. The cost of all measures necessary to form construction joints, whether shown on the Drawings or not, shall be deemed to be included in the Contractor's rates for concrete.

B. CONCRETE MASONRY

GENERAL CONDITIONS

The concrete masonry Contractor shall examine all drawings, specifications and all conditions that has relations and may affect his work and performance in the execution the Contract.

Where any deviation on the Plans and Specifications is to be made, the Owner shall be notified and his written approval shall be obtained before proceeding with the work.

SCOPE OF WORK

The work covered by this Item shall include the following:

1. Furnishing of all necessary materials, tools, equipment, labor, and appliances necessary to complete the execution of the concrete masonry work as shown on the drawings and herein specified.

2. All preparations for masonry work necessary to receive and adjoin other work, including provisions for inserts and attachment as noted in the plans and specifications which shall be installed under the terms of work.

3. Coordination with all other trades in laying out and execution of the concrete masonry work. Giving the work his personal supervision and keeping a competent foreman on the job at all times.

4. Arranging for adequate bracing, forming and shoring required in conjunction with and in the course of constructing the concrete masonry although not provided for under other sections.

5. Furnishing of all reinforcing steel for concrete masonry work and their placement including those not provided for under other sections but necessary for proper prosecution of the work.

6. Arranging for the necessary storage space and protection for materials at the job site.

7. Providing assistance and facilities for all inspections by the Owner or his authorized representatives as required in the course of execution of the work.

8. Arranging for furnishing test specimens and samples of materials as may be required.

MATERIAL REQUIREMENTS

The following materials to be used under this section of the specifications shall conform to the concrete masonry standards as indicated.

1. Cement to conform with ASTM C-150
2. Sand or fine aggregate shall be clear, sharp and well graded, and free from injurious amount of dust, lumps, shale, alkali, surface coatings and organic matter.

3. Lime: Hydrated lime shall conform with ASTM C-207

4. Quicklime shall conform with ASTM C-5 Specifications. Quicklime shall be slaked and then screened through a 16 mesh sleeve.

5. After slaking, screening and before using, it shall be stored and protected for not less than 10 days. The resulting product shall weigh not less than 1330 kilogram per cubic meter.

6. Hollow load bearing masonry units shall be type I Class A or B unit conforming with ASTM C-90-70 and the Philippine Bureau of Standard No. 15-2, series of 1979.

7. Solid load bearing masonry units shall be class a units conforming to ASTM C-145. All load bearing masonry units shall have a minimum compressive strength of not less than 5.5 Mpa (800 psi) based on 5 individual units when tested in accordance with the methods set forth in ASTM C-140-70 or as tested by the Bureau of Research and Standard, DPWH.

8. Masonry units shall have been cured for not less than 14 days if steamed-cured, or 28 days if air-cured when placed in the structure.

CONCRETE HOLLOW BLOCKS

1. For walls and partitions shown on the detailed drawings requiring concrete hollow blocks, the Contractor either uses of concrete or ceramic hollow blocks upon approval of the Architect or Engineer.

2. The load bearing of hollow blocks shall have a minimum compressive strength of 6.89 Mpa (1000 psi) computed from the average of five (5) units based on the average gross area, and a minimum of 5.41 Mpa (800 psi) for the individual unit respectively, all based on gross area.

Visual Inspection

All units shall be sound and free from cracks or other defects that would interfere with the proper placing of the unit or impair the strength or permanence of the construction.

Sampling of Specimen

In sampling blocks for the strength, absorption and moisture content determination, ten (10) individual units shall be selected from each lot of 10,000 units or fraction thereof and 20 individual units from each lot of more than 10,000 units.

Sampling

For lots of more than 10,000 units, 10 individual units shall be selected from each 50,000 units or fraction thereof, contained in the lot. For non-bearing type of CHB, no sampling for test shall be required for less than 500 units to be used in the job.

Testing

Units shall be tested in accordance with the standard method of testing Masonry units of the American Society of Testing Materials ASTM designation C-140 and or by the Bureau of Materials and Quality Control, DPWH. No blocks shall be used unless results of tests are known and duly approved by the supervising Architect or Engineer.

Reinforcement

All units shall be laid with a mortar composed of one part Portland cement and three parts of sand. Reinforcement shall be done in accordance with the structural plans as to size, spacing and other requirements.

MORTAR AND GROUT

Cement to be used for mortar and grout shall be: Type 1, 2, 3 or type 4 Portland cement conforming to ASTM C-150

1. Plastic cement shall have less than 12% of the total volume in approved types of plastic agents and shall conform to all the requirements for Portland cement per ASTM C-150, except the limitations in insoluble residue, air entrainment, and addition subsequent to calciration.

2. Mortar shall be freshly prepared and uniformly mixed in the proportion of 1 part Portland cement ¼ part maximum line putty or hydrated lime, loose sand not less than 1-1/2 and not more than 3 times the sum of the volume of cement and lime used, and shall conform to ASTM C-270.

3. Grout for pouring shall be of fluid consistency and mixed in the proportion by volume: 1 part Portland cement, 2-1/2 part minimum to 3 parts maximum damp loose sand where the grout space is less than 7.5 cm in its least dimension.

4. Grout for pouring shall be fluid consistency and mixed in the ratio by volumes; 1 part Portland cement, 2 parts minimum to 3 parts maximum damp loose sand, 2 parts coarse aggregate where the grout space is not more than 7.5 cm. in its least dimension.

5. Grout for pumping shall be fluid consistency and shall have not less than 7 bags of cement in each cubic meter of grout. Not mix design shall be approved by the supervising Engineer.

6. Fluid consistency shall mean; as fluid as possible for pouring without segregation of the constituent parts.

7. Aggregate for mortar shall conform to ASTM C-144.

8. Aggregate for grout shall conform to ASTM C-404

ADMIXTURE

1. The used of admixtures shall not be permitted in mortar or grout unless substantiating data is submitted to and approved by the supervising Architect or Engineer.

2. The use of Admixtures shall not be permitted in mortar without reducing lime content

3. Insert coloring pigments may be added but not to exceed 6% by weight of the cement.

4. The use of uncontrolled fire clay, dirt and other deleterious materials is prohibited.

5. Water to be used shall be fresh, clean and free from deleterious quantities of acids alkali and organic materials.

REINFORCING STEEL

1. The minimum requirements for deformed steel bars shall conform to ASTM A-305.

2. Wire reinforcement shall also conform with ASTM A-82.

3. Reinforcement shall be clean and free from loose, rust, scales and any coatings that will reduce bond.

CONSTRUCTION

1. Workmanship

a) Masonry work shall not be started when the horizontal and vertical alignment of the foundation has a maximum total error of 25 mm OR 2.5 centimeters.

b) All masonry work shall be laid true to line, level, plumb and neat in accordance with the plans and to the satisfaction of the Owner.

c) Units shall be cut accurately to fit all plumbing ducts, openings electrical works, etc. and all holes shall be neatly patched.

d) Extra care shall be taken to prevent visible grout mortar stain.

e) No construction supports shall be attached to the wall except where specifically permitted by the supervising Architect or Engineer.

2. Masonry Unit

a) Masonry unit shall be sound, dry, clean and free from cracks when placed in the structure.

b) All masonry units shall be stored on the job and kept off the ground and protected from the elements of weather.

c) Wetting the units shall not be permitted except when hot dry weather exists causing the units to be warm to the touch, and then the surface only may be wetted with a light fog spray.

d) Proper masonry units shall be used to provide for all window, doors, bond beams, lintels, plasters, etc., with a minimum of unit cutting.

e) Where a masonry unit cutting is necessary, all cuts shall be neat and true line.

f) Mixing of Mortar and Grout Mortar shall be mixed by placing ½ of the water and sand in the operating mixer, then add the cement, lime and the remainder of the sand and water.

g) Mortar should be re-tampered with water as required to maintain high plasticity. Re-tampering on mortar boards shall be done only by adding water within a basin formed with mortar and the mortar re-worked into the water.

h) Any mortar which is unused after 1 – ½ hours from the initial mixing time shall not be used.

i) After all ingredients are in the batch mixer, they shall be mechanically mixed for not less than 3 minutes. Hand mixing shall not be employed unless specifically approved.

3. Bonding

Concrete masonry units shall be laid with the thicker edge of the core up to provide a wider mortar bed.

a) Both face core and ends of all blocks should receive a full bed of mortar.

b) Cross web should be mortared.

c) For bonding masonry to the foundation, the top surface of the concrete foundation shall be clean with laitance removed and aggregate exposed before masonry construction can be started.

d) Where no bond pattern is shown, the wall shall be laid up in straight, uniform coarse with regular running bond.

e) Intersecting masonry walls and partitions shall be bounded by the use of steel ties at 60 centimeter on.

4. Reinforcement

When the foundation dowel does not line up with a vertical core, it shall not be sloped more than one horizontal in six vertical.

a) Dowels shall be grouted into a core in vertical alignment, even though it is an adjacent cell to the vertical wall.

b) Reinforcing bars shall be straight except for bends around corners and where bends or hooks are detailed the plans.

c) Reinforcing steel shall be lapped 30 bar diameters minimum where spliced bars shall be separated by one bar diameter or wired together.

d) Vertical bars shall be held in position at the top and bottom and at intervals not exceeding 192 diameter of the reinforcement.

e) Horizontal reinforcing bars shall be laid on the webs of the units on continuous masonry courses, consisting of bond-beam or channel units, and shall be solidly grouted in place.

f) Vertical reinforcing steel shall have a minimum clearance of 6 mm from the masonry, and not less than one bar diameter between bars.

g) Wire reinforcement shall be completely embedded in mortar or grout. Joints with wire reinforcement shall be at least twice the thickness of the wire.

h) Wire reinforcement shall be lapped at least 16 cm. at slices and shall contain at least one cross wire of each piece of reinforcement in the lapped distance.

5. Grouting

Reinforcing steel shall be secured in place and inspected before grouting starts.

a) Mortar dropping should be kept out of the grout space.

b) All grout shall be puddle or vibrated in place

c) Vertical cells to be filled with grout shall have vertical alignment to maintain a continuous unobstructed core space.

d) Cells containing reinforcement shall be solidly filled with grout and pours shall be stopped 3.8 centimeters below the top of a course to form a key at pour joints.

e) Grouting of beams over openings shall be done in continuous operation.

f) The tops of unfilled cell columns under a horizontal masonry beam shall be covered with metal latch or special units used to confine the front fill to the beam section.

g) All bolts, anchors, or inserts in the wall shall be solidly grouted in place.

h) Spaces around metal door frame and other built-in items shall be filled solidly with grout of mortar.

REJECTION

In case the shipment fails to conform to the specified requirements, the Contractor may sort it, and new specimen shall be selected by the Owner or his supervising Engineer from the retained lot and tested at the expense of the Contractor. In case the second set of specimens fails to conform to the test requirements, the entire lot shall be rejected.

C. MASONRY FINISH

CONSTRUCTION REQUIREMENTS

1. Curing

The granolithic topping shall be cured at least 6 days before grinding or until such time when it has set sufficiently hard to permit machine grinding or rubbing with coarse sandstone grit without disclosing any surface aggregate.

2. Surfacing

a) After curing all granolithic topping, surfaces shall be wetted and grinded with electric grinding machine to a smooth and even surface.

b) Where it is not possible to use electric grinding machine, surface shall be hard-rubbed manually using No. 24 abrasive grit stone rubbing after which a light grouting of white Portland cement paste of creamy consistency as the matrix used in the topping.

c) Grout shall remain on the surface until the time of final grinding and cleaning.

3. Finishing

a) Allow at least 72 hours after the granolithic surface have been grouted before removing the grout coat, cleaning and fine stone grinding by electric grinding machine using no coarser than No. 80 abrasive grit.

b) Final grinding or rubbing of granolithic marble surface shall remove scratches and produce a true plane surface of uniform color and texture

without objectionable irregularities of any description as that of the approved samples.

c) *Cleaning, Waxing and Polishing.* Upon completion of final grading or rubbing of granolithic marble the Contractor shall apply two coats of natural wax penetrating type. Surface shall be allowed to dry and polished.

MEASUREMENT AND PAYMENT

1. All granolithic marble finish indicated on the Plans and described herein shall be measured in square and lineal meter or part thereof for work completed and accepted to the satisfaction of the supervising Architect or Engineer.

2. The quantified area determined in the preceding section and provided in the Bill of Quantities shall be paid for at the Unit Bid or Contract Unit Price

(A) PEA GRAVEL WASHOUT FINISH

GENERAL CONDITIONS

The Contractor shall furnish all materials, equipment, labor, and tools required in undertaking the proper application of pea gravel washout finish as shown on the Plans and in accordance with this Specifications.

A-1 MATERIAL REQUIREMENTS

a) **Pea-Gravel** – pie-gravel specie shall be of well graded sizes consisting of 4 mm to 8 mm round variation wash river gravel.

b) **Cement** – Portland cement shall conform to the Specification requirements of Hydraulic Cement. Use only one brand of cement throughout the pea-gravel washout finish mix.

A-2 CONSTRUCTION REQUIREMENTS

a) All pea-gravel washout finish shall be done by men experienced and qualified to do this particular type of trade.

b) The Contractor shall submit at least two (2) samples to the supervising Architect or Engineer for approval measuring 30 cm. x 30 cm. showing its color, texture and design patterns.

1. **Surface Preparation**

a) Walks, ramps, driveways and elsewhere indicated on the Plans as pea-gravel washout finish shall be properly sloped and rendered under bed.

b) The under-bed mixture shall be spread to bring mortar under-bed to a level of 16 mm below the finish floor line.

c) For concrete masonry walls, columns, etc., the surface to be applied shall be first rendered a scratch coat and made true to plane, leveled plumbed and squared then allowed to cure for seven (7) days

2. **Mixture and Proportion**

a) Pea gravel washout mix shall consist of one part Portland cement and two parts pea-gravel measured by volume or a proportion equivalent to 1:2.

b) Mixtures shall be in approved containers to ensure that the specified materials are controlled and accurately measured. Mixture measured by shovel or shovel counts will not be permitted.

c) Unless specified otherwise, pea-gravel washout mix shall be in the proportion by volume in approved mixing machines or mortar boxes.

d) The aggregates introduced and mixed in such a manner that the materials will be uniformly distributed throughout the mass.

e) A sufficient amount of water shall be added gradually and the mass further mixed until a mortar plasticity necessary for the purpose intended is obtained.

f) Mortar boxes, pans, etc., where mixtures are mixed shall be kept clean and free from debris or dried mortar.

3. **Application**

a) Before work is started, the slope for drainage should be properly done and provided in the prepared under-bed.

b) Concrete setting bed must be sufficiently rough and all loose particles or anything which will diminish bond shall be thoroughly cleaned off.

c) The concrete under-bed must be kept wet for at least four (4) hours before the pea-gravel mix is applied.

d) Pea-gravel mix shall be applied with pressure to obtain solid adhesion to the under-bed and setting bed.

e) The finish surface shall be firmly, evenly, and monolithically applied.

f) When the surface applied with pea-gravel mix has sufficiently set, the cement paste shall be removed by use of sponge or water spraying equipment used in this specially trade in order to expose the pea-gravel quarter face but still intact.

4. Curing, Cleaning and Finishing

As soon as possible as the pea-gravel are exposed to desire appearance the surface shall be covered with damp burlap other approved covers. At the proper time when surface are semi-dry and stable allowing the applied surface to cure.

5. Protection

a) For proper curing, keep the pea-gravel washed finish moistened for a period of at least seven (7) days by thoroughly wetting the surface three (3) times a day and protecting it from the strong rays of the sun with burlap or layer of sand.

b) Upon completion of the work and the surface has completely seasoned, wash with clean water and brush thoroughly to produce a clean and sparkling appearance and protected until work has been accepted.

A-3 METHOD OF MEASUREMENT

All works done under this Item shall be measured in square meter or linear meter or part thereof for work completed and accepted to the satisfaction of the supervising Architect.

A-4 BASIS OF PAYMENT

The quantity determined in the Method of Measurement shall be paid for at the unit price bid or contract unit price as stated in the Bill of Quantities, which price constitute full compensation including labor and materials, tools and incidentals to complete this item.

(B) BUSH HAMMERED FINISH

GENERAL CONDITIONS

1. The Contractor shall furnish all materials, tools, plant, equipment and labor and other facilities and undertaking the proper application of Bush Hammered finish complete required as shown on the Plans and in accordance with this Specifications.

2. The Contractor shall submit for approval samples of each applied finish 30 cm. x 30 cm. of different shades to the Architect. Approved samples shall be kept for future reference.

B-1 MATERIAL REQUIREMENTS

1. **Cement**

   Cement shall be ordinary gray Portland cement conforming to the specification requirement for Hydraulic cement. One (1) brand of Portland cement shall be used throughout the plaster mortar mix.

2. **Adobe Aggregate**

   Adobe aggregate shall be crushed and pulverized to an approved graded size improving its mixing ability as coarse aggregate.

B-2 CONSTRUCTION REQUIREMENTS

1. **Surface Preparation**

   Wall surfaces to be rendered with bush hammered finish shall be scratching coated with plaster cement mortar and be made true to plane plumbed and squared. The scratch coat must be properly cured within seven days.

2. **Adobe Mortar Mixture**

   Adobe plaster shall be a mixture of Portland cement, crushed and pulverized graded adobe stones. It shall be uniformly mixed in the proportion by volume of one part Portland cement and two parts adobe aggregates or 1:2 proportions.

3. Application

a) Before any application work is commended, all wood moulds for horizontal and vertical groove joints shall be first established and set. The scratch coast has to be seasoned for 7 days

b) Surfaces to be applied with adobe plaster mortar shall be thoroughly moistened with fog spray.

c) Adobe plaster mortar shall be floated to a true and even surface. It may also be floated / troweled to a hard fluted surface with series of grooves also known as corduroy finish.

d) As soon as the plastered surface is hard enough to react hammering, the surface by hammering with an ax or hatchet leaving or exposing the natural appearance of the aggregate composition of mortar mixture.

4. Workmanship

a) Bush hammered finish shall be level, plumbed squared and true to a tolerance of 3 mm in 3.0 meters without caves, cracks, blisters, pits, crazing, discolorations, projection or other imperfections.

b) Plastering work shall be formed carefully around angles, contours and cants. Special care shall be taken to prevent sagging and consequent dropping of applications.

c) There shall be no junction marks in the finish where one day work adjoins another.

5. Curing and Protection

Upon completion of the work all surfaces shall be cleaned with steel brush and water to remove loose particles leaving the cleaned surfaces in its natural appearance. When cleaned surfaces dries spray a coat of water repellant.

B-3 METHODS OF MEASUREMENT

Bush hammered finish shall be measure in square meter area and linear meter actually done completed and accepted to the satisfaction of the supervising Architect.

B-4 BASIS OF PAYMENT

The work quantified and determined in the preceding section or as provided in the Bill of Quantities shall be paid for at the Contract unit bid price which payment constitute full compensation including labor, materials and other incidentals necessary to complete this Item.

(C) PEBBLE WASHOUT FINISH

GENERAL CONDITIONS

The Contractor shall furnish all materials, labor tools, and equipment required in undertaking proper application of pebble washout finish as shown on the Plans and in accordance with this Specifications.

C-1 MATERIAL REQUIREMENTS

a) Pebble

Pebble shall be well graded stones sized ranging from No.4 to No. 10 rounded shape.

b) Cement

Cement shall be Portland type hydraulic cement gray or whit specie depending on the tone or color scheme approved. Colored cement shall be powder type pigmented used to the desired shade and color of finish.

C-2 CONSTRUCTION REQUIREMENTS

All pebble washout finish shall be done by men experienced and qualified to do this particular type of trade. The contractor shall submit at least two samples for each type of pebble washout finish to the Architect or Engineer for approval showing its color, texture and design patterns.

1. Surface Preparation

a) Surface to receive pebble washout finish shall be clean of all projection, dust, loose particles and foreign matters.

b) It shall be thoroughly wetted with clean water before application of scratch coat mortar. When the surface has sufficiently set, scratch with hard broom.

2. Mixture

a) Pebble finish mortar mixture shall consist of one part Portland cement and two parts pebble measured by volume or a proportion equivalent to 1:2

b) Mixtures shall be in approved containers to ensure that the specified materials are controlled accurately measured.

c) Mixtures measured by shovel or shovel counts will not be permitted. Unless specified otherwise, pebble washout mix shall be in the proportion by volume in approved mixing machines or mortar boxes.

d) The aggregate introduced and mixed shall be in such a manner that the materials will be uniformly distributed throughout the mass.

e) A sufficient amount of water shall be added gradually and the mass further mixed until a mortar plasticity necessary for the purpose intended is obtained.

f) Mortar boxes, pans etc., where mixtures are mixed shall be keep clean and free from debris or dried mortar.

3. Application

a) Before any application work started, the Contractor shall established all wood molding for vertical and horizontal groove lines after the scratch coat has seasoned for seven days in the case of masonry wall or concrete columns, beams and parapets etc.

b) In the case of finish flooring application and the like the slope of drainage shall be properly provided and design pattern properly placed.

c) The proposed under-bed shall be done to a level of 16 mm below the finish floor line to accommodate the pebble washout mix.

d) The prepared surface to receive the pebble washout mix shall be kept damp for at least 4 hours before the application work is started

e) Pebble washout finish mix shall be applied with pressure to obtain solid adhesion to the prepared surface. The applied surface shall be firm, even and monolithically applied, then allowed to set initially.

f) When the applied surface has initially set to withstand the removal of the cement paste, spray evenly by spray apparatus to washout the cement paste on the outer surface so that the pebbles are partly exposed or,

g) By means of paint brush of foam and water, or by means of spraying washing down the cement paste leaving the pebbles partially exposed in their natural texture appearance.

4. Workmanship

a) Pebble washout shall be leveled, plumbed, squared and true to line within a tolerance of 3 mm in 3.0 meters without caves cracks, blisters, pits, crazing, discoloration, projections or other imperfection.

b) There shall be no visible junction marks in the finish surface where one day work adjoins another.

c) Where required by the supervising Architect or Engineer, provide vertical and or horizontal groove joints.

5. Curing and Protection

a) When the pebble washout surface has finally set the surface shall be kept wet or moist for at least 6 days.

b) After all other trade have been completed the pebbles washout finish surfaces shall be saturated with diluted hydrochloric acid and cleaned with steel brush

c) Allow the clean surface to dry then apply a coat of silicon water repellant to protect the natural physical appearance of the pebble washout finish.

C-3 MEASUREMENT AND PAYMENT

1. Pebble washout finish shall be measure in square meters, lineal meters or part thereof for work actually completed and accepted to the satisfaction of the supervising Architect or Engineer.

2. The work done under this Item as provided in the Bill of Quantities shall be paid for at the Contract Unit Bid which price and payments constitute full compensation including materials and labor and incidentals necessary to complete this Item.

(D) CEMENT PLASTER

GENERAL CONDITONS

The Contractor shall furnish all cement plaster materials, labor, tools and equipment required in undertaking cement plaster finish as shown on the Plans and in accordance with this Specifications.

D-1 MATERIAL REQUIREMENTS

Manufactured materials shall be delivered in the manufacturer's original unbroken packages or containers which are labeled plainly with the manufacturer's name and trademark.

1. **Cement**. Cement shall be Portland Hydraulic Cement of any approved brand.

2. **Hydrated Lime** shall conform with the requirements as defined in Hydraulic Cement of any approved brand.

3. **Fine Aggregates**. Fine aggregates (sand) shall be clean, washed and sharp river sand, free from dirt, clay, organic matter or other deleterious substances

Sand derived from crushed gravel or stone may be used with the supervising Architect or Engineer's approval but in no case, shall such sand be derived from stone unsuitable for use as coarse aggregates.

D-2 CONSTRUCTION REQUIREMENTS

1. Mixture

a) Mortar mixture for brown coat shall be freshly prepared and uniformly mixed in the proportion by volume of one part Portland Cement, three (3) parts sand and one fourth (1/4) part hydrated lime.

b) Finish coat shall be pure Portland cement properly graded and mixed with water to approved consistency and plasticity.

2. Surface Preparation

a) After removal of forms, reinforced concrete surfaces shall be roughened to improve adhesion of the cement plaster.

b) Surfaces to receive cement plaster shall be cleaned of all projections, dust, loose particles, grease and bond breakers.

c) Before any application of brown coat is started, all surfaces that are to be plastered shall be wetted thoroughly with clean water to produce a uniformly moist condition.

d) Brown coat mortar mix shall be applied with sufficient pressure starting from the lower portion of the surface to fill the grooved and to prevent air pockets in the reinforced concrete/masonry work and avoid mortar mix dropping.

e) The brown coat shall be lightly broomed or scratch before surface has properly set and allowed to cure.

f) Finish coat shall not be applied until after the brown coat has seasoned for 7 days and corrective measures had been done by the Contractor on surfaces that are defective.

g) Just before the application of the finish coat, the brown coat surface shall be evenly moistened with clean water.

h) Finish coat shall be floated first to a true and even surface, and then troweled in a manner that will force mixture to penetrate into the brown coat.

i) Surfaces applied with finish coat shall then be smooth with paper or foam in a vertical motion to remove trowel marks, checks and blemishes.

j) All cement plaster finish shall be 10 mm thick minimum on vertical concrete and or masonry walls.

Wherever indicated on the Plans to be *"Simulated Red Brick Finish,* the Contractor shall render brick design on plaster surface before brown coat had properly set and then allowed to dry.

Cement shall not be directly applied to:

a) Concrete or masonry surface that had been coated with bituminous compound and,

b) Surface that had been painted or previously plastered.

3. Workmanship

a) Cement plaster finish shall be true to details and plumbed. Finish surface shall have no visible junction marks where one day's work adjoins the other.

b) Where directed by the Architect or Engineer or as shown on the Plans vertical and horizontal groove joints shall be 25 mm wide and 10 mm depth.

D-3 MEASUREMENT AND PAYMENT

1. All cement plaster finish shall be measured in square meters or part thereof for work actually completed in the building.

2. The work quantified and determined as provided in the Bill of Quantities shall be paid for at the Contract Unit Price which price constitute full compensation including labor, materials, tools and equipment and incidentals necessary to complete this Item.

(E) PLAIN CEMENT PLASTER FINISH

GENERAL CONDITIONS

The Contractor shall furnish all materials, tools, equipment and labor required in undertaking the proper application of plain cement plaster finish as provided where plastering is noted the drawings and schedules. Plastering work shall be properly coordinated with the work of other trades.

1. The work of other trades shall be adequately from damages during the plastering operations. Finishing work shall be protected with a covering of heavy craft, waterproof paper or other approved protective covering with lapped and sealed joints.

2. Scaffolding shall be amply strong, well braced, tied securely and inspected regularly. Overloading of scaffolding will not be permitted.

E-1 MATERIAL REQUIREMENTS

1. Portland Cement shall conform with the standard specifications of the ASTM 1-150, type-I, latest edition.

2. Hydrated lime shall conform with the standard specification of the ASTM C-6, latest edition.

3. Sand shall be hard, sharp, well washed, siliceous, clean and free from deleterious material.

4. Water shall be fresh, clean and free from organic matter, acids and alkali.

E-2 DELIVERY, STORAGE AND HANDLING

Manufactured materials shall be delivered with unbroken packages or containers which are plainly labeled with the manufacturer's name and brand. All cement materials shall be kept dry until ready for use.

They shall be stored off ground, under cover and away from sweating walls and other damp surfaces.

E-3 MIXTURE

1. Plaster materials, specified on a volume basis, shall be measured accurately in approved containers that will insure the specified proportion.

2. Measuring materials with shovels or shovel count will not be permitted

3. Mortar for brown coat shall be mixed in the proportion by volume of 1 part Portland cement 3 parts sand, an 1/4 part hydrated lime

4. Mortar for finish coat shall be the same as specified for brown coats, except that the proportions of sand shall be increased to not more than 4 parts.

E-4 APPLICATION

1. All surfaces to receive plaster shall be cleaned of all projections, dust, loose particles, grease bond breakers and other foreign matter.

2. Plaster shall not be applied directly to concrete of masonry surfaces that have been painted or previously plastered.

3. Before the plastering work is started, masonry surfaces shall be wetted thoroughly with a fog spray of clean water to produce a uniformly moist condition.

4. Brown coat – shall be applied with sufficient pressure to fill the grooves in hollow block or concrete to prevent air pockets and secure a good bond.

5. The brown coat shall be lightly scratched and broomed. Each coat of cement plaster shall be kept moist for 48 hours after application and then allowed to dry.

6. Finish coat – shall not be applied until after the brown coat has seasoned for 7 days.

    a) Dust before the application of the finish coat.

    b) The brown coat shall again be evenly moistened with a fog spray

    c) The finish coat shall be floated first to a true and even surface then troweled in a manner that will force the sand particles down into the plaster.

    d) Plastered surfaces shall be smooth and free from rough areas, troweled marks, checks and blemishes.

    e) Thickness of the plaster shall be 10 mm (3/8″) to 12 mm (½″) on vertical concrete and on masonry

E-5 WORKMANSHIP

Plaster work shall be finished level, plumb, square and true to line within a tolerance of 3 mm (1/8″) in 3.00 meters without waves, cracks, blisters, pits, crazing, discolorations, projection and other imperfections.

1. Plaster work shall be formed carefully around angles, contours, and well- up to screeds.

2. Special care shall be taken to prevent sagging and consequent dropping of mortar during applications.

3. There shall be no visible junction marks in the final coat where on day work adjoins the other.

E-6 PATCHING, PAINTING AND CLEANING

1. Upon completion of the building, and when directed, all loose, cracked, damage or defective parts shall be cut out and re-plastered in a satisfactory and approved workmanlike manner.

2. All painting and patching of plastered surfaces and plaster work abutting or adjoining any other finish work, shall be done in a neat and workmanlike manner.

3. Plaster drops or spatter shall be removed from all surfaces. Exposed plastered surfaces shall be left in a clean, unblemished condition ready to receive paint or other finish.

4. After the work has done, all protective coverings of cement finishes shall be removed from the floors. All rubbish and debris shall be removed from the building.

1.3. STRUCTURAL STEEL

SCOPE OF WORK

The scope of work under this section consists of furnishing of all materials, labor, tools, equipment, and performance of all operations relative to the fabrication, delivery to site, erection and painting of structural steel trusses and purlins as shown on the plans.

A. DESIGN CONDITIONS

1. All structural work shall in accordance with AISC Specification for the Design, Fabrication and Erection of Structural and steel for buildings.

2. Materials , and parts necessary to complete each item through such work which is not shown or specified shall be included, such as miscellaneous bolts, anchor, supports, braces and connections etc.

3. Shop drawings as well as erection drawings shall be prepared and submitted by the contractor to the supervising Architect or Engineer for approval before any fabrication is made.

B. SHOP DRAWINGS

1. Shop drawings giving complete information necessary for the fabrication of the component parts of the structure, including the location, type and size of all rivets,

bolts and welds, shall clearly distinguish between shop and field rivets, bolts and welds.

2. Shop drawings shall be made on conformly with the best modern practice and with due regard to speed and economy in fabrication and erection.

C. MATERIALS

1. All structural steel shapes and plates shall conform to ASTM A-36.

2. Light-gauge Cold-formed Structural Steel shall conform to pertinent specifications of the American Iron and Steel Institute (AISI).

3. Machine bolts shall conform to ASTM A-307. Each bolt shall be provided with standard nuts and washers.

4. Anchor Bolts – shall conform to ASTM A-141.

5. Cross Bracing with Turnbuckles shall conform to ASTM A-307.

6. Welding Electrodes – shall conform to AWS A-5.1 or A-5.5, E 70 Electrodes.

D. FABRICATION

1. Field fabrication shall be kept to a minimum. And shop fabrication shall be employed to the greatest extent possible with members shop fabricated as practicable with a minimum requirement for field connections.

2. Welding, shearing, gas cutting, chipping and all other works involved in the fabrication of structural steel shall be done with accuracy and of the highest quality of workmanship, within the allowable tolerance prescribed in the AISC specifications.

E. WELDING

1. The technique, appearance and quality of welds and the method of correcting defective work shall conform to the applicable provisions of "*Workmanship of the Standard Code for Welding in Building Construction of the American Welding Society*"

2. Welding of structural members in shop and on field, shall be done only by certified and experienced welder.

3. Surfaces to be welded shall be free from loose side, rust, grease, paint and other foreign materials that will impair the soundness of the weld.

4. Temporary weld and assembly attachments shall be kept to a minimum. All temporary attachment that are welded, shall be removed by a flame torch above the parent metal surface and ground to smooth surface by power grinding.

5. Note shall be made on the Plans and on the shop drawings of those joints or groups of joints in which it is especially important for the welding sequence and technique of welding to be controlled carefully, to minimize welding under restraint, and to avoid undue distortion.

6. Weld length called on the Plans and on the shop drawings shall be the net effective length.

F. CONNECTION AND HOLES

Connections shall be as shown in the drawings and shall develop the full capacity of the members.

1. Surfaces or joints prepared for welded or high strength bolted connections shall comply with the cleanliness requirements of all joints surfaces and contact surfaces within friction types joints as specified in “Bolted parts” of the AUSC Specifications.

2. Holes shall be punched or drilled at right angles to the surface of the metals and shall not be enlarged by burning.

3. Holes shall be clean-cut without rugged edges. Outside burrs resulting from drilling or reaming operations shall be removed with a tool which reaches a 1.588 mm level around the bolt holes.

G. QUALITY CONTROL PROCEDURES

1. Quality control shall be practiced by the Fabricator to assure high quality in the work. In addition to the Fabricator’s quality control procedures, materials and workmanship shall be subject to Inspection by qualified inspectors representing the Owner.

2. Fabricator shall cooperate harmoniously with the inspector to avoid interpretation in the work, when correction will be needed.

H. REJECTION

1. Materials or workmanship not in reasonable conformance with the provisions of this Specification shall be rejected at any time during the progress of the work.

2. The Fabricator shall receive of all reports made by the Inspector authorized by the Owner and/or his supervising Architect or Engineer.

I. ERECTION

1. The steel structures shall be erected plumb and true to line and grade. Bracings and supports shall be introduced whenever necessary to take care of all the loads to which the structure may be subjected. Such bracings shall be left in place as long as may be required for safety.
2.
3. Base plates and bearing plates shall be supported on steel wedges until the supported members shall have been aligned and plumb, following which the entire bearing are shall be grouted solid with non-shrink cement.

J. MARKING

1. Shop fabricated members shall be marked prior to delivery to facilitate the erection of the members.

2. Markings shall be listed and given description and copies of which shall be furnished to the Owner.

3. Markings shall be neatly painted on the members with a distinctive color of enamel paint.

K. SHOP PAINTING

1. Steel works to be encased in concrete shall not be painted. All other steel works shall be given one coat of shop paint of red lead primer, applied thoroughly and evenly to dry surfaces, which have been cleaned, by brush, spray roller coating, floor coating or dipping at the selection of the Fabricator.

2. Steel work prior to painting and after inspection and approval shall be cleaned of loose mil scale, loose rust, weld slag or flux deposit, dirt and other foreign materials.

3. Oil and grease shall be removed by solvent. Parts of the steel work which shall be fielded, welded or connected shall not be painted. All steel work specified to have no shop paint shall likewise be thoroughly cleaned.

L. FIELD PAINTING

All the steel work after complete erection, shall be field painted with the type and color specified in the section of painting of this Specifications. Painting shall not be done on any steel surface that is thoroughly clean and dry.

1.4. ROOFFING WORKS

CORRUGATED METAL ROOFING
PRE-PAINTED METAL SHEET

SCOPE OF WORK

This Item consist of furnishing all pre-painted metal sheet materials, tools and equipment, plant including labor required in undertaking the proper installation and complete as shown on the Plans and in accordance with the Specifications.

A. MATERIAL REQUIREMENTS

All Pre-Painted metal sheet and roofing accessories shall be oven baked painted true to profiles indicated on the Plans.

Pre-painted roofing sheets shall be fabricated from cold rolled galvanized iron sheets specially tempered steel for extra strength and durability. It shall conform to the material requirements defined in PNS 67:1985.

Profile section in identifying the architectural moulded rib to be used is: Regular corrugated Quad-rib, Tri-wave, Rig-wide, Twin rib, etc. Desired color shall be subject to the approval of the Architect.

1. Gutters, valleys, Flashings, Hips and Ridge roll shall be fabricated from gauge 24 (6 mm) thick cold rolled plain galvanized iron sheets specially tempered steel. Profile section shall be as indicated on the Plans.

2. Fastening hardware shall be of galvanized iron straps and rivets. G.I. straps are of .50 mm thick x 16 mm gauge 26 and standard G.I. rivets.

3. Base metal thickness shall correspond to the following gauge designation available locally as follows:

Base Metal Thickness	Designated Gauge
.40 mm thick	Gauge 28
.50 mm thick	Gauge 26
.60 mm thick	Gauge 24
.80 mm thick	Gauge 22

Length of roof sheets available in cut from 5 feet to 12') long. Long span length up to 8 meters. Special length by arrangements.

B. CONSTRUCTION REQUIREMENTS

1. Before any installation begins, the Contractor shall ascertain that the top face of the purlins is in proper alignment.

2. Correct the alignment as necessary in order to have the top faces of the purlins on an even plane.

3. Sheets shall be handled carefully to prevent damage to the paint coating. Lift all sheets or sheet packs on to the roof frame with the overlapping down-turned edge facing towards the side of the roof where installation will commence, otherwise the sheets will have to be turned end to end during installation.

4. Start roofing installation by placing the first sheet in position with the down turned edge in line with other building elements and fastened to supports as recommended.

5. Place the down-turned edge of the next sheet over the edge of the first sheet, to provide side lap and hold the side lap firmly in place. Continue the same procedure for the subsequent sheets until the whole roofing area is covered and or adopt installation procedure provided in the instruction manual for each type of molded rib profile.

6. For walling applications follow the procedure for roofing but allow a minimum end lap of 10 cm. for vertical walling.

7. **End Lap.** In case handling or transport consideration requires to use two or more end lapped sheets to provide full length coverage for the roof run, install each line of sheets from bottom to top or from eave line apex roof framing. Provide 15 cm. minimum end lap.

8. **Anchorage.** Pre-painted steel roofing sheets shall be fastened to the wood purlins with standard length G.I. straps and rivets.

9. For Steel Frame up to 4.5 mm thick, use self-drilling screw No.12 by 4.0 cm long hexagonal head with neoprene washer.

10. For Steel Support up to 5 mm thick or more, use threaded cutting screw No. 12 by 4.0 cm long hexagonal head with neoprene washer.

11. For side lap fastener use self drills screw No. 10 by 1.6 cm. long hexagonal head with neoprene washer.

12. Valley fastened to lumber and for walling, use self drilling wood screw No. 12 by 2.5 cm. long hexagonal head with neoprene washer.

13. Valley fastened to steel supports, use self drilling screws, hexagonal head with neoprene washer, drill size is 5 mm diameter.

14. In cutting pre-painted steel sheets to place the exposed color side down, cutting shall be carried out on the ground and not over the top of other painted roofing product.

15. Power cutting or drilling to be done or carried pot on pre-painted products already installed or laid in position, the area around holes or cuts shall be masked to shield the paint from hot fillings.

16. Storage and Protection. Pre-painted steel roofing, walling products and accessories should be delivered to the job site in strapped bundles.

17. Sheets and or bundles shall be neatly stacked in the ground and if left in the open it shall be protected by covering the stack materials with loose tarpaulin.

C. MEASUREMENT AND PAYMENT

1. The work done under this item shall be measured by actual are covered or installed with pre-painted steel roofing and or walling in square meters and accepted to the satisfaction of the Architect or Engineer.

2. The area of pre-painted steel roofing and or walling in square meters shall be paid for at the Unit Bid Price or contract unit price which payment shall constitute full payment including labor, materials, tools and incidentals necessary to complete the work.

CLAY ROOF TILES

SCOPE OF WORK

This Item consist of furnishing all plant, labor tools, equipment and clay roof tiles required to complete the roofing as shown on the Plans in accordance with this Specifications.

A. MATERIAL REQUIREMENTS

1. Clay Roof Tiles

Clay tiles shall be manufactured from red clay specie molded to custom pile patterns. It shall be kiln dried to improve natural aesthetic appearance and resistance to erosion and withstand any climate condition in the tropics. Where required and indicated to be glazed, color shall be approved by the Architect.

2. Sheating

a) Corrugated G. I. sub-roofing shall be 0.5 mm thick long span. Plywood sheating when used instead of G.I. shall be 12 mm thick marine plywood treated with two piles of felt paper asphalt impregnated.

b) Wood Batten shall be 2.5 cm. x 5.0 cm. pressure treated lumber properly laid to fit clay roof tiles and accessories as indicated on the Plans.

c) Fasteners shall be non-corrosive materials. Nails shall have large head sufficient length to give 19 mm penetration on wood batten and # 16 tie wires to be copper or brass as the case may be.

B. CONSTRUCTION REQUIREMENTS

1. Before the work is started, the Contractor shall secure approved roof framing Plan and determine or evaluate actual site condition.

2. In case modification is necessary, the Contractor shall submit shop drawings to the supervising Architect or Engineer.

3. Batten roof shall be installed in straight lines, level squared and firm. It may rest on sheeting and anchored rigidly by means of galvanized iron straps gauge 24 thick riveted on sheating, or nailed on top chord or jack rafter when it rests on plywood sheating.

4. The top chord or jack rafter shall have at least a minimum roof pitch of 25 degrees.

5. Plywood sheating shall be overlaid with two piles of felt paper, asphalt impregnated to control moisture. The batten shall be spaced to fit the clay roof tiles and accessories.

6. Gutter and valleys shall be set in place before wood battens are installed. Use gauge 24 plain galvanized iron sheet molded true to profile section indicated on the plans or as directed by the supervising Architect or Engineer.

7. For clay tiles on concrete roof slab provide and install pressure treated lumber 25 mm x 50 mm or metal strips properly aligned, level squared and firm.

8. Apply waterproofing on the slab surface to control moisture by cold process.

9. Laying of tiles shall start at the lower layer from right to left. See to it that the left anchorage of tile is placed near or close to hip truss as much as possible.

10. Continue to the next layer of clay roof tiles following the same procedure

11. After all clay roof tiles are laid out, mark the clay roof tiles at hips and valleys which are to be cut using straight edge or string as guide.

12. Where tiles join a hip stringer, provide waterproof elastic cement. Cement hip roll and ridge in lap and fasten with nails or tie wires as specified.

13. Fill voids at hip starters and ridge ends with mortar, color to match the tile.

14. Remove all debris and clean roof are for service.

C. METHODS OD MEASUREMENT

This item shall be measured by actual roof area laid with clay roof tiles and accessories in square meters or part thereof, for work completed and accepted to the satisfaction of the Architect.

D. BASIS OF PAYMENT

The accepted work quantified and provided in the Bill of Quantities shall be paid for at the Unit Bid Price which constitute full payment for furnishing all materials, labor, tools, equipment and other incidentals necessary to complete this item.

ROOF DRAINAGE

SCOPE OF WORK

This Item shall consist if furnishing all items, articles plant equipment, labor and materials and performing all methods necessary or required for the complete installation of all roof drains with strainers in accordance with all applicable drawings as shown on the approved plans and the provisions of this Specifications

A. GENERAL CONDITIONS

1. Performing all operations or methods necessary and required for the complete installation of all Roof Drains with strainers, including connections to downspout, in accordance with all applicable drawings and details, and subject to the terms and conditions of the contract.

2. Should there be any conflict between the sizes of roof drains and downspout, the size of the latter shall govern.

3. The size of any roof drain with strainer shall follow the diameter of the corresponding roof leader or downspout to be installed.

B. CONSTRUCTION REQUIREMENTS

1. Drainage

a) The contractor shall provide, fit or install all necessary drains with strainers where so shown or indicated on plans and or where the supervising Engineer directs.

b) Each drain with strainers shall fit the size of the corresponding downspouts or conductor over which is to be installed and in accordance with the following schedule.

c) Over each downspouts of cast iron body lacquer finish low “Dome” roof drain (rough brass strainer) 45 threaded outlet or side outlet respectively, secured to caming ring by screws.

2. Drain and Over flow Pipes

a) Concrete roof gutters or any other work which catches drains or collect rain water shall be provided with adequate drain overflow, pipes, one inch in diameter pipe spaced at 2.00 meters on centers and or as specified.

b) Weep holes, where so indicated on plans, of the size and spacing shown, shall be provided by the contractor to allow the free flow of water to drain from one level over lower level or to outside all in accordance with the detailed drawings.

3. Downspout

a) All conductors or downspout encased in concrete unless otherwise shown in drawings shall be PVc pipe as specified in plans. Size of downspout shall be as shown or indicated on plans.

b) Downspout of all floor drains indicated on reinforced concrete gutters shall be 75 mm in diameter except where specified other use and each shall branch from the adjacent main downspout if any as shown on plans.

c) Any drain with strainers of approved quality, locally made, in accordance with full size details may be substituted subject to the written approval of the supervising Architect or Engineer.

d) Should the series and type number specified herein be not suitable to a particular location due to concrete space limitations, any adaptation of the series specified of the same size, body material and finish may be substituted, subject to the approval of the supervising Architect or Engineer.

e) Any other drain shown but not specified herein and necessary to leave the work complete, shall be provided and installed by the contractor suitable to the service required and fitted to the concrete limitations at the point of installation, based on or similar as specified herein or as directed by the supervising Architect or Engineer.

C. MEASUREMENT AND PAYMENT

1. All roof drains strainers actually installed shall be measured and determined by the number of pieces or units ready for service as provided in the Bill of Quantities accepted to the satisfaction of the supervising Architect or Engineer.

2. The Item measured and determined shall be paid for at the Unit Bid Price which payment constitute full compensation of materials, labor and incidentals necessary to complete this Item.

1.5. WATERPROOFING

SCOPE OF WORK

This Item shall consist of furnishing all materials, labor, tools, equipment, plant and other facilities required as shown on the Plans and undertaking the proper application of integral and membrane waterproofing complete in accordance with this Specifications.

A. MATERIAL REQUIREMENTS

1. Integral Waterproofing

Integral waterproofing compound shall be cementitious powder pre-mix admixture or water base surface coat conforming with the standard Specifications set by the Bureau of Product Standards, Department of Trade and Industry.

2. Membrane Waterproofing

Membrane waterproofing shall be Osmo-seal powder; Liquid Elastomeric or Epoxy Solvent less waterproofing compound formulated for extra flexibility and resiliency to give lasting waterproof effect.

B. CONSTRUCTION REQUIREMENTS

1. Concrete mixture for decks, balconies, toilet and bathrooms, gutters, parapets, canopies and other areas indicated on the Plans to be integrally waterproofed shall be blended with integral waterproofing compound.

2. Only a minimum quantity of clean water shall be used in the concrete mixture to be sufficiently plastic and to obtain enough workability in placing concrete.

3. Concrete surface to be applied with membrane waterproofing shall have been integrally waterproofed, thoroughly set, dry, clean and free from foreign matters.

4. Surface shall be topped and plastered with double strength integral waterproofing compound pre-mix admixture of screened mixture: 1 part Portland cement, 3 parts clean and sharp sand and 2 packages integral waterproofing compound steel trowelled to smooth surface finish.

5. Concrete slab shall be properly graded to drain rainwater. A minimum pitch of 1 percent is satisfactory to drain water freely into the drain lines.

6. Drainage connection and weep-holes shall be set up to permit the free flow of water.

7. Any expansion and contraction joints shall be cleaned, primed, fitted with a backing rod and caulked with sealant.

8. Prepared surfaces shall be cured and kept wet by sprinkling water at regular intervals for a period of at least 3 days when smooth surface finish have actually set.

9. Allow cured surfaces to dry and remove all dust, dirt, debris and oil.

10. All lose areas shall be refitted and well secured. Repair cracks, breaks and open seams. Where required or as directed in the membrane waterproofing product instruction manual, prepared surface shall be prime coated.

C. APPLICATION PROCEDURES

1. Prior to application, concrete surface shall be sound and cured without the use of curing compound.

2. Apply a coat of neutralizer to remove oil, dirt, and other contaminants.

3. Apply a coat of concrete primer on surfaces to be installed with membrane self-sealing type when required or as directed in the product instruction manual.

4. Stir thoroughly each container of membrane waterproofing before use.

5. Apply a coat of membrane waterproofing by brush, airless spray, notched trowel, squeegee or roller preferably 15 to 20 mils maximum thickness of wet coat.

6. Three applications is recommended and each coat is allowed a minimum of 24 hours curing time between each coat or as recommended in the product manufacturer's instruction manual.

7. Application of membrane waterproofing coat should not commence unless the ambient temperature is 4.44^0 C or higher and shall not proceed during inclement weather condition.

8. The waterproofing compound is combustible. Extra care shall be observed by persons having skin sensitiveness to wear protective gloves while applying.

D. PROTECTION OF MEMBRANE WATERPROOFING SURFACES

1. To have a bond between the membrane waterproofing and the slab, concrete topping shall be placed as the membrane dries after 48 hours of application.

2. If a bond is not required, the membrane shall be protected with asphalt asbestos board or asphalt felt paper until such time as topping and concrete covering is applied.

3. Prior topping or placing concrete cover, inspect the membrane for any damage and repair work as required.

4. Exposed membrane surfaces at basement shall be covered and protected by installing tightly butted asphalt impregnated protection boards with a minimum thickness of 6 mm and 12 m on all horizontal areas.

5. Use asphalt impregnated joint boards along all walls and cove areas.

E. MEASUREMENT AND PAYMENT

1. Integral and membrane waterproofing works rendered under this Item shall be measured in square meters for areas actually waterproofed as provided in the Bill of Quantities and accepted to the Owner satisfaction.

2. The areas provided with integral and membrane waterproofing measured in accordance with the preceding section shall be paid for at the Unit Bid Price which price and payment constitute full compensation for furnishing all materials, tools equipment, labor and incidentals necessary to complete this Item.

1. ELECTRICAL

SCOPE OF WORK

The work under this Division consist of furnishing all materials, equipment, tools, labor and all other services necessary to complete and make ready for operation the Electrical Power and Lightning System described below and or indicated in the Electrical Plans in accordance with the latest edition of the Philippine Electrical Code and this Specifications and General Conditions of the Contract.

A. CONSTRUCTION REQUIREMENTS

1. Furnishing and installation of underground service entrance, conduits and conductors, and all items required by local utility power company's policy, rules and regulations.

2. Furnishing and installation of panel boards at location indicated on the plan and electrical riser layout, including all accessories required.

3. Furnishing and installation of feeder and branch circuit conductors with the necessary conduits, approved type of fittings and devices as indicated in the electrical plans.

4. Furnishing and installation of all types of utilization devices, outlets and wall switches with properly installed cover plate.

5. Furnishing of all lighting fixtures, conduits, including service entrance duct, terminal cabinet and utility boxes.

B. CODES, REGULATIONS AND STANDARDS

1. The installation and equipment shall conform to good engineering practices and in particular comply with the requirements laid down in the following documents or its equivalent which are mandatory and modified only by specific agreement.

   Philippine Electrical Code - - - - - - - - - - PEC
   Underwriter's Laboratory, Inc - - - - - - - - UL
   National Electric Manufacturers
   Association - NEMA
   Local Utility Power Company - - - - - - - - - LUPC

2. In addition to the requirements of these Codes and the Utility Power Company's requirements, local government regulations and suppliers Specifications if any, shall be followed.

C. DRAWING AND SPECIFICATIONS

1. The drawings and Specifications are meant to be complementary to each other, and what is called for by one shall be binding as if called for both.

2. Any apparent conflict between the drawings and specifications, and any controversial or unclear points in either shall be referred to the supervising Architect or Engineer for final interpretation and decisions.

3. On one copy of the plans, have a record showing all deviations that happened during the construction

4. Upon completion of work as described herein, the Contractor at his own expense shall furnish the Owner 6 copies of the "As Built" plan for future references and maintenance purposes.

D. CORRELATION OF WORK

1. The Electrical Contractor shall confer with the General Contractor and Architect to determine how and where his work fits with that of other crafts, after familiarizing himself with the plans and specifications.

2. This shall be done at the beginning of construction. Should there be any existing doubts at any point, ruling shall be secured from the supervising Architect or Engineer who shall be given time to inspect the work covering this point and to prepare a detail in the form of drawings and written instructions as required.

E. PERMITS AND INSPECTION

1. The Contractor shall obtain at his own expense, all the necessary permits and certificate of Electrical Inspection from the proper government authorities required for both the performance of his work involved and the proper operation of the system upon completion of the work.

2. The Contractor shall at his expense, reproduce the electrical plans for his work to the necessary requirements as required by the government authorities concerned in issuing permits and Certificate of Electrical Inspection.

F. EXAMINATION OF PREMISES

1. Prospective bidder is required to examine the architectural, structural, and electrical plans of the project, to visit the site and carefully take note of all the conditions thereat to have personal informed under which the electrical work is to be done.

2. No allowance will subsequently be made in his behalf of any error on his part. He will be deemed to have done this before submitting his proposal and no subsequent claims on the ground of inadequate or inaccurate information will be entertained.

G. LAYOUT OF WORK

1. Electrical system layout indicated on the drawings are generally diagrammatic and the location of outlets, devices, apparatus and equipment are only approximate.

2. The exact routing of conduits, location of outlets, devices apparatus and equipment shall be governed by structural and architectural conditions and limitations.

3. For the exact location, consult the supervising Architect or Engineer. This does not mean to permit redesigning of the systems. All outlets are to be interconnected as indicated in the drawings.

4. The Owner reserves the right to make any reasonable change in location of outlet and equipment prior to rough-in, without involving additional expense.

5. The Contractor shall be responsible and pay changes for cutting and patching for piping lines where sleeves or slots were not installed or where incorrectly located.

H. MATERIAL AND WORKMANSHIP

1. All materials to be installed shall be unused, brand new and shall conform with the standards of the Underwriters Laboratories, Inc. in every case where such a standard has been established for the particular type of materials to be used.

2. Only skilled workmen using proper tools and equipment shall be employed during the entire course of installation work.

3. All workmanship shall be of the best practices of the trade involved. The same job foreman shall be assigned and maintained at the job site during the entire course of the job.

I. UNDERGROUND SERVICE ENTRANCE

1. The Electrical Contractor shall furnish and install 220 volt current rating, 3- Phase line underground service entrance connection.

2. The service entrance conductors shall be thermoplastic type THW standard copper conductors, stranded, whose number and size are indicated on the plans and electrical riser diagram.

3. The underground service entrance shall be laid at least 60 cm. below the finish grade line and shall be installed to make the joints entirely watertight.

4. The conductor shall then be encased with concrete at least 8 centimeters thick.

J. SERVICE METERING FACILITIES

1. The Contractor shall furnish and install a concrete pedestal pole size 30 cm x 30 cm x 5.50 m in the location shown in the plan and electrical diagram including line accessories and hardware in accordance with the local power company's standards.

2. It shall be the duty of the Contractor to request the local power company to install a proper type and size of service metering instruments and all other necessary accessories, materials, equipment, devices and fittings.

K. PANEL BOARDS

1. The Contractor shall furnish and install the necessary panel boards multi-breaker type including the breakers as indicated in the drawings.

2. Circuit breakers shall be tropical of the magnetic thermal type with ratings and number of poles as indicated in the drawings.

3. All panel boards to be used shall be flush mounted when located in areas that are visible to the general public and may be surface mounted when located in machine room or areas where they are not visible to the public.

4. All panel boards shall be set plumb and symmetrical with the surrounding objects. Panel boards shall be installed in a perfectly fit cabinet of appropriate size provided with a stop in-door trim and good quality cylinder lock.

L. CONDUIT WORK

1. Standard PVC conduit pipe system is required for this project.

2. Conduit runs shall be concealed in drop ceiling and or embedded in concrete structure where concealment is not possible.

3. No conduit of less than 15 mm normal diameter shall be installed for this project. Two or more conduits shall not be installed in lieu of a larger size.

4. Conduit run shall be continuous from outlet and no running thread shall be in any conduit run. Conduit shall be cut square and properly reamed.

5. All joints shall be screwed enter knockouts of conduit boxes, pull boxes, panels and cabinet squarely. Lock-nuts shall be screwed tight to insure continuity of raceway grounding.

6. Bonds and offset shall be avoided where possible, but where necessary it shall be made with approved conduit bending apparatus.

7. Conduits which have been deformed or crushed in any manner should not be installed.

8. The Contractor shall plug with lead or closed with approved pipe caps the ends of all conduit boxes so as to prevent the entrance of white ants and dirt within the conduit system.

9. This lead or cap shall be placed that can be easily removed when so desired and at the same time serve the purpose intended.

10. Pull wire shall be inserted in the empty ducts before they are closed with lead or caps and shall be left therein for future use.

11. When not shown on the plans, conduit sizes shall correspond to the conduit sizes on tables of the Philippine Electrical Code latest edition.

M. FEEDERS AND FEEDER DUCTS

1. Feeder shall be laid out in accordance with the on-line diagram shown in the drawings.

2. Unless otherwise specified or shown on the drawings, type THW wires shall be used for feeder runs. The wires and conduit shown in the drawings shall be the minimum size to be used for feeder runs.

N. WIRING METHODS

1. Wiring for all systems shall be type THW or TW conductors using plastic conduit pipes. Other types of conductor shall be as indicated in the drawings.

2. Conduit shall be embedded in columns, walls and toppings of floors slabs to allow flush connection and lighting system which may be exposed between joints in case a drop ceiling is installed.

3. Proper fittings shall be provided at ends of conduits.

4. All conduit and conduit fittings shall be PVC and shall conform with the U.S. Underwriter's Laboratories Inc. Standard and Codes.

5. The minimum size of conduit to be used shall be 13 mm diameter. Sizes larger than 13 mm diameter shall be indicated in the drawings.

6. Smallest size of conductor to be used shall be 2.0 mm^2 type TW or THW. TW wire shall be indicated in the drawings.

7. Circuit homeruns for lighting shall be 3.5 mm^2 and 5.5 mm^2 for the power or otherwise indicated on the plans.

8. All splices, tape and junctions for all systems using conductor up to 14 mm^2 shall be accomplished by using electrical friction of rubber shapes.

9. Proper type of connections shall be employed to accommodate all splices and solder less type terminals to be used for connection to Busbar.

10. Taps and splices shall be properly protected with both plastic and friction electrical tapes to proper insulation and protection for 600 volts.

11. Wiring from ceiling outlets to lighting fixtures recessed in dropped ceilings shall be done using type TW conductors in RS or PVc conduits.

12. Proper size of boxes shall be used for switch and outlet receptacles

13. Necessary fittings such as bushing, locknuts and antishort fiber bushing shall be used at proper places required.\

14. When not shown on the Plans, conduit sizes shall correspond to the conduit sizes as prescribed in the Philippine Electrical Code table for “Size of Conduit Pipes”.

O. OUTLETS AND SWITCHES

1. All boxes for outlets and switches shall be PVC or galvanized iron approved products of reputable manufacturers.

2. Enamel coating used in lieu of zinc coating shall not be permitted.

3. All ceiling outlet boxes intended for lighting outlets shall be of the 10 cm. octagonal box larger boxes when required shall be 5.3 cm deep.

4. Convenience and wall switch outlet boxes shall be of the 10 cm by 5.3 rectangular deep flush type or 100 square cm junction box with gang raised cover as required to accommodate the wires therein.

5. All junction boxes, pull boxes and blank boxes shall be fitted with standard flat metal or plastic box cover.

6. All boxes including junction and pull boxes shall be of sufficient size to provide free space for all conductors enclosed in the box, in addition to the fittings such as switch mechanism and receptacles that may be placed therein.

P. WALL SWITHCES AND RECEPTACLES

1. Suitable single pole, two-gang, three-gang and three-way switches of the flush tumbler type and receptacles with proper Bakelite cover plates shall be furnished and installed as indicated in the drawings.

2. Wall switches intended to control lights on the 230 volts system shall be rated 15 amp. 250 volts.

3. Convenience outlets shall be flushed duplex type rated 20 amperes 230 volts 60 Hz, AC.

Q. GROUNDING INSTALLATION

1. The Contractor shall furnish and install all ground cables, connection ground rods and all other materials required to provide a permanent effective grounding system.

2. Grounding, in general, shall conform with the provisions of the National Electrical Code and as recommended by the equipment manufacturer.

3. All enclosures for electrical equipment regardless of voltage shall be grounded, including metal frames of switchboard, motors, generators and steel poles. Each shall be grounded in a separate grounding system.

4. Grounding cables shall be bare, copper suitable size and of approved type. Ground rods shall be copper clad steel with diameter of 16 mm and length of 2.0 m.

5. Ground clamps shall be of high compression, solderless cast design frame of high copper alloy bronze with minimum thickness of 4.7 mm and hardware made from silicon bronze.

6. The clamps shall be of a shape and size to fit the points of application and type of connection to be made from cable to rod, pipe and curved or flat surfaces.

R. LIGHTING OUTLETS

All ceiling outlets shall be 10 cm x 5 cm octagonal boxes. Connection from fixtures to boxes shall be accomplished by using type TW conductors on a flexible conduit.

S. LIGHTING FIXTURES

All lighting fixtures shall be furnished and installation by the contractor. They shall be as shown on the drawings or specified on the schedule of lighting fixtures. For other details as to the types and model, consult the Architect or the Engineer.

T. TEST AND GUARANTEE

1. The Contractor shall furnish all apparatus to be used in making tests of all wiring system for shorts and grounds after the electrical work is completed.

2. The Contractor guarantees all work installed under the Contract to be free from all defects for a period of one year after acceptance of the works.

3. The Contractor also agrees to repair and make good at his own expense any and all defects which may develop in his work during the time if said defects arise due to poor workmanship.

U. POWER LOAD CENTER

This Item shall consist of furnishing and installation of power load center unit substation or low voltage switch-gear and distribution panel boards at the location shown on the Plans complete with transformer, circuit breakers, cabinets and all accessories, completely wired and ready for service.

1. Material Requirements

All materials shall be brand new and shall be of the approved type. It shall conform with the requirements of the Philippine Electrical Code and shall bear the Philippine Standard Agency mark.

2. 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. High Voltage Primary incoming line section consisting of the following parts and related accessories.

a) One 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 provided with key interlock with the cubicle for the power fuses to prevent access to the fuse unless the switch is open.

b) Three power fuses mounted in separate compartments within the switch housing and accessible by hinged door.

c) One set of high voltage potheads or 3-conductor cable or three single conductor cables.

d) Lightning arresters shall be installed at the high voltage cubicle if required.

Note: Item 1 and 2 could be substituted with a power circuit breaker with the correct rating and capacity.

3. Transformer Section

a) The Transformer section shall consist of a power transformer with ratings and capacities as shown on the Plans.

b) It shall be oil liquid filled non-flammable type and designed in accordance with the latest applicable standards.

c) The transformers shall be provided with 4 approximately 2.5% rated KVA taps on the primary winding in most cases above and 3 below rated primary voltage to be changed by means of externally gang-operated manual tap changer only when the transformer is deenergized.

d) The following accessories shall be provided with the transformer, namely: drain valve, sampling, 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.

e) The high voltage and low voltage bushing and transition flange shall be properly coordinated to field connection to the incoming line section and low voltage switchboard section, respectively.

4. The 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:
Switchboard Housing
Secondary Metering Sections
Main Circuit Breaker
Feeder Circuit Breakers
Low Voltage Switchgear
Grounding System
Panel Board and Cabinets

V. CONSTRUCTION REQUIREMENTS

The Contractor shall install the Power Load Center Unit Sub-station or Low Voltage Switchgear and Panel boards at the locations shown on the approved Plan.

W. METHODS OF MEASUREMENT

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

4.Section VII. Drawings

[Insert here a list of Drawings. The actual Drawings, including site plans, should be attached to this section, or annexed in a separate folder.]

Section VIII. Bill of Quantities

Bill of Quantities, Summary of Bid Proposal & Detailed Estimate should be submitted together with the Annex "C" Form 4 to 7.

Non-attachment of Annex "C" Form 1 to 7 shall be automatically disqualified.

{ATTACH COMPANY LETTERHEAD/LOGO}

BILL OF QUANTITIIES

PROJECT: **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION: **Basco Airport, Barangay Ihuvok II, Basco, Batanes**

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE (Pesos)	AMOUNT (Pesos)
SPL-1	**Mobilization / Demobilization**	1.00	lot		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
SPL-2	**Construction Safety & Health Program**	1.00	lot		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
1.00	**CIVIL / STRUCTURAL WORKS**				
1.01	Site Works	25.81	sq.m.		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
1.02	Concrete Works	1.39	cu.m.		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
1.03	Steel Works	142.81	kgs.		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
1.04	Tile Works	34.61	sq.m.		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				

1.05	Painting Works	509.00	sq.m.		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
2.00	**ELECTRICAL WORKS**				
2.01	Feeder Conduits and Fittings	36.00	pcs		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
2.02	Feeder Conductors	60.00	ln.m.		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
2.03	Panelboard	1.00	assy		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				
2.04	Emergency Power Supply	1.00	set		
	Pesos_____ Amount in Words_____ _____ _____and _____ centavos				

Submitted by:

Signature: _____
Printed Name: _____
Position: _____
Name Company: _____
Date: _____

{ATTACH COMPANY LETTERHEAD/LOGO}

SUMMARY OF BID PROPOSAL

PROJECT: **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**
LOCATION: **Basco Airport, Barangay Ihuvok II, Basco, Batanes**

ITEM NO.	DESCRIPTION	QTY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		V.A.T.	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9] [5] x [8]	[10] 5%{[5] +[9]}	[11] [9] +[10]	[12] [5] + [11]	[13] [12] / [3]
SPL-1	**Mobilization / Demobilization**	1	lot									
SPL-2	**Construction Safety & Health Program**	1.00	lot									
1.00	**CIVIL / STRUCTURAL WORKS**											
1.01	Site Works	25.81	sq.m.									
1.02	Concrete Works	1.39	cu.m.									
1.03	Steel Works	142.81	kgs.									
1.04	Tile Works	34.61	sq.m.									
1.05	Painting Works	509.00	sq.m.									
2.00	**ELECTRICAL WORKS**											
2.01	Feeder Conduits and Fittings	36.00	pcs									
2.02	Feeder Conductors	60.00	ln.m.									
2.03	Panelboard	1.00	assy									
2.04	Emergency Power Supply	1.00	set									

Submitted by:

Signature: _____
Printed Name: _____
Position: _____
Name Company: _____
Date: _____

NAME OF PROJECT :	**REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**				
LOCATION :	Basco Airport, Barangay Ihuvok II, Basco, Batanes				
SUBJECT :	**Bill of Materials & Cost Estimate**				
				QUANTITY	UNIT
				1.00	lot
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
SPL-1	**MOBILIZATION / DEMOBILIZATION**				
C	**Equipment**				
	One-bagger Concrete Mixer, Manual Bar Cutter,	1.00	lot		
	Portable Generator Set 10kVA, Welding Machine 10-200A,				
	Oxy-Acetylene Cutting Torch/Welding Outfit,				
	10MT Mobile Crane				
			Equipment Cost	. . . . .	
C	**Equipment Cost**				
D	**Direct Cost**				
	I N D I R E C T C O S T S				
	1. OCM (0% of TDC)				
	2. CONTRACTOR's PROFIT (0% of TDC)				
	E. TOTAL OCM & PROFIT				
	F. VALUE ADDED TAX, (VAT) 5.0% of (D + E)				
	G. TOTAL ESTIMATED INDIRECT COST (F + E), P				
	H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit				
	TOTAL ESTIMATED COST (D + G), P				
	TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit				

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				1.00	lot
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
SPL-2	**CONSTRUCTION SAFETY & HEALTH PROGRAM**				
A	**Materials**				
	First-aid Kit	2.00	units		
	Safety Shoes	10.00	sets		
	Safety Helmet	10.00	pcs		
	Safety Gloves	10.00	sets		
			Materials Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	First Aider	1.00	30		
	Part-time Safety Practitioner	1.00	15		
	Note: For less than 100 Workers				
	Part-time Safety Practitioner				
	Project Duration is 120 Calendar Days				
			Labor Cost	. . . . .	
A	**Materials Cost**				
B	**Labor Cost**				
D	**Direct Cost**				

INDIRECT COSTS			
1. OCM (0% of TDC)			
2. CONTRACTOR's PROFIT (0% of TDC)			
E. TOTAL OCM & PROFIT			
F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
TOTAL ESTIMATED COST (D + G), P			
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				25.81	sq.m.
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
1.00	**CIVIL / STRUCTURAL WORKS**				
1.01	**Site Works**				
	Dismantling of existing Cable Trench & partial area of Engine bed (1.65 sq.m.) ***(Labor Only)***				
	Demolition work (0.77 cu.m.) ***(Labor Only)***				
	Removal of existing Tiles (24.16 sq.m.) ***(Labor Only)***				
	Excavation (2.04 cu.m.) ***(Labor Only)***				
A	**Materials**				
	Gravel Bedding, G-1 *(delivered on site)*		cu.m.		
	1.50mm Polypropylene Geotextile		sq.m.		
			Materials Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Construction Foreman				
	Common Worker				
			Labor Cost	. . . . .	
C	**Equipment**	QTY.	DUR. (DAYS)	RATE/DAY	
	Jack hammer				
			Equipment Cost	. . . . .	

A	**Site Works Materials Cost**	
B	**Site Works Labor Cost**	
C	**Site Works Equipment Cost**	
D	**Site Works Direct Cost**	

INDIRECT COSTS			
1. OCM (0% - 15% of TDC)		of Estimated Direct Cost	
2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost	
E. TOTAL OCM & PROFIT		of D	
F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
TOTAL ESTIMATED COST (D + G), P			
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				1.39	cu.m.
1.02	**Concrete Works**				
A	**Materials**				
	Engine Bed (0.65 cu.m.)				
	Portland Cement, 40kgs		bags		
	Sand		cu.m.		
	Crushed Gravel, 3/4"		cu.m.		
	16mm Ø x 6m DRSB		pcs.		
	12mm Ø x 6m DRSB		pcs.		
	16mm Ø x 0.65m Dowel Steel Bar with anchoring epoxy		sets		
	G.I. Tie Wires #16		kg.		
	½" x 4' x 8' Ordinary Plywood		pc.		
	Form Lumber		bd.ft.		
	Assorted CWN		kgs.		
	Water Base Waterproofing Membrane, 20kg/pail		pail		
	Polyester Fleece, 1m x 50m/roll		roll		
	Paint Roller 4"		pcs.		
	Cable Trench (0.74 cu.m.)				
	Portland Cement, 40kgs		bags		
	Sand		cu.m.		
	Crushed Gravel, 3/4"		cu.m.		
	12mm Ø x 6m DRSB		pcs.		
	10mm Ø x 6m dia. DRSB		pcs.		
	12mm Ø x 6m dia. Plain Round Bar		pc.		
	10mm Ø x 6m dia. Plain Round Bar		pc.		
	G.I. Tie Wires #16		kgs.		
	½" x 4' x 8' Ordinary Plywood		pcs.		
	Form Lumber		bd.ft.		
	Assorted CWN		kgs.		
	Water Base Waterproofing Membrane, 20kg/pail		pail		
	Polyester Fleece, 1m x 50m/roll		roll		
	Paint Roller 4"		pcs.		
			Material Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Construction Foreman				
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	
C	**Equipment**	QTY.	DUR. (DAYS)	RATE/DAY	
	One-bagger Concrete Mixer				
	Concrete Vibrator				
	Oxy-Acetylene Cutting Torch/Welding Outfit				
	Welding Machine, 10-200A				
	Manual Bar Cutter				
			Equipment Cost	. . . . .	

A	**Concrete Works Material Cost**			
B	**Concrete Works Labor Cost**			
C	**Concrete Works Equipment Cost**			
D	**Concrete Works Direct Cost**			
	INDIRECT COSTS			
	1. OCM (0% - 15% of TDC)		of Estimated Direct Cost	
	2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost	
	E. TOTAL OCM & PROFIT		of D	
	F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
	G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
	H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
	TOTAL ESTIMATED COST (D + G), P			
	TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				142.81	kgs.
1.03	**Steel Works**				
A	**Materials**				
	6mm thk. 25mm x 25mm Angle Bar, 6m.		pcs.		
	6mm thk. 38mm x 38mm Angle Bar, 6m.		pcs.		
	6mm thk. x 400mm(W) Checkered Plate, 3 meters		pcs.		
	2" dia. PVC Pipe Weephole, 3m.		pc.		
	75mm x 75mm Asphalt Spacer		ln.m.		
	Red Oxide Primer		gal		
	Epoxy Topcoat Paint		gal		
	Paint Thinner		L		
	Paint Brush 4"		pcs.		
	Oxygen (refill)		cyl		
	Acethylene 14kgs (refill)		cyl		
	Welding Rod E6011		box		
			Material Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Construction Foreman				
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	
C	**Equipment**	QTY.	DUR. (DAYS)	RATE/DAY	
	Oxy-Acetylene Cutting Torch/Welding Outfit				
	Welding Machine, 10-200A				
			Equipment Cost	. . . . .	

A	**Steel Works Material Cost**	
B	**Steel Works Labor Cost**	
C	**Steel Works Equipment Cost**	
D	**Steel Works Direct Cost**	

INDIRECT COSTS			
1. OCM (0% - 15% of TDC)		of Estimated Direct Cost	
2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost	
E. TOTAL OCM & PROFIT		of D	
F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
TOTAL ESTIMATED COST (D + G), P			
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT :	**REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**					
LOCATION :	Basco Airport, Barangay Ihuvok II, Basco, Batanes					
SUBJECT :	**Bill of Materials & Cost Estimate**					
					QUANTITY	UNIT
					34.61	sq.m.
1.04	**Tile Works**					
A	**Materials**					
	8mm thk. 600mm x 600mm Homogeneous Porcelain Tiles in Polished Finish			pcs.		
	8mm thk. 600mm x 600mm Homogeneous Porcelain Tiles in Matte Finish			pcs.		
	8mm thk. 300mm x 600mm Homogeneous Porcelain Tiles in Matte Finish			pcs.		
	Tile Adhesive (25kgs)			bags		
	Tile Grout (2kgs)			bags		
	Water Base Waterproofing Membrane, 20kg/pail			pail		
	Polyester Fleece, 1m x 50m/roll			roll		
				Material Cost	. . . . .	
B	**Labor**	QTY.		DUR. (DAYS)	RATE/DAY	
	Construction Foreman					
	Skilled Worker					
	Common Worker					
				Labor Cost	. . . . .	
A	**Tile Works Material Cost**					
B	**Tile Works Labor Cost**					
D	**Tile Works Direct Cost**					
	INDIRECT COSTS					
1. OCM (0% - 15% of TDC)				of Estimated Direct Cost		
2. CONTRACTOR's PROFIT (0% - 10% of TDC)				of Estimated Direct Cost		
E. TOTAL OCM & PROFIT				of D		
F. VALUE ADDED TAX, (VAT)		5.0%		of (D + E)		
G. TOTAL ESTIMATED INDIRECT COST (F + E), P						
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit						
TOTAL ESTIMATED COST (D + G), P						
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit						

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT :	**REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**				
LOCATION :	Basco Airport, Barangay Ihuvok II, Basco, Batanes				
SUBJECT :	**Bill of Materials & Cost Estimate**				
				QUANTITY	UNIT
				509.00	sq.m.
1.05	**Painting Works**				
A	**Materials**				
	Elastomeric Paint		gals		
	Elastomeric Putty		gals		
	Semi-gloss Latex Paint		gals		
	Flat Wall Latex Paint		gals		
	Rubberized Floor Paint		gals		
	Concrete Putty		gals		
	Paint Brush 4"		pcs		
	Paint Roller 4"		pcs		
			Material Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	
	Painting Works Material Cost				
	Painting Works Labor Cost				
	Painting Works Direct Cost				
	INDIRECT COSTS				
	1. OCM (0% - 15% of TDC)		of Estimated Direct Cost		
	2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost		
	E. TOTAL OCM & PROFIT		of D		
	F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)		
	G. TOTAL ESTIMATED INDIRECT COST (F + E), P				
	H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit				
	TOTAL ESTIMATED COST (D + G), P				
	TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit				

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				36.00	pcs
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
2.00	**ELECTRICAL WORKS**				
2.01	**Feeder Conduits and Fittings**				
A	**Materials**				
	20mm diameter x 3m Intermediate Metal Conduit, UL Listed		pcs		
	20mm diameter IMC Elbow		pcs		
	20mm diameter IMC Coupling		pcs		
	20mm diameter IMC Locknut and Bushing		pcs		
	90mm diameter x 3m Intermediate Metal Conduit, UL Listed		pcs		
	90mm diameter IMC Elbow		pcs		
	90mm diameter IMC Coupling		pcs		
	90mm diameter IMC Locknut and Bushing		pcs		
			Materials Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Master Electrician				
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	

A	**Feeder Conduits and Fittings Materials Cost**	
B	**Feeder Conduits and Fittings Labor Cost**	
D	**Feeder Conduits and Fittings Direct Cost**	

INDIRECT COSTS			
1. OCM (0% - 15% of TDC)		of Estimated Direct Cost	
2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost	
E. TOTAL OCM & PROFIT		of D	
F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
TOTAL ESTIMATED COST (D + G), P			
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT :	**REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**				
LOCATION :	Basco Airport, Barangay Ihuvok II, Basco, Batanes				
SUBJECT :	**Bill of Materials & Cost Estimate**				
				QUANTITY	UNIT
				60.00	ln.m.
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
2.02	**Feeder Conductors**				
A	**Materials**				
	5.5 mm² THHN/THWN-2 Copper Wire, Lead Free Type, UL Listed		li.m.		
	8.0 mm² THHN/THWN-2 Copper Wire, Lead Free Type, UL Listed		li.m.		
	50 mm² THHN/THWN-2 Copper Wire, Lead Free Type, UL Listed		li.m.		
	250 mm² THHN/THWN-2 Copper Wire, Lead Free Type, UL Listed		li.m.		
			Material Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Master Electrician				
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	
A	**Feeder Conductors Material Cost**				
B	**Feeder Conductors Labor Cost**				
D	**Feeder Conductors Direct Cost**				
	INDIRECT COSTS				
1. OCM (0% - 15% of TDC)			of Estimated Direct Cost		
2. CONTRACTOR's PROFIT (0% - 10% of TDC)			of Estimated Direct Cost		
E. TOTAL OCM & PROFIT			of D		
F. VALUE ADDED TAX, (VAT)		5.0%	of (D + E)		
G. TOTAL ESTIMATED INDIRECT COST (F + E), P					
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit					
TOTAL ESTIMATED COST (D + G), P					
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit					

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				1.00	assy
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
2.03	**Panelboard**				
A	**Materials**				
	Panel LP-PH	1.00	assy		
	Main: 60AT, 100AF, 2-Pole, 230V, 60Hz 25KAIC MCCB Bolt-on type				
	Branches: 4 - 20AT, 100AF, 2-Pole, 230V, 60Hz MCCB Bolt-on type				
	With Grounding Bus Bar, Terminal Lugs and Bolted Dead Front				
	Enclosure: NEMA-1 Gauge 16, Powder coated gray finish,				
	Surface Mounted				
			Material Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Master Electrician				
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	

A	**Panelboard Material Cost**	
B	**Panelboard Labor Cost**	
D	**Panelboard Direct Cost**	

INDIRECT COSTS

1. OCM (0% - 15% of TDC)		of Estimated Direct Cost	
2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost	
E. TOTAL OCM & PROFIT		of D	
F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
TOTAL ESTIMATED COST (D + G), P			
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

NAME OF PROJECT : **REHABILITATION OF POWERHOUSE AND SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SET AT BASCO AIRPORT**

LOCATION : Basco Airport, Barangay Ihuvok II, Basco, Batanes

SUBJECT : **Bill of Materials & Cost Estimate**

				QUANTITY	UNIT
				1.00	set
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
2.04	**Emergency Power Supply**				
A	**Materials**				
	100kVA Silent Type Diesel Engine Generator Set	1.00	set		
	Rated Power: 100kW / 100kVA Standby Duty				
	Voltage: 230 Volts				
	Frequency: 60 Hz				
	Power Factor: 1				
	Speed: 1800 rpm				
	Phasing: Single				
	Engine: Brand new Diesel Engine, heavy load durable, four stroke, water cooled engine, four valves per cylinder, stainless steel crankshaft, 24V DC safe isolate valve, dual spin-on paper element fuel filter, gensets equipped with dual flexible fuel union pipe				
	Alternator: Brushless, four-pole revolving field, single bearing and drop proof screen protected, Class H insulation, IP23 protection standard				
	Control System: Latest Model. Complete gen-set parameter display, independent overload protection, special on-off pre warning system, emergency stop stop button and with auto starting system				
	Inclusions: *Mounted tropical radiator, skidbase with anti-vibration mounts, skid-based diesel tank, exhaust silencer and flexible pipe, batteries with cables, toolkit and operational manual *Hauling/ Rigging/ Positioning of Generator Set to Powerhouse *Start-up of Generator Set *Testing and Commissioning *Warranty: One (1) Year or 1500 running hours whichever comes first, on parts and services from the Day of Commissioning				
	Diesel Fuel (For Testing and Commissioning)		Liters		
			Material Cost	. . . . .	
B	**Labor**	QTY.	DUR. (DAYS)	RATE/DAY	
	Master Electrician				
	Skilled Worker				
	Common Worker				
			Labor Cost	. . . . .	
C	**Equipment**	QTY.	DUR. (DAYS)	RATE/DAY	
	10 MT Mobile Crane				
			Equipment Cost	. . . . .	

A	**Emergency Power Supply Material Cost**	
B	**Emergency Power Supply Labor Cost**	
C	**Emergency Power Supply Equipment Cost**	
D	**Emergency Power Supply Direct Cost**	

INDIRECT COSTS

1. OCM (0% - 15% of TDC)		of Estimated Direct Cost	
2. CONTRACTOR's PROFIT (0% - 10% of TDC)		of Estimated Direct Cost	
E. TOTAL OCM & PROFIT		of D	
F. VALUE ADDED TAX, (VAT)	5.0%	of (D + E)	
G. TOTAL ESTIMATED INDIRECT COST (F + E), P			
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit			
TOTAL ESTIMATED COST (D + G), P			
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit			

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

Section IX. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

Technical Documents

☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid *(Annex "A" Form 1)*; **and**

☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules *(Annex "A" Form 2)*; **and**

☐ (d) Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid; **and**

☐ (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration *(Annex "B" Form 1)*; **and**

(f) Project Requirements, which shall include the following:

☐ a. Organizational chart for the contract to be bid *(Annex "B" Form 2)*;

☐ b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data *(Annex "B" Form 3)*;

☐ c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be *(Annex "B" Form 5)*; **and**

☐ (g) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder *(Annex "B" Form 6)*.

Financial Documents

☐ (h) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

☐ (i) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence **or** duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

☐ (j) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

☐ (k) Original of duly signed Bid Prices in the Bill of Quantities *(Annex "C" Form 1)* **and**

☐ (l) Summary of Bid Proposal *(Annex "C" Form 2)*; **and**

☐ (m) Bill of Materials & Cost Estimates *(Annex "C" Form 3)*; **and**

☐ (n) Summary Sheet indicating the Unit Prices of Construction Materials *(Annex "C Form 4)*; **and**

☐ (o) Summary Sheet indicating the Unit Prices of Labor *(Annex "C" Form 5)*; **and**

☐ (p) Summary Sheet indicating the Unit Prices of Equipment *(Annex "C" Form 6)* **and**

☐ (q) Cash Flow by Quarter and Payment Schedule *(Annex "C" Form 7)*.

Bidding Forms

Other Bidding Forms

(ANNEX "A")

CAAP-BAC-SF Annex " A" Form 1

{ATTACH COMPANY LETTERHEAD/LOGO}

Statement of all its ON-GOING government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid

Name of Project: _____
Location of Project: _____

Name of Company : _____
Address of Company: _____

Name of Contract	a. Owner's Name b. Address c. Telephone No.	Nature of Work	Contractor's Role		Contract Amount at Award	a. Date Awarded b. Date of Contract c. Contract Duration d. Date Started e. Date Completed	Accomplishment		Values of Outstanding Works
			Description	%			Planned	Actual	
Government									
Private									
							Total value of outstanding works		

Submitted by: _____
(Print Name & Signature)

Designation: _____

Date: _____

{ATTACH COMPANY LETTERHEAD/LOGO}

Statement of single largest COMPLETED contract similar to the contract to be bid

Name of Project: _____
Location of Project: _____

Name of Company : _____
Address of Company: _____

Name of Contract	a. Owner's Name b. Address c. Telephone No.	Nature of Work	Contractor's Role		Contract Amount at Award	a. Date Awarded b. Date of Contract c. Contract Duration d. Date Started e. Date Completed
			Description	%		

Submitted by: _____
(Print Name & Signature)

Designation: _____

Date: _____

Important Notice: This statement shall be accompanied by a Certificate of Final Acceptance issued by the owner, or a final rating of at least Satisfactory in the Constructors Performance Evaluation System (CPES). In the case of contracts with the private sector, an equivalent document shall be submitted. (Section 23.4.2.5 of the Revised IRR of Republic Act No. 9184)

Other Bidding Forms

(ANNEX "B")

Bid Securing Declaration Form

[shall be submitted with the Bid if bidder opts to provide this form of bid security]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

BID SECURING DECLARATION
Project Identification No.: *[Insert number]*

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.

2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f),of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.

3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:

    a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
    b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
    c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of *[month] [year]* at *[place of execution]*.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

Contractor's Organizational Chart for the Project

Submit Copy of the Organizational Chart that the Contractor intends to use to execute the contract if awarded to him. Indicate in the chart the names of the Key Engineering Personnel who will be assigned in the Project.

{ATTACH COMPANY LETTERHEAD/LOGO}

Attach the required Proposed Organizational Chart for the Contract as stated above.

Submitted by: _____

Designation : _____

Date : _____

{ATTACH COMPANY LETTERHEAD/LOGO}

Qualification of Key Personnel Proposed to be Assigned to the Project

Name of Project: _____
Location of Project: _____

Name of Company: _____
Address of Company: _____

	Project Manager/Engineer	Material Engineer	Foreman	Construction Safety and Health Personnel	Other Position deemed required by the Applicant for this project
1. Name					
2. Address					
3. Date of Birth					
4. Employed Since					
5. Experience					
6. Previous Employment					
7. Education					
8. PRC License					

Note: Attached individual PRC License of the (professional) personnel.

Submitted by : _____
(Signature over Printed Name)
Designation : _____
Date : _____

CAAP-BAC-SF Annex "B" Form 4a

{ATTACH COMPANY LETTERHEAD/LOGO}

Date: _____

CAPTAIN EDGARDO G. DIAZ
Chairman, Bids and Awards Committee
Civil Aviation Authority of the Philippines
Mia Road, Pasay City, M.M. 1300
Tel: 944-2358

Subject: Contractor's Letter-Certificate to Procuring Entity

Dear Sir:

Supplementing our Organizational Chart for the Contract, we have the honor to submit herewith, and to certify as true and correct, the following pertinent information:

That I/we have engaged the service of *(Name of Employee)*, to be the *(Designation)* of the *(Name of Project)*, who is a *(Profession)* with Professional License Certificate No. _____ issued on _____ and who has performed the duties in the construction of the project enumerated in the filled Annex "B" Form 5b.

That *(Name of Employee)* shall personally perform the duties of the said position in the above-mentioned project, if and when the same is awarded in our favor.

That *(Name of Employee)* shall employ the best care, skill and ability in performing his duties in accordance with the Contract Agreement, Conditions of Contract, Plans, Specifications, Special Provisions, and other provisions embodied in the proposed contract.

That *(Name of Employee)* shall be personally present at the jobsite all the time to supervise the phase of the construction work pertaining to his assignment as *(Designation)*.

That *(Name of Employee)* is aware that he shall be authorized to handle only one contract at a time.

That in order to guarantee that *(Name of Employee)* shall perform his duties properly and be personally present in the Job Site, he is hereby required to secure a certificate of appearance for the Procuring Entity's Engineer at the end of every month.

That in the event that I/we elect or choose to replace *(Name of Employee)* with another Engineer, the Procuring Entity will be accordingly notified by us in writing at least twenty one (21) days before making replacement. We will submit to the Procuring Entity, for prior approval, the name of the proposed new *(Designation)* , his qualification, experience, list of projects undertaken and other relevant information.

That any willful violation on my/our part of the herein conditions may prejudice my/our standing as a reliable contractor in future bidding of the Procuring Entity.

Very truly yours,

_____

(Authorized Representative of Bidder)

CONCURRED BY:

_____

(Name of Engineer)

CAAP-BAC-SF Annex "B" Form 4b

{ATTACH COMPANY LETTERHEAD/LOGO}

Date: _____

CAPTAIN EDGARDO G. DIAZ
Chairman, Bids and Awards Committee
Civil Aviation Authority of the Philippines
Mia Road, Pasay City, M.M. 1300
Tel: 944-2358

Subject: Key Personnel's Certificate of Employment

Dear Sir:

I am *(Name of Employee)* a License _____ Engineer with Professional License No. issued on *(Date of Issuance)* at *(Place of Issuance)* .

I hereby certify that *(Name of Bidder)* has engaged my services as *(Designation)* for *(Name of the Project)* , if awarded in their favor.

As *(Designation)* , I know I will have to stay in the job site all the time to supervise and managed the Contract works to the best of my ability, and aware that I am authorized to handle only one (1) contract at a time.

I do not allow the use of my name for the purpose of enabling the above-mentioned Contractor to qualify for the Contract without any firm commitment on my part to assume the post of *(Designation)* .

As *(Designation)* , I supervised the following completed projects similar to the contract under bidding:

NAME OF PROJECT	OWNER	COST	DATE COMPLETED

At present, I am supervising the following project:

NAME OF PROJECT	OWNER	COST	DATE COMPLETION

In case of my separation for any reason whatsoever from the above-mentioned Contractor, I shall notify the _____ *(Name of the Procuring Entity)* at least twenty one (21) days before the effective date of my separation.

_____

(Signature of Engineer)

SUBSCRIBED AND SWORN to before me this ____ day of _____, 20___ affiant exhibiting to me his/her Residence Certificate No. _____ issued on _____ at _____, Philippines.

_____

Notary Public

Until 31 December 20_____
PRT No.: _____

Issued at: _____
Issued on: _____
TIN No.: _____

Doc. No._____
Page No._____
Book No. _____
Series of_____

CAAP-BAC-SF Annex "B" Form 4c

KEY PERSONNEL

(FORMAT OF BIO-DATA)

Give the detailed information of the following personnel who are scheduled to be assigned as full-time field staff for the project. Fill up a form for each person.

1. Authorized Managing Officer / Representative: _____

2. Sustained Technical Employee:

Name: _____

Date of Birth: _____

Nationality: _____

Education and Degrees: _____

Specialty: _____

Registration: _____

Length of Service with the Firm:

_____Year From _____ (months) _____ (year)

To _____ (months) _____ (year)

Years of Experience:

If Item 7 is less than ten (10) years, give name and length of service with previous employers for a ten (10) year period (attached additional sheet/s, if necessary:

Name and Address of Employer	Length of Service	
_____	_____ year(s)	from _____to _____
_____	_____ year(s)	from _____to _____

_____ _____ year(s) from _____to _____

Experience:

This should cover the past ten (10) years of experience. (Attached as many pages as necessary to show involvement of personnel in projects using the format below).

a. Name: _____
b. Name and Address of Owner: _____
   _____
c. Name and Address of the Owner's Engineer (Consultant):_____
   _____
d. Indicate the Features of Project (particulars of the project components and any other particular interest connected with the project): _____
   _____
e. Contract Amount Expressed in Philippine Currency: _____
f. Position: _____
g. Structures for which the employee was responsible: _____
   _____
h. Assignment Period: from _____(months) _____ (years)
   to _____(months) _____ (years)

_____

Name and Signature of Employee

It is hereby certified that the above personnel can be assigned to the _____ Project, if the contract is awarded to our company.

_____ _____

(Place and Date) (The Authorized Representative)

List of Equipment, Owned or Leased and/or under Purchased Agreements, Pledge to the Proposed Project

Name of Project: _____
Location of Project: _____

Name of Company: _____
Address of Company: _____

Description	Model/Year	Capacity/ Performance/ Size	Plate No.	Motor No./ Body No.	Location	Condition	Proof of Ownership/ Lessor or Vendor
A. Owned							
I.							
II.							
III.							
IV.							
V.							
B. Leased							
I.							
II.							
III.							
IV.							
V.							
C. Under Purchased Agreement							
I.							
II.							
III.							
IV.							
V.							

Submitted by : _____
(Signature over Printed Name)
Designation : _____
Date : _____

Omnibus Sworn Statement (Revised)

[shall be submitted with the Bid]

REPUBLIC OF THE PHILIPPINES)

CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*
   [If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];
   [If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*
   [If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

   [If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with**

another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*

   [If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, Procurement Agent if engaged, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   [If a partnership or cooperative:] None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, Procurement Agent if engaged, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   [If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, Procurement Agent if engaged, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:

   a. Carefully examining all of the Bidding Documents;
   b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
   c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
   d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project

or activity.

10. **<u>In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.</u>**

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

<u>[Jurat]</u>
[Format shall be based on the latest Rules on Notarial Practice]

Bid Form for the Procurement of Infrastructure Projects

[shall be submitted with the Bid]

BID FORM

Date : _____

Project Identification No. : _____

To: [name and address of Procuring Entity]

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers],* the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract];*

b. We offer to execute the Works for this Contract in accordance with the PBDs;

c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;

d. The discounts offered and the methodology for their application are: *[insert information]*;

e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties],* which are itemized herein and reflected in the detailed estimates,

f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;

g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and

conditions of issued GPPB guidelines[2] for this purpose;

h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity*].*

l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

[2] currently based on GPPB Resolution No. 09-2020

Other Bidding Forms

(ANNEX "C")

CAAP-BAC-SF Annex "C" Form 1

{ATTACH COMPANY LETTERHEAD/LOGO}

BILL OF QUANTITIIES

PROJECT: _____
LOCATION: _____

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE (Pesos)	AMOUNT (Pesos)
	Pesos_____ Amount in Words _____ _____ __and_____ _____ centavos				
	Pesos_____ Amount in Words _____ _____ __and_____ _____ centavos				
	Pesos_____ Amount in Words _____ _____ __and_____ _____ centavos				
	Pesos_____ Amount in Words _____ _____ __and_____ _____ centavos				

TOTAL BID AMOUNT (Php) _____

TOTAL BID AMOUNT IN WORDS _____
_____
_____

Signature: _____
Printed Name: _____
Position: _____
Name Company: _____
Date: _____

CAAP-BAC-SF Annex " C" Form 2

{ATTACH COMPANY LETTERHEAD/LOGO}

SUMMARY OF BID PROPOSAL

PROJECT:
LOCATION:

ITEM NO.	DESCRIPTION OF WORK	QTY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		V.A.T.	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9] [5] x [8]	[10] 5%{[5] +[9]}	[11] [9] +[10]	[12] [5] + [11]	[13] [12] / [3]

SUBMITTED BY:

Signature: _____
Printed Name: _____
Position: _____
Name Company: _____
Date: _____

{ATTACH COMPANY LETTERHEAD/LOGO}

BILL OF MATERIALS & COST ESTIMATES					
NAME OF PROJECT :					
DESCRIPTION :					
LOCATION :				QUANTITY	UNIT
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
A	TOTAL MATERIAL COST				
B	TOTAL LABOR COST				
C	TOTAL EQUIPMENT COST				
D	TOTAL DIRECT COST				
INDIRECT COSTS					
1. OCM (0% of TDC)					
2. CONTRACTOR's PROFIT (0% of TDC)					
E. TOTAL OCM & CONTRACTOR's PROFIT					
F. VALUE ADDED TAX, (VAT) 5.0%					
G. TOTAL ESTIMATED INDIRECT COST (E + F), P					
H. TOTAL ESTIMATED UNIT INDIRECT COST (G / Quantity), P/Unit					
TOTAL ESTIMATED COST (D + G), P					
TOTAL ESTIMATED UNIT COST (Total Estimated Cost / Quantity), P/Unit					

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

CAAP-BAC-SF Annex "C" Form 4

{ATTACH COMPANY LETTERHEAD/LOGO}

SUMMARY FOR UNIT PRICES OF MATERIALS

PROJECT: _____

LOCATION: _____

DESCRIPTION	UNIT PRICE	UNIT

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

{ATTACH COMPANY LETTERHEAD/LOGO}

SUMMARY FOR UNIT PRICES OF LABOR

PROJECT: _____

LOCATION: _____

DESCRIPTION	UNIT PRICE	UNIT

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

{ATTACH COMPANY LETTERHEAD/LOGO}

SUMMARY FOR UNIT PRICES OF EQUIPMENT

PROJECT: _____

LOCATION: _____

DESCRIPTION	UNIT PRICE	UNIT

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

{ATTACH COMPANY LETTERHEAD/LOGO}

Name of Project : _____

Location of Project : _____

CASH FLOW BY QUARTER AND PAYMENY SCHEDULE

PARTICULAR	% W	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
ACCOMPLISHMENT					
CASH FLOW					
CUMULATIVE ACCOMPLISHMENT					
CUMULATIVE CASH FLOW					

Submitted by:

_____
Name of the Representative of the Bidder

_____
Position

_____
Name of the Company

_____
Date

Other Bidding Forms

(ANNEX "D")

Annex "D" Form 1 ..... Authority of Signatory (Secretary's Certificate)

AUTHORITY OF SIGNATORY

(SECRETARY'S CERTIFICATE)

I,, a duly elected and qualified Corporate Secretary of (Name of the Bidder), a corporation duly organized and existing under and by virtue of the law of the, DO HEREBY CERTIFY, that:

I am familiar with the facts herein certified and duly authorized to certify the same;

At the regular meeting of the Board of Directors of the said Corporation duly convened and held on at which meeting a quorum was present and acting throughout, the following resolutions were approve, and the same have been annulled, revoked and amended in any way whatever and are in full force and effect on the date hereof:

RESOLVED, that*(Name of Bidder)*be, as it hereby is, authorized to participate in the bidding of*(Name of the Project)*by the*(Name of the Procuring Entity)*; and in that if awarded the project shall enter into a contract with the*(Name of the Procuring Entity)*and in connection therewith hereby appoints*(Name of Representative)*, acting as duly authorized and designated representatives of*(Name of the Bidder)*, and granted full power and authority to do, execute and perform any and all acts necessary and/or to represent*(Name of the Bidder)*in the bidding as fully and effectively as the*(Name of the Bidder)*might do if personally present with full power of substitution and revocation and hereby satisfying and confirming all that my said representative shall lawfully do or cause to be done by virtue hereof;

RESOLVED FERTHER THAT, the Board hereby authorized its President to:

a. execute a waiver of jurisdiction whereby the*(Name of the Bidder)*hereby submits itself to the jurisdiction of the Philippine government and hereby waives its right to question the jurisdiction of the Philippine court;
b. execute a waiver that the *(Name of the Bidder)* shall not seek and obtain writ of injunctions or prohibition or restraining order against the CAAP or any other agency in connection with this Project to prevent and restrain the bidding procedures related thereto, the negotiating and award of a contract to a successful bidder, and the carrying out of the awarded project.

WITNESS the signature of the undersigned as such officer of the said_this.

(Corporate Secretary)

SUBSCRIBED AND SWORN to before me this day of, 20affiant exhibited to me his/her Community Tax Certificate No. _____ issued on_____ _____at, Philippines.

Notary Public

Until 31 December 20_____

_____

PRT No.: _____

Issued at: _____

Issued on: _____

TIN No.: _____

Doc. No. _____

Page No.: _____

Book No.: _____

Series of _____


Republic of the Philippines
gppb
Government Procurement Policy Board