

PHILIPPINE BIDDING DOCUMENTS

**IMPROVEMENT OF
PERIMETER FENCE
WITH SOLAR LIGHTS
FOR RRCY (EARLY
PROCUREMENT
ACTIVITY)**

IB NO. 2025-11-07-EPA

Department of Social Welfare and
Development – Field Office X

Government of the Republic of the Philippines

Sixth Edition
November 3, 2024

Table of Contents

Glossary of Acronyms, Terms and Abbreviations	4
Section I. Invitation to Bid	7
Section II. Instructions to Bidders.....	11
1. Scope of Bid.....	12
2. Funding Information.....	12
3. Bidding Requirements.....	12
4. Corrupt, Fraudulent, Collusive and Coercive Practices	12
5. Eligible Bidders	12
6. Origin of Goods.....	13
7. Subcontracts.....	13
8. Pre-Bid Conference.....	13
9. Clarification and Amendment of Bidding Documents.....	13
10. Documents comprising the Bid: Eligibility and Technical Components.....	13
11. Documents comprising the Bid: Financial Component	14
12. Bid Prices	14
13. Bid and Payment Currencies.....	14
14. Bid Security.....	15
15. Sealing and Marking of Bids.....	15
16. Deadline of Submission of Bids.....	15
17. Opening and Preliminary Examination of Bids.....	16
18. Domestic Preference.....	16
19. Detailed Evaluation and Comparison of Bids.....	16
20. Post-Qualification.....	17
21. Signing of the Contract.....	17
Section III. Bid Data Sheet.....	18
Section IV. General Conditions of Contract.....	21
1. Scope of Contract.....	22
2. Sectional Completion of Works.....	22
3. Possession of Site.....	22
4. The Contractor's Obligations.....	22
5. Performance Security.....	23
6. Site Investigation Reports.....	23
7. Warranty.....	23
8. Liability of the Contractor.....	23
9. Termination of Other Causes.....	23
10. Dayworks.....	23
11. Program of Work.....	24
12. Instructions, Inspections and Audits.....	24
13. Advance Payment.....	24
14. Progress Payment.....	24
15. Operating and Maintenance Manuals.....	24
Section V. Special Conditions of Contract.....	26
Section VI. Specifications.....	29
Section VII. Drawings.....	61
Section VIII. Bill of Quantities.....	63
Section IX. Checklist of Technical and Financial Documents.....	65

Section X. Bidding Forms.....68

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])

BDS – Bid Data Sheet

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 Improvement of Perimeter Fence with Solar Lights for RRCY (Early Procurement Activity)

1. The **Department of Social Welfare and Development Field Office X** through the **Short of Award - Trust Fund** intends to apply the sum of **Two Million Four Hundred Ninety-Nine Thousand Seven Hundred Twenty-Three Pesos and 29/100 (Php 2,499,723.29)** only being the Approved Budget for the Contract (ABC) to payments under the contract for the Improvement of Perimeter Fence with Solar Lights for RRCY (Early Procurement Activity) with IB No. 2025-11-07-EPA. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The DSWD FO X now invites bids for the above Procurement Project. Completion of the Works is required should be based on what is stipulated in the Schedule of Requirements. Bidders must have completed a similar contract within the preceding two (2) years, a single contract equivalent to at least fifty (50%) percent of the Approved Budget Cost. 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 DSWD FO X BAC Secretariat and inspect the Bidding Documents at the address given below during weekdays (except holidays) from **08:00 AM - 05:00 PM starting 04 November 2024**.
5. A complete set of Bidding Documents may be acquired by interested from the 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 **Five Thousand Pesos (₱5,000.00)**. The procuring entity shall allow the bidder to present its proof of payment for the fees in person or through e-mail during the conduct of bid opening.
6. The DSWD FO X will hold a Virtual Pre-Bid Conference through videoconferencing via google meet (<https://meet.google.com/thr-usgm-npi>) on **12 November 2024, 11:00 AM onwards**, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below on or before **25 November 2024, 09:00 AM**. Late bids shall not be accepted.
8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB Clause 16**.
9. Virtual Bid opening through videoconferencing via Google meet shall be on **25 November 2024, 11:00 AM**. Bids will be opened in the presence of the bidders’

representatives who choose to attend the activity. The links will be provided upon submission of bid documents.

10. Each Bidder shall submit one (1) original and two (2) more duplicate copies of its Bid, which shall be properly sealed and marked, to wit:

➤ **ORIGINAL BID (BLUE ENVELOPE)**

Enclose the Original eligibility and technical documents in one sealed envelope marked “ORIGINAL – TECHNICAL COMPONENT” and the Original financial component in another sealed envelope marked “ORIGINAL – FINANCIAL COMPONENT”. Seal both envelopes in an outer envelope marked “ORIGINAL BID”

➤ **COPY 1 (RED ENVELOPE)**

Enclose the certified true copies of eligibility and technical documents in one sealed envelope marked “COPY 1 – TECHNICAL COMPONENT” and the certified true copies of financial component in another sealed envelope marked “COPY 1 – FINANCIAL COMPONENT”. Seal both envelopes in an outer envelope marked “COPY 1”.

➤ **COPY 2 (YELLOW ENVELOPE)**

Enclose the certified true copies of eligibility and technical documents in one sealed envelope marked “COPY 2 – TECHNICAL COMPONENT” and the certified true copies of financial component in another sealed envelope marked “COPY 2 – FINANCIAL COMPONENT”. Seal both envelopes in an outer envelope marked “COPY 2”.

The Original Bid, Copy 1, and Copy 2 Envelopes, shall then be CONTAINED in ONE ENVELOPE (OVERALL BID COMPONENT ENVELOPE) duly marked and sealed.

ALL envelopes shall:

➤ Be addressed to:

THE CHAIRPERSON
BIDS AND AWARDS COMMITTEE
DEPARTMENT OF SOCIAL WELFARE AND DEVELOPMENT FO X
MASTERSON AVE., UPPER CARMEN, CAGAYAN DE ORO CITY

➤ Bear a warning “DO NOT OPEN BEFORE:” stating the date & time for opening of bids in accordance with the ITB

▪ Prospective Bidder is requested to indicate a label or tab marking on each technical and financial documents required to be submitted.

NON-CONFORMITY TO THE FOREGOING SHALL BE A GROUND FOR DISQUALIFICATION.

11. To resolve cases where there is an occurrence of a tie among bidders, i.e., two or more of the bidders have been post-qualified as the Lowest Calculated Responsive Bid (LCRB), the DSWD FO X shall resort to a non-discretionary and non-discriminatory measure such that the same is based on sheer luck or chance pursuant to GPPB Circular No. 06-2005 "Tie-Breaking Method".

12. After the opening and evaluation of bids, the BAC, its staff and personnel, the Secretariat and Technical Working Group (TWG), as well as observers, are prohibited

from communicating in any way with any bidder regarding the evaluation of their bids until the issuance of a Notice of Award (NOA). However, the BAC, through its Secretariat, may ask in writing the bidder for clarification of its request. All responses to requests for clarification shall be in writing.

13. The DSWD FO X 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.

14. For further information, please refer to:

ATTY. JUSTINE PHILLIP O. TADEO

Head, BAC Secretariat

DSWD Field Office X

Masterson Avenue, Upper Carmen, Cagayan de Oro City

Mobile No. 09762461169

bac.fo10@dswd.gov.ph

15. You may visit the following websites for downloading of Bidding Documents: www.philgeps.gov.ph or <https://fo10.dswd.gov.ph/>

03 November 2024

GLOFELIA J. UAYAN

Chairperson, Bids and Awards Committee

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, Department of Social Welfare and Development Field Office X invites Bids for the Improvement of Perimeter Fence with Solar Lights for RRCY (Early Procurement Activity) with Project Identification Number 2025-11-07-EPA.

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 **Short of Award – Trust Fund** in the amount of **Two Million Four Hundred Ninety-Nine Thousand Seven Hundred Twenty-Three Pesos and 29/100 (Php 2,499,723.29)**.

2.2. The source of funding is the **Trust Fund**.

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 Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that **Subcontracting is not allowed**.

8. Pre-Bid Conference

The Procuring Entity will hold a virtual pre-bid conference for this Project on the specified date and time through videoconferencing 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 **One Hundred Twenty (120) calendar days from the date of the opening of bids**. 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.

Each Bidder shall submit one (1) original and two (2) more duplicate copies of its Bid, which shall be properly sealed and marked, to wit:

➤ **ORIGINAL BID (BLUE ENVELOPE)**

Enclose the Original eligibility and technical documents in one sealed envelope marked “ORIGINAL – TECHNICAL COMPONENT” and the Original financial component in another sealed envelope marked “ORIGINAL – FINANCIAL COMPONENT”. Seal both envelopes in an outer envelope marked “ORIGINAL BID”

➤ **COPY 1 (RED ENVELOPE)**

Enclose the certified true copies of eligibility and technical documents in one sealed envelope marked “COPY 1 – TECHNICAL COMPONENT” and the certified true copies of financial component in another sealed envelope marked “COPY 1 – FINANCIAL COMPONENT”. Seal both envelopes in an outer envelope marked “COPY 1”.

➤ **COPY 2 (YELLOW ENVELOPE)**

Enclose the certified true copies of eligibility and technical documents in one sealed envelope marked “COPY 2 – TECHNICAL COMPONENT” and the certified true copies of financial component in another sealed envelope marked “COPY 2 – FINANCIAL COMPONENT”. Seal both envelopes in an outer envelope marked “COPY 2”.

The Original Bid, Copy 1, and Copy 2 Envelopes, shall then be CONTAINED in ONE ENVELOPE (OVERALL BID COMPONENT ENVELOPE) duly marked and sealed.

ALL envelopes shall:

➤ Be addressed to:

THE CHAIRPERSON
BIDS AND AWARDS COMMITTEE
DEPARTMENT OF SOCIAL WELFARE AND DEVELOPMENT
MASTERSON AVE., UPPER CARMEN, CAGAYAN DE ORO CITY

- Bear a warning “DO NOT OPEN BEFORE:” stating the date & time for opening of bids in accordance with the ITB
- Prospective Bidder is requested to indicate a label or tab marking on each technical and financial documents required to be submitted.

NON-CONFORMITY TO THE FOREGOING SHALL BE A GROUND FOR DISQUALIFICATION.

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

ITB Clause																			
5.2	<p>For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be:</p> <p>The Bidder must have completed, within the period specified in the Invitation to Bid, a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.</p>																		
7.1	No portion of the contract shall be subcontracted.																		
10.3	<p>a) Valid License Issued by Philippine Contractors Accreditation Board (PCAB) GB-1 Category D and Above;</p> <p>b) Department of Trade and Industry (DTI) Certificate of Business Name Registration for Sole Proprietorship, SEC Registration Certificate for Corporations/Partnerships/Associations, CDA Registration Certificate for Cooperatives;</p> <p>c) Valid and current Business/Mayor's Permit/ Municipal License from the bidder's principal place of Business;</p> <p>d) Notarized statement that none of the officers / directors / controlling stockholders / members /owners of the firm are related by consanguinity or affinity up to the 1st civil degree to the employees of DSWD FO-X who <i>have</i> direct access to information that may substantially affect the result of the bidding, such as, but not limited to, the members of the Bids and Awards Committee (BAC), the members of the Technical Working Group (TWG), the Procurement Team (PT), and the designer/s of the Project.</p>																		
10.4	<p>The key personnel must meet the required minimum years of experience set below:</p> <ul style="list-style-type: none"> • One (1) Licensed Project/Civil Engineer with 3 years minimum experience • One (1) Licensed Architect with 3 years minimum experience • One (1) General Foreman with 5 years minimum experience in construction industry • One (1) Master Electrician with 5 years minimum experience • DOLE Accredited Safety Officer with 3 years minimum experience 																		
10.5	<p>The minimum major equipment requirements are the following:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Equipment</u></th> <th style="text-align: left;"><u>Capacity</u></th> <th style="text-align: left;"><u>Number of Units</u></th> </tr> </thead> <tbody> <tr> <td>Hammer Chipping Gun</td> <td>>900W</td> <td>1 Unit</td> </tr> <tr> <td>Bagger Mixer</td> <td></td> <td>1 Unit</td> </tr> <tr> <td>Mini-dump truck</td> <td></td> <td>1 Unit</td> </tr> <tr> <td>Concrete vibrator</td> <td></td> <td>1 Unit</td> </tr> <tr> <td>Welding machine</td> <td>>300 Amps.</td> <td>1 Unit</td> </tr> </tbody> </table>	<u>Equipment</u>	<u>Capacity</u>	<u>Number of Units</u>	Hammer Chipping Gun	>900W	1 Unit	Bagger Mixer		1 Unit	Mini-dump truck		1 Unit	Concrete vibrator		1 Unit	Welding machine	>300 Amps.	1 Unit
<u>Equipment</u>	<u>Capacity</u>	<u>Number of Units</u>																	
Hammer Chipping Gun	>900W	1 Unit																	
Bagger Mixer		1 Unit																	
Mini-dump truck		1 Unit																	
Concrete vibrator		1 Unit																	
Welding machine	>300 Amps.	1 Unit																	
12	No Further Instruction																		

15.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <p>a. The amount of not less than Forty-Nine Thousand Nine Hundred Ninety-Four Pesos and 47/100 (₱49,994.47), if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit.</p> <p>b. The amount of not less than One Hundred Twenty-Four Thousand Nine Hundred Eighty Six Pesos and 16/100 (₱124,986.16) if bid security is in Surety Bond.</p>
19.2	<p>Partial bid is not allowed. The Goods are grouped in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.</p>
20	<p>Failure to submit the Latest Income and Business Tax Returns shall result to disqualification and forfeiture of bid security.</p>
21	<p>Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity:</p> <ul style="list-style-type: none"> I. Construction schedule and S-curve; II. Manpower schedule; III. Construction methods; IV. Equipment utilization schedule; V. Construction safety and health program approved by the DOLE; VI. PERT/CPM; and VII. Contractor's All Risk Insurance.

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 relevant 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 grant 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 an 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	<p>The Intended Completion Period is One Hundred Twenty Days (120) Calendar Days.</p> <p>NOTE: The contract duration shall be reckoned from the start date and not from contract effectivity date.</p>
4.1	<p>The Procuring Entity shall give possession of all parts of the Site to the Contractor beginning on the date of effectivity of contract until the date of its termination and/or project completion.</p>
6	<p>The site investigation reports are: Certificate of Site Inspection issued by the DSWD FO-X TWG.</p>
7.2	<p><i>[In case of permanent structures, such as buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures:]</i> The contractor shall be held liable involving the aforementioned for Fifteen (15) years.</p> <p>For Architectural and Structural defects, Electrical Connections and Equipment that needs repairs / replacement, the warranty shall be One (1) Years from project completion <u>AND</u> acceptance of the Procuring Entity.</p>
10	<p>Dayworks are applicable at the rate shown in the Contractor's original Bid.</p>
13	<p>The amount of the advance payment is 15% of the contract cost.</p> <p>Value can be availed of upon the submission and receipt of a request for the release of the advance payment after the issuance of the Notice to Proceed (NTP) and posting of an irrevocable letter of credit in favor of the Procuring Entity.</p>
14	<p>Progress payments shall be based on the "updated" Detailed Bill of Quantities based on the detailed cost estimates prepared and submitted by the Contractor during the design phase which is part of the submittals. Updating shall be limited only to minor items or sub-items not initially considered by the Contractor, but in no way shall "updating" changes the bid amount for each particular item. The Bill of Quantities as submitted by the Contractor during bidding process shall serve only for that purpose and shall not in any way become the basis for payment.</p> <p>Materials and equipment delivered on the site but not completely put in place shall not be included for payment.</p>

15.1	<p>Before the <i>issuance of Certificate of Completion</i>, the Contractor shall submit “As-Built” drawings (as required), operating and maintenance manuals as required in Item 7d under the Terms and conditions in these Bidding Documents, subject for Owner’s approval.</p> <p>Electronic versions of the As Built documents shall be in PDF and original design software formats.</p>
15.2	<p>No amount will be withheld for failing to submit “as built drawings” and/or operating and maintenance manuals and warranty certificate for all equipment within the date required. However, such documents will form part of the requirements in processing of final payment.</p>
15.3	<p>Operations and maintenance manual, together with operations training shall be provided to the end-user as part of their testing and commissioning for completion.</p>

Section VI. Specifications

Specifications

Improvement of Perimeter Fence with Solar Lights for RRCY

Bidders must state either “Comply” or “Not Comply” in the Statement of Compliance column to each indicated parameter or specification. Ensure that the offered item/s must all be compliant to the indicated parameter/s or specification/s to avoid failure of your bids.

PROJECT TITLE	UNIT	STATEMENT OF COMPLIANCE
Improvement of Perimeter Fence with Solar Lights for RRCY	1 LOT	

DIVISION 1.0 GENERAL CONDITIONS

PART 1.0 GENERAL

- 1.1 **SCOPE OF WORK:** The work covered under this Contract consists of the furnishing all materials, labor, equipment, transportation, incidentals, facilities, and superintendence necessary to complete the project in accordance with true intent these Specifications and Contract Drawings.
- 1.2. **PLANS AND SPECIFICATIONS:** The Contractor shall be responsible for carefully examining, comparing, and verifying the data furnished by the Plans and Specifications. In case of obscurity or discrepancy in the Plans and Specifications, the Contractor shall submit the matter to the Architect or his authorized representative for the proper explanation or necessary correction before any adjustment shall be made. Any adjustment by the Contractor without such determination shall be at his risk and expense.

Omitted or wrongly described details of work, which are manifestly necessary to carry out the true intent of the drawings and specifications, shall be performed as if fully and correctly set forth and described in the drawings and specifications.

The Owner may, from time to time, make changes in the specifications and construction drawings. However, if the cost to the Contractor shall be materially increased by such change, the Owner shall pay the Contractor for the reasonable cost in accordance with the changes. Changes stated herein shall be referred under Part 5 of General Conditions.

- 1.3 **LAWS TO BE OBSERVED:** The contractor shall comply with all the laws, City or Municipal Ordinances and all government Specifications and regulations in so far as they are binding upon or affecting the portion of the work hereto. The Contractor or those engaged thereon shall obtain all necessary licenses and permits and pay all taxes or fees, which may be due to the local and/or National Government in connection with

the prosecution of the work. He shall also be responsible for all damages to persons or property that may occur.

PART 2.0 MATERIALS

- 2.1 **MATERIALS:** Unless otherwise specified, all materials shall be new and free from defects and imperfections. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall be performed in the best and most acceptable manner in strict accordance with the requirements of the Plans and Specifications. Preference will be given to articles or materials that are locally manufactured, conditions of quality and price being equal.
- 2.2 **SAMPLES AND INFORMATION ON MATERIALS:** When required by the Specifications, or when called for by the Architect, the Contractor shall furnish, for approval, full Information, and satisfactory evidence as to the kind and quality of materials or articles he will incorporate in the work. The Contractor shall furnish, for Architect's and Owner's approval, all samples when so directed. The work shall be in accordance with approved samples. Materials and articles installed or used without such approval shall be at the risk of subsequent rejection.

Any failure on the part of the Contractor to conform or use materials that are not specified herein shall be under subsequent rejection. Any alteration or revision of material usage without approval from the Architect shall make the Contractor responsible and liable in terms of guarantee, workmanship, and defects.

PART 3.0 WORKMANSHIP

- 3.1 **WORKMANSHIP:** Workmanship shall be in accordance with the best standard practices and all operations required under all parts of the Specifications shall be undertaken in a neat, sophisticated manner. Only skilled personnel with sufficient experience in similar operations shall be allowed to undertake the same.

Any alteration or revision on the execution of Drawings without approval from the Architect shall be under subsequent rejection and shall make the Contractor responsible and liable for any workmanship and execution defects.

Defective workmanship shall be remedied by the Contractor, at his expense. He shall not be entitled to any payment hereunder until defective workmanship has been remedied.

- 3.2 **TEMPORARY FACILITIES:** The Contractor shall provide and maintain adequate weather-tight temporary facilities with water, light, and toilet facilities. He shall keep such places clean and free from flies. He shall remove all connections and appliances connected there with prior to the completion of the Contract and leave the premises perfectly clean.

The Contractor shall furnish all temporary lights and power and shall pay all expenses in connection therewith. Furthermore, the Contractor shall provide and pay for all water expenses for building purposes that are required by all trades.

- 3.3 PROTECTION OF WORK AND OWNER'S PROPERTY: The Contractor shall put up safety measures and continuously maintain adequate protection of all his work from damage and shall protect the Owners property, as well as all materials furnished and delivered to him by the Owner. He shall make good any such damage, injury, or loss, except such as may be caused by agents or employees of the Owner, or due to causes considered as an Act of God.
- 3.4 DEMOLITION OF EXISTING STRUCTURES: The contractor shall ensure that proper ventilation and noise comfort is provided for workers during demolition works.

PART 4.0 SUPERVISION AND INSPECTION

- 4.1 **AUTHORIZED REPRESENTATIVE:** Whenever the Contractor is not at the site, orders may be given by the Owner to his authorized representative and shall be accepted and complied to by the superintendent or foreman of the Contractor.
- 4.2 **INSPECTION OF WORK:** The Architect, Engineer, or Owner shall, at all times, have access to the work whenever it is in preparation or progress and the Contractor shall provide facilities for such access for inspection. The manner of work and all materials and equipment used therein shall be subject to inspection, tests, and approval of the Owner.
- 4.3 **CONSTANT SUPERVISION.** The Contractor shall ensure that the project will have constant supervision by a competent superintendent, who shall be present where construction is being always carried on during the working hours.
- 4.4 **DISPUTES:** The Architect shall, within a reasonable time, make decision on all claims of the Owner or Contractor and on all matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

Except as otherwise specifically provided in this Contract, all disputes concerning questions of fact arising under this contract shall be decided by the Architect, whose decisions shall be final and conclusive upon the parties as to questions of fact.

- 4.5 **CLEAN UP:** The Contractor, prior to the turnover of the work to the Owner, shall remove any excess materials, waste, debris, rubbish, and all construction and installation equipment and tools from the premises.

PART 5.0 VARIATION ORDERS

Legal Basis: 2016 IRR Annex “E” provides the rules in relation to Variation Orders.

- 5.1 **VARIATION ORDER:** Increase or decrease in quantities within the general scope of the project as bid and awarded by introduction of new work that are not originally included in the contract; or reclassification of work items that are either due to change of plans, design, or alignment to suit actual field conditions resulting in disparity between the pre-construction plans used for the purposes of the bidding and the “as staked plans” or construction drawings prepared after joint survey by the Contractor and the Owner after the award of the contract, or during actual construction.

Any changes in materials required by the Owner, or addition of works for the project, shall be in any cases should not exceed the amount as indicated with the Contract amount and pre-construction plans, except only when the said changes are necessary for the completion of the Project as a whole.

The addition/deletion of works should be within the general scope of the project as bid and awarded, and the deletion of the work should not affect the integrity and usefulness of the structure.

- 5.2 ISSUANCE: Variation order may be issued by the Procuring Entity concerned at any time during contract implementation. However, the adjustment provided for in these orders must be necessary to fully meet the requirements of the project. The issuance of a Variation Order must imply that there will not be any shortchanges in the original design; that it will not affect the structural integrity and usefulness of the structure; and that it will be covered by a Certificate of Availability of Funds (CAF).

Under no circumstances can a contractor proceed to commence work under any Change Order or Extra Work Order unless the Head of Procuring Entity (HoPE) or his/her duly authorized representative has approved the order. The Procuring Entity's representative/ Engineer / Architect may, subject to the availability of funds and within the limits of his delegated authority, authorize the immediate start of work under any Change Order or Extra Work Order, subject to any event of any emergency where the prosecution of the work is urgent to avoid any detriment to public service, or damage to life and/or property; and/or when time is of the essence.

- 5.3 AMOUNT: The net cumulative amount of the Variation Order should not exceed positive Ten Percent (+10%) of the original contract cost. The scope of work, however, shall not be reduced as to accommodate a positive Variation Order.

For additional/extra works duly covered by Change Orders involving work items which are the same or similar to those in the original contract, the applicable unit prices of work items in the original contract shall be used.

For additional/extra works duly covered by Extra Work Orders involving new work items that are not in the original contract, the unit prices of the new work items shall be based on the direct unit costs used in the original contract (*e.g.*, unit cost of cement, rebars, form lumber, labor rate, equipment rental, etc.). All new components of the new work item shall be fixed prices, provided the same is acceptable to both the government and the contractor. The direct unit costs of new components must also be based on the contractor's estimate as validated by the Procuring Entity via documented canvass in accordance with existing rules and regulations. The direct cost of the new work item must then be combined with the mark-up factor (*i.e.* taxes and profit) used by the contractor in his bid to determine the unit price of the new work item.

The request for payment by the contractor for any extra work must be accompanied by a statement, with the approved supporting forms, giving a detailed accounting and record of amount for which he claims payment. This request for payment must be included in the contractor's statement for progress payment.

-----END OF SECTION-----

DIVISION 2 CONCRETE

SECTION 2.01 CAST-IN-PLACE CONCRETE

PART 1.0 GENERAL

1.1 SCOPE. This section covers cast-in-place concrete, complete.

1.2 DELIVERY AND STORAGE

A. CEMENT: Cement shall be stored immediately upon receipt at the site of the work in a suitable weatherproof and airtight structure and elevated above the ground to prevent the absorption of moisture. Bags shall be stacked close together to reduce circulation of air but shall not be stacked against outside walls. The manner of storage shall permit easy access for inspection and identification of each shipment. Bulk cement shall be transferred to elevated airtight and weatherproof bins. At the time of use, all cement must be free flowing, and free of lumps. Cement that has been in storage for longer than 6 months will be tested by standard mortar tests or other tests as deemed necessary by the Construction Architect or Engineer to determine its suitability for use.

B. AGGREGATES: Aggregates shall be stored in areas covered with tightly laid wood planks, sheet metal or other hard and clean surface, and in a manner that will preclude the inclusion of foreign materials. Aggregates of different sizes shall be stored in separate piles.

C. REINFORCEMENT: Reinforcement shall be stored in such a manner that will prevent excessive rusting or coating with grease, oil, dirt, and other objectionable materials. Storage shall be in separate piles or racks to avoid confusion and loss of identification after bundles have been broken.

PART 2.0 MATERIALS

2.1 CEMENT: Portland cement shall conform to PNS 07, type 1. Cement for exposed concrete surfaces shall be from the same mill.

2.2 REINFORCEMENT: All reinforcing steel bars, except No. 2, shall be deformed. The manufacturer shall submit certification of compliance to this specification prior to the delivery of these materials.

2.3 FINE AGGREGATES: Fine aggregates shall be clean, hard, natural sand or manufactured sand, or a combination of both.

2.4 COARSE AGGREGATES: Coarse aggregates shall be hard, durable, uncoated gravel, crushed gravel, or a combination thereof.

2.5 WATER: Mixing water for concrete shall be fresh, clean, and potable.

- 2.6 CURING MATERIALS: Materials shall conform to one of the following unless otherwise designated:
- a. Polyethylene sheeting for curing, 6 mils minimum thickness, clear.
 - b. Waterproof paper or polyethylene-coated waterproof paper for concrete curing shall be of commercial quality.
 - c. Burlap, plain or polyethylene-coated burlap shall be of commercial quality.
- 2.7 EXPANSION JOINT'S FILLER: shall be elastomeric pre-molded type.
- 2.8 SEALING MATERIALS: for expansion joints shall be single component urethane or acrylic type sealant.
- 2.9 FORMS COATING: shall be non-staining type mineral oil.
- 2.10 VAPOR BARRIER: shall be a polyethylene sheet, 6 mils minimum thickness, clear, conforming to commercial standard CS-238.
- 2.11 WATER – STOP: (if applicable) shall be rubber, neoprene or PVC.

PART 3.0 FORMS

- 3.1 GENERAL REQUIREMENTS: Forms shall be provided for all concrete. Forms shall be set true to line and grade and maintained as to ensure completed work within the allowable tolerance specified and shall be mortar tight. The contractor shall be responsible for the adequacy of forms and form support. Wire ties shall not be used where the concrete surface will be exposed to weathering and where discoloration will be exposed. All formworks shall be provided with adequate clean-out openings to permit inspection and easy cleaning after all reinforcement has been placed. Where forms for continuous surfaces are placed in successive units, these shall be fitted over the completed surface to obtain accurate alignment of the surface and to prevent leakage of mortar. Panel forms shall be constructed to provide tight joints between panels. All forms shall be constructed so that they can be removed without damaging the concrete. All exposed joints, edges and external corners shall be chamfered a minimum of 20 mm unless specified otherwise hereinafter.
- 3.2 MATERIALS FOR FORMS: Forms shall be of wood, plywood, steel, or other suitable materials. Wood forms for surfaces exposed to view in the finished structure and requiring a standard finish, shall be plywood. For unexposed surface, undressed square-edged lumber may be used. Forms for surfaces requiring special finishes shall be plywood or hard-pressed fiberboard not less than 12 mm thick. Surfaces of steel forms shall be free from irregularities, dents, and sags.
- 3.3 COATING: Before placing the concrete, the contact surfaces of forms shall be coated with non-staining mineral oil or suitable non-staining form coating compound, or shall be given two coats of nitrocellulose lacquer, except as specified otherwise. Mineral oil shall be used on forms for surfaces, which are to be painted. For surfaces not exposed to view in the finished structure and when temperature is above 40 °F, sheeting may be wetted thoroughly with clean water. All excess coating shall be removed by wiping with cloths. Re-used forms shall have the contact surfaces cleaned thoroughly; those,

which have been coated, shall be given an additional application of the coating. Plaster waste molds shall be sized with two coats of thin shellac or lacquer and coated with soft or thinned non-staining grease.

- 3.4 TOLERANCE AND VARIATIONS: The contractor shall set and maintain concrete forms to ensure that after removal of the forms and prior to patching and finishing, no portion of the concrete work will exceed any of the tolerances specified. Variation in floor levels shall be measured before removal of supporting shore. The contractor shall be responsible for variations due to deflection. The specified variation for one element of the structure will not be applicable when it will permit another element of the structure to exceed its allowable variations. Except as otherwise specified hereinafter, tolerances.

Type of Structure	Tolerance ± (in mm)
Footings	32
Columns	25
Slab	25
Lintel Beams	40
Stiffener Columns	40
Anchorage/ Bolts	3

PART 4.0 CLASSES OF CONCRETE

- 4.1 STRENGTH REQUIREMENTS. Concrete of the various classes, if not indicated in the drawings and as specified under other sections, shall be proportioned and mixed for the following strengths:

CLASS A	SPECIFIED COMPRESSIVE STRENGTH, 28 Days, (Psi)
AA	4,000
A	3,000
B	2,500
C	2,000
P	600

Concrete made with high-early-strength cement shall have a 7-day strength equal to the specified 28-day strength for concrete of the class specified made with type I or II Portland cement.

- 4.2 USAGE. Concrete of the various classes shall be used as follows:
- a. Class AA concrete - For water storage tanks, septic tanks and other work as indicated.
 - b. Class A concrete - For pre-cast concrete items, slabs, beams, and walls above grade, columns, stairs, lintels, and for all reinforced work not otherwise indicated or specified.
 - c. Class B concrete - For slabs and grade, grade and tie beams, footings, and for such concrete work as indicated or specified.
 - d. Class C concrete - For all concrete not reinforced except as otherwise indicated or specified.

- e. Class P concrete - For slabs on grade subject to vehicular load and as indicated or specified.

PART 5.0 PROPORTIONING, MEASUREMENT AND MIXING

5.1 **CONCRETE DESIGNS MIX:** Concrete mixes except otherwise indicated shall be designed by the contractor. The proportions shall be changed whenever necessary to maintain the workability, strength, and standard of quality core the concrete covered by these specifications, and to meet the varying conditions encountered during construction. Test for slump and unit weight shall be performed under the supervision of the Construction Architect/Engineer.

5.2 **SLUMP:** shall be determined in conformance with ASTM C 143, and shall be within the following limits, provided the required strength is obtained:

STRUCTURAL ELEMENT	SLUMP FOR VIBRATED CONCRETE	
	Minimum	Maximum
Walls, columns, and grade beams, 250 mm. Maximum thickness	75mm	100mm
Other construction	50mm	75mm

5.3 **PROPORTIONING OF MATERIALS:** shall be accomplished by weighing, except as otherwise provided herein. In urgent situation, volumetric proportioning may be used temporarily, if permitted by the Construction Architect/Engineer, who will stipulate the length of the period during which volumetric proportioning may be used. The contractor shall furnish the necessary equipment and shall establish accurate procedures for determining the quantities of free moisture in the aggregates, the true volume of the fine aggregate if volumetric proportioning is used, and the air content of the freshly mixed concrete if air-entrained concrete is used. Such procedures are subject to the approval of the Construction Architect/Engineer. Moisture, volumetric and air determinations shall be made at intervals as directed by the Construction Architect/Engineer and as specified hereinafter under field testing requirements. Allowable tolerances for measuring cement and water shall be one (1%) percent; for aggregates, two (2%) percent; and three (3%) percent for mixtures.

5.4 **WEIGHT MEASUREMENT:** The fine aggregate and each size of coarse aggregate shall be weighed separately. Cement in standard packages (bags) need not be weighed, but bulk cement or fractional packages shall be weighed on a scale separate from that used for weighing other materials.

5.5 **VOLUMETRIC MEASUREMENT:** The weight proportions shall be transposed into equivalent volumetric proportions by weighing representative samples of the aggregates in the conditions in which they will be measured and in accordance with ASTM C29. In determining the true volume of the fine aggregate, allowance shall be made for the bulking effect from the moisture contained therein. Suitable allowances shall also be made for variations in the moisture conditions of the aggregates.

- 5.6 **MIXING:** All concrete shall be machine mixed. In cases of emergency or small batches, the mixing may be done by hand if was authorized by the Construction Architect/ Engineer. Mixing shall begin within 30 minutes after the cement has been added to the aggregates. The time of mixing after all cement and aggregates are in the mixer drum shall be not less than one minute for mixers having a capacity of one cubic yard or less; for mixers of larger capacities, the minimum time shall be increased 15 second for each additional cubic yard. A reduction in the mixing time shall be permitted if mixer performance tests made at the contractor's option and at his expense, indicate adequate mixing with the reduced time. All mixing water shall be introduced in the drum before one-fourth of the mixing time has elapsed. The entire content of the mixer drum shall be discharged before recharging. The time elapsing between the introduction of the mixing water to the cement and aggregates or the cement to the aggregates and placing of the concrete in final position in the forms shall not exceed 60 minutes, if the air temperature is less than 85 degrees Fahrenheit. If the air temperature is equal or greater than 85 degrees Fahrenheit, time elapsed shall not exceed 45 minutes. The re-tampering of concrete, i.e., re-mixing with or without additional cement, aggregate or water, will not be permitted.
- 5.7 **READY-MIXED CONCRETE.** Ready-mixed concrete is defined in this specification as concrete produced regularly by a commercial establishment and delivered to the purchaser in the plastic state. Subject to the approval of the Construction Architect/Engineer, ready-mixed concrete may be used provided that (a) the plant has sufficient capacity and transportation equipment to deliver the concrete at the rate desired, and (b) the plant meets the requirements specified for equipment, measurement of materials, and mixing. The cement, aggregates, water and admixtures shall conform to all applicable requirements of this specification. Ready-mixed concrete not specified otherwise hereinafter shall be mixed and delivered by means of the following methods:
- a. **TRUCK MIXING:** Concrete shall be mixed and delivered in a truck mixer. Mixers shall be charged with a ribbon-fed mixture of aggregates and cement, or in the absence of facilities for ribbon feeding, the aggregates shall be charged before the cement. When mixing has begun during or immediately after charging, a portion of the mixing water not in excess of that required to produce the minimum acceptable slump shall be added ahead of or with the other ingredients. Total mixing shall not be less than 50, but not more than 100 revolutions of the drum at the manufacturer's rated mixing speed after all ingredients, including water, are in the drum. After 30 to 75 revolutions of the drum, the slump shall be tested and additional water shall be added if necessary to produce the required slump; if additional water is necessary, mixing shall be continued for at least 20 revolutions of the drum after the water is added. Mixing speed shall not be less than rpm for revolving drum mixers, and not less that 4 rpm nor more than 16 rpm for open-top mixers. Any turning of the drum during transportation shall be at the speed designated by the manufacturer of the equipment, as agitating speed. Each batch of concrete delivered at the job site shall be accompanied by a time slip issued at the batching plant, bearing the time of departure therefrom and the signature of the inspector. Discharge of concrete from the drum shall be completed within 1 hour or before the drum completes 250 revolutions after the introduction of water to the cement and aggregates.
 - b. **COMBINATION CENTRAL PLANT AND TRUCK MIXING:** (Shrink Mixing). Concrete shall be partially mixed in a central plant mixer and the mixing completed in a truck mixer. The mixing time in a central plant mixer shall be the

- minimum required to intermingle the ingredients and shall not exceed 30 seconds. The mixing shall be completed in a truck mixer as specified herein before under truck mixing.
- c. **CENTRAL PLANT MIXING:** Concrete shall be mixed completely in a stationary mixer at a plant and transported to the site of the work in a truck agitator or a truck mixer operating at a speed of rotation designated by the manufacturer as agitating speed. Mixing shall begin within 30 minutes after cement has been added to aggregates. When authorized in writing by the Construction Architect/Engineer non-agitation equipment approved by him may be used for transporting concrete. The time lapse between the introduction of the mixing water to the cement and aggregates and the placing of concrete in final position in the forms shall not exceed: (a) for agitating equipment - 60 minutes, if air temperature is less than 80 degrees F. or 45 minutes, if air temperature is equal or greater than 85 degrees F., (b) for non-agitating equipment - 30 minutes.
 - d. **CONSISTENCY OF CONCRETE:** Except as specified otherwise, the slump shall be from 50 mm to 100 mm.

PART 6.0 PLACING REINFORCEMENTS AND MISCELLANEOUS MATERIALS

- 6.1 **GENERAL REQUIREMENTS:** All reinforcement bars, stirrups, hanger bars, wire fabric, spiral, and other reinforcing materials shall be provided as indicated on the drawing or required by this specification, together with all necessary wire ties, chairs, spaces, supports and other devices necessary to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from rust, scales, oil, grease, clay, and other coatings, and foreign substances that would reduce or destroy the bond. Rusting of reinforcement shall not be a basis of rejection, provided that the rusting has not reduced the effective cross-sectional area of the reinforcement to the extent that the strength is reduced beyond specified value. Heavy, thick rust or loose, flaky rust shall be removed by rubbing with burlap or other approved method, prior to placing. Reinforcement, which has bends not shown on the project drawings, approved shop drawings, or is reduced in section by rusting such that its weight is not within permissible ASTM tolerances, shall not be used. All reinforcement shall be supported and wired together to prevent displacement by construction loads or by the placing of concrete. Unless directed otherwise by the Construction Architect/Engineer, reinforcement shall not be bent after being partially embedded in hardened concrete. Where cover over reinforcing steel is not specified it shall be in accordance with ACI 318.
- 6.2 **PLACING:** Reinforcement shall be placed accurately and secured. It shall be supported by suitable chairs or spacers or by metal hangers. On the ground, and where otherwise subject to corrosion, concrete or other suitable non-corroding material shall be used for supporting reinforcement. Where the concrete surface will be exposed to the weather in the finished structure or where rust would impair the appearance or finish of the structure, all reinforcement supports, within specified concrete cover, shall be galvanized or made of a suitable non-corroding material.
- 6.2 **SPLICING OF REINFORCEMENT:** Splicing of reinforcement shall be in accordance with ACI 318, except as indicated otherwise or modified herein. Where splices in addition to those indicated on the drawings are necessary, they shall be approved by the

Construction Architect/Engineer prior to their use. Splices shall not be used in grade beams and slabs at points of maximum stress. Except as indicated or specified otherwise herein, in lieu of lapping, but splicing of reinforcement may be permitted provided the splicing material, equal or greater in cross sectional area to the spliced steel, shall possess a minimum of 125 percent of the yield strength or 90 percent of the ultimate strength of the reinforcing steel, whichever is the greater. But splicing shall preferably use over lapping for bar sizes No. 11 and above.

- 6.3 MOVING REINFORCING STEEL: All placement or movement of reinforcing steel after placement to positions other than that indicated or specified shall be subject to the approval of the Construction Architect/Engineer,
- 6.4 SETTING MISCELLANEOUS MATERIAL: Anchors and bolts, including, but not limited to those for machine and equipment bases, frames or edgings, hangers and inserts, door bucks, pipe supports, pipe sleeves, metal ties, conduits, drains and all other materials in connection with concrete construction, shall, where practicable, be placed and secured in position when the concrete is placed. Anchor bolts for machines shall be set to templates, plumbed carefully and checked for location and elevation with an instrument, and shall be held in position rigidly to prevent displacement while concrete is being placed.

PART 7.0 CONVEYING AND PLACING CONCRETE

- 7.1 CONVEYING: Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by proper methods, avoiding segregation or loss of ingredients. It shall be deposited as nearly as practicable in its final positions in the forms. At any point in the conveying, the free vertical drop of the concrete shall not exceed 91 cm. Chuting will be permitted only where the concrete is deposited into a hopper before it is placed in the forms. Conveying equipment shall be cleaned thoroughly before each run. All concrete shall be deposited as soon as practicable after the forms and reinforcements have been inspected and approved by the Construction Architect/Engineer. Concrete, which has been segregated in conveying, shall be removed, and disposed of as directed by the Construction Architect/Engineer.
- 7.2 PLACING CONCRETE: No concrete shall be placed after there is evidence of initial set. All concrete placing equipment and methods shall be subject to approval of the Construction Architect/Engineer. Concrete placement will not be permitted when weather conditions prevent proper placement and consolidation. Before placing concrete on porous sub-grades, they shall be dampened as directed by the Construction Architect/Engineer. Forms shall be clean and free from dirt, construction debris and water. Concrete shall be deposited in horizontal layers approximately 31 to 51 cm deep in a manner to preclude the formation of cold joints between successive layers. The method of depositing concrete shall be such as to avoid displacing the reinforcement and segregating the aggregate. Concrete shall be worked about the reinforcement and embedded fixtures and avoid overworking which may result in segregation. On the bottom of slabs, the girders where the congestion of steel near the forms makes placing difficult, a layer of mortar equal to the approved slump shall be deposited to cover the surface to a depth of approximately 25 mm before placing the concrete. Water, which accumulates on the surface of the concrete during placing, shall be removed by

absorption with porous materials in a manner that prevents removal of cement. Pumping of concrete through aluminum pipe shall not be permitted.

7.3 VIBRATION: All concrete, except for concrete slabs 100 mm or less in depth, shall be compacted using high frequency, internal, mechanical vibrating equipment supplemented by hand spading and tamping. Concrete slabs 100 mm or less in depth shall be consolidated by wood tamper and spading and settling with a heavy leveling straight edge. Vibrator shall be designated to operate with vibratory element submerged in the concrete and shall have a frequency of not less than 6,000 impulses per minute when submerged. The vibrating equipment shall be always adequate in number units' power of each unit to consolidate the concrete properly. Vibration of forms and reinforcement shall not be employed except when authorized specifically the Construction Architect/Engineer. Vibrators shall not be used to transport the concrete in the forms. Vibration shall be discontinued when the concrete has been compacted thoroughly and ceased to decrease in volume.

7.4 CONSTRUCTION JOINTS: Joints not shown on the drawings shall be made and located so as to least impair the strength of the structure and shall be subject to approval of the Construction Architect/Engineer. In general, they shall be located near the middle of the spans of slabs, grade beams. Horizontal joints in walls shall be at the underside of floor, slabs, grade beams, or girders and at the top of footings or grade slabs. Grade beams, brackets, and drop panels shall be placed at the same time as slabs. Joints shall be perpendicular to the main reinforcement. All construction joints in contact with the grade or earth shall be provided with an approved type of rubber or PVC water-stop to minimize water leakage. Water-stop shall be installed so as to form a continuous watertight diaphragm. Joints and splices shall be vulcanized or heat-sealed and as recommended by the manufacturer as approved.

a. Reinforcement in construction joints. All reinforcing steel shall be continued across joints. Keys and inclined dowels shall be provided as directed by the Construction Architect/Engineer. Longitudinal keys at least 38 mm deep shall be provided in all joints in walls and between walls and slabs or footings.

7.5 EXPANSION JOINTS AND CLEAVAGE JOINTS.

a. Expansion joints and cleavage joints shall not be less than 12 mm wide except as indicated otherwise. Expansion joints not exposed to weather shall be filled completely with pre-formed joint materials. Expansion joints exposed to weather and cleavage joints between vertical masonry surfaces and floor slabs lay on earth shall be filled to a depth of 25 mm from the surface or face of the concrete with pre-formed joints' material. The 25-mm deep space above the performed material shall be cleaned after the concrete has been cured, and when dry, filled with flush with joint-sealing material. Reinforcement or the embedded metal items bonded to the concrete shall not be permitted to extend continuously through any expansion joints.

b. Sealing materials for expansion joints shall be single component urethane sealant or equal.

c. Other embedded items. All sleeves, inserts, anchors, and embedded items required for adjoining work or for its support shall be placed prior to concreting. All subcontractors whose work is related to the concrete supported by it shall be given ample notice and opportunity to introduce or furnish embedded item before the concrete is placed. All ferrous metal sleeves, inserts, anchors and other embedded

ferrous items exposed to the weather or where rust would impair the appearance of finish, or the structure shall be galvanized.

- 7.6 **PLACING EMBEDDED ITEMS:** Expansion joint material and embedded items shall be positioned accurately and supported against displacement. Voids in sleeves, inserts and anchors' slab shall be filled temporarily with readily removable material to prevent the entry of concrete into the voids.
- 7.7 **PLACING CONCRETE IN HOT WEATHER:** Placing concrete in hot weather shall be in accordance with ACI305 except as modified herein. In hot weather, extra care shall be taken to reduce the temperature of the concrete being placed, and to prevent rapid drying of newly placed concrete. When the outdoor ambient temperature is more than 90 degrees F., the fresh concrete shall be shaded as soon as possible after the placing and curing shall be started as soon as the surface of the fresh concrete is sufficiently hard to permit it without damage.

PART 8.0 SURFACE FINISH (EXCEPT FLOOR FINISH)

- 9.1 **GENERAL REQUIREMENTS:** All formed surfaces shall be repaired by patching with cement mortar. Cement mortar for patching shall be the same composition as that used in the concrete, except that for exposed surfaces' part of the cement shall be white Portland cement to provide a finish color matching the surrounding concrete. Patching shall be done as soon as the forms are removed area to surfaces which are to be cured with a curing compound shall be covered during the application of the compound. All areas to be patched shall be cleaned thoroughly. Minor honeycomb or otherwise defective areas shall be cut out to solid concrete but to a depth of not less than 25 mm. The edges of the cut shall be perpendicular to the surface of the concrete. The area to be patched and at least 150 mm adjacent hereto shall be saturated with water before placing the mortar. The mortar shall be mixed approximately one hour before placing and shall be re-mixed occasionally during this period with a trowel without the addition of water. A grout of cement and water mixed to a consistency of paint shall then be brushed on to the surfaces to which the mortar is to be bonded. The mortar shall be compacted into place and screeded slightly higher than the surrounding surface. Patches on exposed surface shall be finished to match the adjoining surfaces, after they have set for an hour or more. Patches shall be cured as specified for the concrete. Holes extending through the concrete shall be filled by means of a plunger type gun or other suitable device from the unexposed fact. The excess mortar shall be wiped off the exposed face with a cloth. Finished surfaces shall be protected from stains and abrasions. Standard finish against steel, plywood and wood forms shall be equal in workmanship, texture, and general appearance to that of approved sample panels. Concrete with excessive honeycombing, which exposes the reinforcing steel or other defects affecting the structural strength of the member will be rejected and the defects shall be corrected as directed by the Construction Architect/Engineer, and at the expense of the contractor.
- 9.2 **RUBBED-FINISH:** Rubbed finish shall be provided for all exposed concrete beams and ceiling. The surface of the concrete shall not vary more than 16 mm when measured from a five-foot template. Exposed surfaces shall be rubbed with carborundum or other abrasives to a smooth even finish or uniform appearance. Upon completion of the rubbing, the surface shall be washed thoroughly with clean water.

PART 10.0 CURING

- 11.1 GENERAL REQUIREMENTS: Curing for all concrete shall be accomplished by preventing loss of moisture, rapid temperature change, mechanical injury, or injury from rain or flowing water for a period of Seven (7) days when normal Portland cement has been used. Curing shall be started as soon after placing and finishing as free water has disappeared from the surface of the concrete. Curing may be accomplished by any of the following methods or combination thereof, as approved.
- 11.2 MOIST CURING: Unformed surfaces shall be covered with burlap or other approved fabric-type mats and shall be kept continually wet. Forms shall be kept continually wet. If forms are removed before the end of the curing period, curing shall be continued on unformed surfaces that will be unexposed in the finished work.
- 11.3 IMPERVIOUS SHEET CURING. Surfaces shall be covered with waterproof paper, polyethylene coated waterproof paper or burlap, or polyethylene sheets, lapped 100 mm at edges and ends, and sealed with an adhesive tape suitable for the type of covering used. The covering shall be weighed to prevent displacement and kept in place and in repair during the curing period.
- 11.4 CURING PERIODS: When 7-day compression test cylinders, representative of parts of a structure already placed, indicate that the 28-day strengths may be less than 90% of the design strengths, those parts of the structure shall be given additional curing, as directed by the Construction Architect/Engineer. Curing shall be as follows:

TIME (Minimum)	CONCRETE ELEMENT
7 Days	All concrete not specified otherwise
10 Days	Pavement not undercover

- 11.5 REMOVAL OF FORMS AND PROTECTION: Forms shall be removed in a manner, which will prevent damage to the concrete. Forms shall not be removed without approval of the Construction Architect/Engineer.

PART 12.0 SAMPLING

- 12.1 CONCRETE: The strengths specified and the design mix shall be verified during the progress of the work at intervals by testing standard cylinders of samples taken at the job site.

Three test cylinders shall be taken for each 60 cubic meter or fraction thereof of each class of concrete placed, but at least test cylinders shall be taken each day for each class of concrete placed that day, or as directed by the Construction Architect/Engineer. No more than 3 cylinders shall be taken from any one batch. The contractor shall furnish the work and labor, materials, and facilities for taking the samples, handling, storing the cylinders at the site of the work, and shipping the cylinders for testing to the authorized and designated testing laboratory at his expense.

- 12.2 **SAMPLE IDENTIFICATION:** Each sample shall be contained in a clean container, which shall be securely fastened to prevent loss of material. It shall be tagged for identification. The tag shall contain the following information: (1) Contract No., (2) Sample No., (3) Quantity, (4) Date Sample was taken, (5) Sampler, and (6) Intended Use.
- 12.3 **CONCRETE TESTING:**
- a. Testing consistency of concrete slump shall be determined in accordance with ASTM C143. Samples for a slump determination will be taken from the concrete during placing in the forms. Tests shall be made.
 - b. Tests shall likewise be made at the beginning of a concrete placement operation and at subsequent intervals to ensure that the specification requirements are met.
 - c. Concrete testing shall also be done whenever test cylinders are made.
 - d. Testing of specimens for compressive strength shall be in accordance with ASTM C39. Test will be made at 7 and 28 days from time of molding. When a satisfactory relationship between 7- and 28-day strengths has been established, the 7-day tests' results may be used as an indicator of the 28-day strength. Each test shall be the average of the strengths of the three test specimens of a set except that if one specimen in a set of three shows evidence, other than low strength, or improper sampling, molding, handling, or curing, the remaining two specimens shall be considered the test result. No more than 10 percent of the cylinders tested shall have compressive strengths less than that specified.
- 12.4 **CONTRACTOR-FURNISHED MIX DESIGN:** If test results of any concrete to be used in the project show that the concrete strength is below the specified limits and does not meet other requirements of this specification, the contractor shall make all necessary adjustments, as directed by the Construction Architect/Engineer at the Contractor's expense. Concrete, which, at the end of 28 days, does not meet the specified strength, shall be removed or otherwise corrected at the Contractor's expense, with corrective methods subject to the approval of the Construction Architect/Engineer.

-----END OF SECTION-----

DIVISION 3.0 METAL

DIVISION 3.01 GENERAL CONDITIONS

PART 1.0 GENERAL

- 1.1 **DESCRIPTION:** The contents of this section apply to all sections of this division unless otherwise specified or modified.
- 1.2 **REFERENCE STANDARDS:** Comply with the latest edition of the following of the following as applicable unless otherwise specified or modified:
- A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), 1978: Specification for the Design, Fabrication and Erection of Structural Steel for Building; Code of Standard Practice for Steel Buildings and Bridges: Specification for Architecturally Exposed Structural Steel.
 - B. AMERICAN IRON AND STEEL INSTITUTE (AISI): "Specifications for the Design of Cold Formed Steel Structural Members, 1974."
 - C. AMERICAN WELDING SOCIETY (AWS): Standard Welding Symbols A2.0-68; Standard Welding Code DI.1-1973 (Rev. 1-73 & 2-74). (To govern if in conflict with AISC).
 - D. RESEARCH COUNCIL ON RIVETED AND BOLTED JOINTS OF THE ENGINEERING FOUNDATION (RCRBJ): Specification for Structural Joists using ASTM A-325-76a Bolts.
 - E. STEEL JOIST INSTITUTE-AMERICAN INSTITUTE OF STEEL CONSTRUCTION (SJI-AISC): 'Standard Specifications for Open Web Steel Joists,' and 'Standard Specifications for Long span Steel Joists,' 1978 Editions.
 - F. STRUCTURAL STEEL PAINTING COUNCIL (SSPC): Painting Manual, Volume 1; Good Painting Practice, Painting Manual, Volume 2; Systems and Specifications.
- 1.3 **SOURCE QUALITY CONTROL:** The Contractor shall be responsible for the fabrication, correct fitting and alignment of the various metal items or component members. However, the Fabricator shall permit the Architect or an independent inspection agency, if engaged by the Owner, to inspect work in progress in his shop. Such Inspection shall not relieve the Contractor of his responsibility to furnish materials and workmanship in accordance with the Contract Documents.
- 1.4 **PRODUCT DELIVERY, HANDLING AND STORAGE:** All materials shall be handled and stored in such manner as to prevent damage or disfigurement. Finished items or components shall be stored above ground on platforms, pallets, or other supports and protected from harmful elements.
- 1.5 **PROTECTION:** The installer shall protect any existing work subject to damage during the installation of specified work and shall adequately protect specified work during installation. The installer shall protect finished work that is readily subject to damage by subsequent work or environmental conditions immediately following the installation thereof.

- 1.6 FIELD MEASUREMENTS: Fabricator shall take actual measurements in field to verify or supplement dimensions indicated. He shall be responsible for accurate fit of specified work.
- 1.7 FIELD QUALITY CONTROL: Facilities shall be provided by the Contractor, as needed, for the proper inspection of the specified work, including temporary platforms, hoists, protective devices, electric current, etc. Improper workmanship, as determined by the Architect, shall be corrected, and replaced, at no additional cost to the Owner,
- 1.8 CONDITIONS OF WORK-IN-PLACE: Work-in-place, on which specified work is in any way dependent, must be examined. Any defect that may influence satisfactory completion and performance of specified work must be reported, in writing, to the Contractor and the Architect. The absence of such notification shall be construed as acceptance of work-in-place.
- 1.9 CORROSION PROTECTION: Separate dissimilar metals, and metals from soil and other corrosive surfaces, with a 30-mil coating of Bituminous compound, SSPC Paint 12, unless permanent separation is provided.

-----END OF SECTION-----

SECTION 3.02 STRUCTURAL STEEL WORK

PART 1.0 GENERAL

- 1.1 SCOPE: This section includes structural steel work, complete.
- 1.2 HANDLING, SHIPPING AND STORING OF MATERIALS. All materials shall be handled, shipped, and stored in a manner that will prevent distortion or other damage. Materials shall be stored in a clean location and keep properly drained. All damaged materials shall be replaced or repaired by and at the expense of the contractor.

PART 2.0 MATERIALS

- 2.1 STRUCTURAL CARBON STEEL FOR BOLTED OR WELDED WORK: shall conform to ASTM A36.
- 2.2 STRUCTURAL TUBING FOR BOLTED OR WELDED WORK: shall conform to ASTM A500 or A501.
- 2.3 BOLTS AND NUTS: shall conform to the requirements for regular hexagon bolts and nuts of ANSI 818.2.1 and 818.2.2. Materials shall conform to ASTM 307.
- 2.4 WASHERS: Circular washers shall be flat and smooth and shall conform to requirements for Type A washers in ANSI B 27.2. Beveled washers to American Standard Beams and channel shall be square or rectangular, shall conform tapered in thickness, and shall be smoothed. Washer for use- with high strength bolts shall be hardened.
- 2.5 WELDING ELECTRODES AND RODS
 - A. SUBMERGED ARC WELDING. Bare electrodes and flux for submerged arc welding shall conform to the requirements of AWS D1.0, and the following grades:

STEEL	GRADE
A36	SAW-1 or SAW-2

PART 3.0 FABRICATION

- 3.1 GENERAL: Except as modified herein, fabrication shall be in accordance with the applicable specifications and standards of the American Institute of Steel Construction. Workmanship shall be equal to standard commercial practice in modern structural shops. Portions of the work exposed to view shall be finished neatly. Structural materials, either plain or fabricated, shall be stored above the ground on platforms, skits, or other supports. Material shall be kept from dirt, grease, and other foreign matter, and shall be protected as far as practicable from corrosion. All materials shall be clean and straight. If straightening or flattening is necessary, it shall be done by a process and in a manner that will not damage the material. Shearing, flame- cutting and chipping shall be done carefully and accurately. The radii of a re-entrant gas-cut fillet shall be not less than 25 mm and as large as practicable. The top and bottom surfaces of base plates, cap plates of columns and sole plates shall be planed, or the plates shall be hot straightened and parts of members in contact with them shall be faces.
- 3.2 BOLTED CONSTRUCTION: Holes for bolted construction shall be 1.59 mm larger than the nominal diameter of the bolt. Holes shall be clean cut without torn or ragged edges. Outside burrs resulting from reaming or drilling shall be removed. For punched holes the diameter of the die shall not exceed the diameter of the punch by more than 1.59 mm. The dies for sub-punched holes shall be at least 1.59 mm smaller than the nominal diameter of the bolt. If any hole must be enlarged to admit the bolts, they shall be reamed. Reamed holes shall be cylindrical and perpendicular to the member. Where practicable, reamers shall be directed by mechanical means. After assembly of the

member and before reaming, holes punched full size and holes sub-punched shall admit a cylindrical pin 3 mm less in diameter than the nominal size of the holes perpendicular to the face of the member without drifting in not less than 75 percent of any group of continuous holes in the same plane. When holes are reamed or drilled, 85 percent of the holes in any contiguous group, after reaming or drilling, shall show no offset greater than 79 mm between adjacent thickness of metal. Bolts' holes shall be at right angle to the member. The slope of bolted parts in contact with the bolt head shall not exceed 1:20 with respect to a plane normal to the bolt axis. Where the surface of a bolted path has slope of more than 1:20, beveled washer shall be used to compensate for the lack of parallelism.

- 3.3 STRUCTURE'S SUBJECT TO STATIC LOADING: Holes for bolts shall be drilled or sub-punched and reamed, except that where the thickness of the material is not greater than the nominal diameter of the bolt plus 3 mm, the holes may be punched full size.
- 3.4 COMMON BOLTS: Bolts transmitting shear shall be threaded to such a length that not more than one thread would be within the grip of the metal. The bolts shall be of such length that they will extend entirely through the nuts with the beveled end outside the nut. Bolt heads and nuts shall be drawn tight against the work with a suitable wrench not less than 38-cm long. Bolt heads shall be tapped with a hammer while the nut is being tightened.
- 3.5 SHOP PAINTING: All structural steel work, except zinc coated surfaces and steelwork to be embedded in concrete or mortar, shall be shop painted. Surfaces to be welded shall not be coated within 75 mm of the weld, prior to welding. Surfaces shall be thoroughly dry and clean when the paint is applied. No painting shall be done in wet weather except under cover; the temperature shall be above 45 degrees F. but not over 90 degrees F. Paint shall be applied thoroughly. Surfaces that will be concealed or inaccessible after assembly shall be painted prior to assembly.

PART 4.0 PREPARATIONS PRIOR TO ERECTION

- 4.1 CLEANING: Except as modified herein, surfaces shall be cleaned to bare metal by a suitable blasting process. Surfaces that may be damaged by blasting shall be cleaned to bare metal by powered wire brushing or other mechanical means. Surface that will be enclosed from the weather and subject to exposure no more corrosive than an indoor atmosphere controlled for human comfort, may be cleaned by wire brushing or other manual or mechanical means for removal of loose mill scale, rust, dirt, and other deleterious substances. Cleaned surfaces, which become contaminated with rust, dirt, oil, grease, or other contaminants, shall be washed with solvents until thoroughly clean. Steel to be embedded in concrete shall be free from dirt and grease. Bearing surfaces, including contact surfaces within friction-type joints, shall not be painted nor galvanized but shall be coated with rust preventive coating, applied in the shop. The coating shall be removed just prior to field erection using a remover approved by the rust preventive manufacturer. The surfaces, when assembled, shall be free from rust, greases. Dirt and other foreign matter.

- 4.2 PRE-TREATMENT: Except as modified herein, immediately after cleaning, surfaces shall be coated with a coat of pre-treatment coating applied to a dry film thickness of 0.3 to 0.5 mil or be given a crystalline phosphate base coating. The phosphate base coating shall be applied only to blast-cleaned bare metal surfaces.
- 4.3 PRIMING: Treated surfaces shall be primed as soon as practicable after the pre-treatment coating has dried. Except as modified herein, the primer shall be two coats of epoxy type or as specified in Section: Field Painting applied to a minimum dry film thickness of 3 mils. Surfaces that will be concealed after construction and will require no over-painting may be primed. Damage to primed surfaces shall be repaired with primer.
- 4.4 MATCH MARKING: Members and component part of structures shall be assembled, and match marked prior to erection to ensure accurate assembly and adjustment of position on final erection. Painted assembly markings shall be removed from any surface to be welded or riveted. Scratch or notch marks shall be located in a manner that will not affect the strength of the member or cause concentrations of stress.

PART 5.0 ERECTION

- 5.1 GENERAL: Except as modified herein, erection shall be in accordance with the applicable specifications and standards of the AISC "Manual of Steel Construction". Erecting equipment shall be suitable for the work and shall be in first class condition. Where parts cannot be assembled or fitted properly because of errors in fabrication or of deformation due to handling or transportation, such condition shall be reported immediately to the Construction Architect/Engineer and his approval of the method correction obtained. The correction shall be made in his presence. Bent or damaged parts shall be rejected. Steelwork shall be drained properly. Pockets in structures exposed to the weather shall be filled with waterproof material. Safety belts and lines shall be used by workers on high structures, unless safe working platforms or safety nets are provided.
- 5.2 ASSEMBLY: The frame of steel structures shall be carried up true as shown and all match markings shall be followed. Temporary bracing shall be used wherever necessary to support all loads to which the structure may be subjected, including equipment and operation thereof and piles of materials. Such bracing shall be left in a place as long as may be required for safety. The various members forming parts of a completed frame after being assembled shall be aligned and adjusted accurately before being fastened. Fastening of splices of compression members shall be done after the abutting surfaces have been brought completely into contact. No riveting, welding, or bolting shall be done until much of the structure will be stiffened and by has been aligned properly. Bearing surfaces and surfaces which will be in permanent contact shall be cleaned before the members are assembled. As erection progresses, the work shall be bolted or welded sufficiently to take care of all dead load, wind, and erection stresses. Splices will be permitted only where indicated. Erection bolts used in welded construction may be tightened securely and left in place; if removed, the holes shall be filled with plug welds.

- 5.3 FIELD BOLTING: shall be in accordance with the requirements specified for shop fabrication. Unfair holes shall be corrected by reaming.
- 5.4 FIELD WELDING: shall be as specified for shop fabrication of welded construction. Any shop paint on surfaces adjacent to joints to be field-welded shall be wire-brushed to reduce the paint film to a minimum.
- 5.5 FIELD PAINTING: All exposed surface of steelwork shall be shop painted. Surfaces where the shop coat of paint has been damaged shall be retouched using the same system as the original shop painting. Surfaces which will be in contact after erection, except when in contact with bolted or welded connections, shall be given one finish coat before erection. The cleaning, pre-treatment and priming of welds and the areas adjacent thereto shall be done promptly after the acceptance of the weld and shall be as specified under the shop painting.

PART 6.0 INSPECTION

- 6.1 GENERAL: Contractor's inspection shall be made promptly to permit immediate correction of defects. The inspector shall stamp each piece, which is accepted, with the mark assigned to him. The contractor shall be fully responsible for the accuracy and character of the work in all details, errors or faults which are discovered after delivery or during erection shall be corrected by the contractor in accordance with the requirements of the contract and without increase in the contract price. The contractor shall provide competent supervision and visual inspection of all fabrication through shop inspectors whose primary duty is inspection.

-----END OF SECTION-----

DIVISION 4.0 FINISHES

SECTION 4.01 CONCRETE FINISH

PART 1.0 GENERAL

- 1.1 **WORK INCLUDED:** This section includes the materials and procedures required to achieve finishes on concrete surfaces as stated in the schedule.

PART 2.0 PRODUCTS

2.1 **SUBSTRATE MATERIAL**

- A. **COMPRESSIVE STRENGTH:** Concrete floor slabs subject to live loads shall have a concrete screed with a maximum thickness of 2" (50mm) and a minimum compressive strength of 1500psi (10MPa).

2.2 **FORMS**

- A. **PLYWOOD:** For Form Finish.
B. **PHENOLIC FILM FACED PLYWOOD:** 9-18mm thick, laminated-faced ply. Use this on areas designated as having Fair-Faced Concrete Finish.

2.3 **SCHEDULE OF FINISHES**

- A. **FORM FINISH:** Use plywood form for ceilings designated as unpainted.
B. **PLAIN CEMENT FINISH:** Plain cement finish shall be floated to a compact and smooth surface. The top surfaces shall then be steel trowelled to an even, hard surface, free from low and high spots.

2.4 **FINISH TOLERANCES:** See individual finish specifications for applicable type class.

- A. Class A tolerances shall be true planes within 1/8-inch in 10ft as determined by a 10-foot straightedge placed anywhere on the slab in any direction.
B. Class B tolerances shall be true planes within 1/4-inch in 10ft as determined by a 10-foot straightedge placed anywhere on the slab in any direction.
C. Class C tolerances shall be true planes within 1/4-inch in 2ft as determined by a 2-foot straightedge placed anywhere on the slab in any direction.

PART 3.0 EXECUTION

- 3.1 **AS-CAST PLYWOOD FINISH (Form Finish and Fair-Faced Concrete Finish)** Concrete shall be cast against forms constructed of plywood not less than 16mm (5/8") thick or of boards lined with tempered hardboard not less than 5mm (3/16") thick. The arrangement of plywood sheets or liner sheets shall be orderly and symmetrical, and sheets shall be in as large sizes as are practicable. Sheets showing torn grain, worn edges, patches or holes from previous use or other defects which will impair the texture of concrete surfaces shall not be used. All fins on the surface shall be completely removed.

-----END OF SECTION-----

SECTION 4.03

PAINTING

PART 1.0 GENERAL

- 1.1 **DEFINITION OF PAINT:** The term "PAINT " as used herein, includes emulsions, enamels, paints, varnishes, sealers, and other coatings, whether used as prime, intermediate, or finish coats.
- 1.2 **QUALIFICATIONS:** Refer to Part 1.0 of General Conditions (Section 1.0).
- 1.3 **QUALITY ASSURANCE:**
 - A. The Owner reserves the right to subject material samples to test at his expenses. If such material tests do not meet the specified standards, the cost will be charged to the Contractor.
 - B. Number of coats, where specified, is minimum. Contractor shall apply as many as required to meet specifications for solid, uniform appearance. Where film thickness in mils is specified, spot checks will be made to determine compliance with specified thickness.
- 1.4 **SUBMITTALS:**
 - A. Submit 2 samples of each color or finish (including all coats). Where the same color or finish is to be applied over different materials, samples of each shall be submitted on different materials, where practical.
 - B. Sample size shall be a minimum of 150 mm x 150 mm (6" x 6").
- 1.5 **PRODUCT DELIVERY, HANDLING, AND STORAGE:**
 - A. Specified materials shall be delivered to the job site bearing manufacturers' name, brand name, type of paint, analysis showing all important constituents of the paint, color of paint and instructions for thinning.
 - B. Specified item and/or its components shall be handled in such manner as to prevent damage. The same shall be properly protected from harmful elements or damage by other work prior to its incorporation into the Project.
 - C. Store materials in a well-ventilated space designated for the storage and mixing of paint. Materials delivered to the site shall be properly stored as to minimize exposure to extremes of temperature.
- 1.6 **PROTECTION:**
 - A. Paint materials shall be properly protected from damage, providing for adequate storage space. Take all necessary precautions to prevent fire, such as keeping oily rags in U. L. approved metal containers or removing from building at the end of each day's work.
 - B. All work fittings, furniture, etc., are to be suitably protected during execution of the work. Splashes on floors, walls, etc. are to be removed during progress of work and overall, left clean and perfect upon completion.
 - C. No exterior or exposed painting shall be carried out under adverse weather conditions, such as extremes of temperature, during rain, fog, etc., or if there is excessive dust in the air.
 - D. **LEAD CONTENT AND WARNING LABELS**

1. The material manufacturer shall state the lead content on the label of any paint product container based on metal percentage of total solids.
2. The label of any paint product exceeding 0.5% lead content shall include the following statement: "This paint contains more than 0.55 lead content and shall not be used on surfaces accessible to children."

1.7 FIELD QUALITY CONTROL: Refer to Part 3.0 of General Conditions (Section 1.0)

1.8 REPAIR OF DEFECTIVE WORK:

- A. All defective or damaged work shall be restored to initial condition.
- B. All voids, cracks, nicks, etc., will be repaired with proper patching material and finished flush with surrounding surfaces.
- C. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- D. Defective or damaged items and/or components, which cannot be repaired or restored to initial conditions, shall be removed and replaced to the satisfaction of the Architect at no additional cost to the Owner.

1.9 MECHANICAL AND ELECTRICAL ITEMS: Painting Contractor shall be responsible for painting mechanical and electrical items as specified herein. No name plates, rotating shafts, bearing bronze, electrical windings or valve stems shall be painted, nor shall any part furnished in nickel or chrome plated be painted.

1.10 CLEANING: Upon completion of the building, the Painting Contractor shall remove all paint spots from all finished work, remove all empty cans and leave the entire premises free from rubbish or other debris caused by his work. He shall remove his equipment from the premises. He shall clean off all glass free from paint spots and smears and shall present the work clean and free from all types of blemishes.

PART 2.0 PRODUCTS

1.0 GENERAL

- A. Materials are specified to establish the standards of grade and quality desired for the work, principal pigments and vehicle types and minimum percentage of solids content by volume.
- B. The products of any Manufacturers may be submitted for use provided they there are existing technical data sheets (TDS) and material sample to be approved by the Architect.
- C. Based on the approved material sample, all the preparation should be followed as TDS desires or as quality is ensured.

2.2 COLOR, GLOSS AND TEXTURE: refer to Finish Schedule. All work is to be completed without deviation from these unless written approval Is received from the Architect. No extra cost shall be allowed because of the color variety scheduled.

PART 3.0 EXECUTION

3.1 GENERAL:

- A. Work-in-place, on which specified work is to be applied, shall be examined to ensure that conditions are satisfactory for application of specified materials. Any defect, which may influence satisfactory completion of specified work, shall be report, in writing, to the Architect. Absence of such notification will be construed as acceptance of work-in-place.
- B. Do not apply exterior paint in damp or rainy weather or until surfaces have thoroughly dried from the effects of such weather.
- C. Before start of painting, remove finish hardware, accessories, plates, lighting fixtures, and similar Items, as approved by the Architect, except U.L. Labels on Fire Door and Frames, which must not be removed. Use only workers skilled in the applicable building trade for removal and reinstallation of finished item in-place.
- D. The following items shall be masked or protected with suitable covering:
 - 1. Sealing caulking and glazing compounds (unless otherwise directed by the Architect).
 - 2. Glass.
 - 3. Gauges, thermometers, and other recording devices.
 - 4. Moving parts of machinery and other mechanical equipment - such as: shafts, couplings, valve stems, and the like.
 - 5. Coated decorative sheet metal work.
 - 6. Sprinkler heads and the like.
 - 7. Underwriter Laboratories Labels (U.L. Labels)

3.2 SURFACES PREPARATION AS APPLIED TO VARIOUS SUBSTRATE:

A. METAL:

New Surface:

- Surface to be painted should be clean and dry, free from oil, grease, dust, dirt, wax, solder flux, and other contaminants by wiping with mineral spirits or paint thinner.
- Remove rust by application of Rust-remover/converter, soaked with water then wire brushing, sanding, or scraping.
- Where maximum performance of protective coatings is necessary (e.g. Industrial Plants), prepare surface by blast cleaning.

Repainting:

- Sand wire brush or scrape rusted metals and apply METAL ETCHING SOLUTION to remove rust. Let it stay for 10 to 15 minutes. Be sure to wash off surface thoroughly with mineral spirits, letting it dry before applying paint. Primer should be applied a few hours after application of metal etching solution before rust sets in.

C. CONCRETE:

New Surface:

- Surface to be painted should be clean and dry, free from oil, grease, dust, dirt, contaminants and all loose girt or mortar.
- Treat with CONCRETE NEUTRALIZER. As instructed by the chemical's manual, dilute the concrete neutralizer into water. Apply liberally by brush and let dry overnight.
- Rinse with water to remove white crystals that form on the surface. Let dry.

Repainting:

- For existing skim-coated smooth surface, as deemed necessary by the Architect, apply the priming coat before proceeding to succeeding coats. If not, sand the surface using Grit #80 - #120 Sandpaper before smoothing the surface to remove unnecessary textures.

D. CAULKING:

- Oil-Based caulking compound surfaces to be painted shall be prepared by removing all foreign materials.

3.3 PAINT APPLICATION

- A. GENERAL: Specified work shall be done by skilled painters in sophisticated manner. All spaces shall be broom-cleaned before painting is started. Surface to be painted shall be clean, dry, smooth, and adequately protected from dampness. Each coat of paint shall be allowed to dry at least twenty-four (24) hours before succeeding coat is applied. Finish work shall be uniform, of approved color, smooth and free from runs, sags, defective coverage, clogging or excessive flooding. If surfaces are not adequately covered, as determined by the Architect, further coat shall be applied to the satisfaction of the Architect. Edges of paint adjoining other materials or colors shall be sharp and clean without overlapping.
- B. PAINT MIXING: Paint mixing and thinning shall be done only in accordance with directions of Manufacturer. Paint must be strained free from all skin and extraneous substances and shall be thoroughly mixed in a clean container during use.
- C. METHODS OF APPLICATION: Exterior first coats and Interior first coats shall be applied by brush, except on shop-primed surfaces, which shall be applied by brush or roller. All primer shall be applied by brush. Succeeding coats over field-primed surfaces and all coats over shop-primed surfaces may be applied by brush roller or spray. Distemper brushes are to be of approved type and less than 15 cm in width. Rollers for applying enamel shall have a short nap. Spray equipment shall be as recommended by the manufacturer of the paint used. Areas inaccessible to spray painting shall be coated by brushing or suitable method.
- D. COATING: Consecutive coats of paints are to be slightly differing tints except in the case white. Each coat shall be allowed to harden before the next is applied. Rubbing down between coats is to be done with fine abrasive paper.
- E. WOOD FINISHING: Wood to have natural satin varnish finish shall be stained as required and sealed as soon as such items are delivered to the job site. Seal all ends to exclude moisture. Knotting shall be carried out by using resin paint dissolved in spirit or approved ready mixed compound.
- F. DEFECTS IN MASONRY, CONCRETE, PLASTER AND GYPSUM BOARD: Small cracks, holes, and other similar imperfections in masonry, concrete and plaster surfaces, which show up after the prime-sealer has been applied to the surface, shall be filled with an approved spackling compound or putty before application of succeeding coats.
- G. WOODWORK AND METALWORK: Primed or undercoated woodwork and metalwork shall not be left in an exposed or unsuitable situation for an undue period before completing the painting process. Stopping and filling shall be deemed to be included for all metal works, plaster works, and woodwork specified to be used to produce a surface ready for priming and painting.
- H. FINAL TOUCH-UPS: Upon completion, finish work shall be touched-up and restored where damaged and left in good condition.

PART 4.0 PAINTING SCHEDULE

4.1 GENERAL: Painting Systems shall be applied to surfaces as scheduled. All walls to be painted shall be plastered prior to painting. All under slabs to be painted shall have fair-faced concrete.

4.2 FILM THICKNESSES: As recommended by paint manufacturer for the paint specified, includes thickness in mils and number of coats.

4.3 SCHEDULE:

A. MASONRY AND CONCRETE

1. Interior and Exterior Surfaces

Textured Finish (flat, semi – gloss, gloss paint). Treat with concrete neutralizer.

Preparation : Skim coat (smooth finished)

Primer : Flat Latex White (2 Coats)

Putty (filler) : Masonry Putty

Top-Coat : Semi-gloss (interior walls), Gloss (exterior walls), Flat (ceiling); colors subject to Architect's Approval

C. METAL SURFACES

1. Gloss Finish (Alkyd Type) for G. I. Pipes, etc.

1st Coat : Metal Primer Zinc Chromate

2nd Coat : Glazing Putty

3rd Coat : Quick Dry Enamel

2. Gloss Finish (Epoxy type) for metal elements and doors, wrought iron grilles, W. I. railing, B.I. and G.I. pipe handrails

1st Coat : Epoxy Primer White

2nd Coat : Epoxy Enamel

3rd Coat : Epoxy Enamel

-----END OF SECTION-----

DIVISION 4.0 SPECIALTIES

SECTION 4.01 INSTALLATION OF SOLAR LIGHTS

PART 1.0 GENERAL

- 1.1 SCOPE/WORK INCLUDED: This section includes specifications on the installation of solar lights within around the perimeter fence.

- 1.3 QUALIFICATION OF WORKER: Only competent workmen, who have been thoroughly trained and experienced in the skills required and who are completely familiar with the materials involved and with the requirements of his work, shall be engaged.

PART 2.0 SPECIFICATIONS. Minimum Requirements for Solar Lights are as follows:

Led Solar Street Light 150W Daylight	
Wattage	150 Watts
Human Body Sensing	Without Built-in Motion Sensor
Body Materials	Aluminum Housing + Glass Cover
Dimension Lamp	490mm x 210mm x 70mm
Working Mode	Fully Automatic, Auto ON/OFF Dusk Dawn
Remote	W/Remote
IP Rating	IP 65
Warranty	3 Years
Luminaire	
Lumens	100lm/W
Led Chips	Led SMD Chips
CCT	6000k – 6500k / Daylight
Beam Angle	120deg
Solar Panel	
Solar Panel Type	Polycrystalline
Output Voltage	6VDC
Power	20 Watts
Dimension Panel	350mm x 350mm x 18mm
Battery	
Battery Type	Lithium Battery

Output Voltage	3.2 VDC
Battery Capacity	
Charging	6 – 8 Hrs, W/ Good Sunlight
Discharge Time	≤10hrs, 100-0% Brightness
Installation	
Mounting Accessories	Set With Arm and Solar Panel Bracket Only
Installation Height	Up to 6 – 10meters
Installation Space	Maximum of 15m

PART 3.0 INSTALLATION

- 3.1 GENERAL: Piping shall be installed according to the shop drawings, as recommended by the manufacturer, and as directed during installation, straight and as direct as possible, forming right angles or parallel lines with building walls/fence and other pipes, and neatly spaced. Before being placed in position, pipe and fittings shall be cleaned carefully.
- 3.2 INSTALLATION OF SCREW-JOINTED PIPING: All pipes shall be cut accurately according to measurements established by the contractor and shall be worked into place without springing or forcing. Proper provision shall be made for the expansion and contraction of all pipelines. Pipe and fittings shall be free from fins and burrs. Screw joints shall be made with a lubricant applied on the male threads only; threads shall be full cut and not more than three threads on the pipe shall remain exposed. All exposed ferrous pipe threads after being installed and tested shall be given one coat of zinc chromate and enamel paint.

PART 4.0 QUALITY ASSURANCE

- 4.1 TESTS: All defects disclosed by tests shall be rectified and the test repeated. All labor, materials and equipment used for tests shall be provided by the contractor.

PART 5.0 GUARANTEE

The contractor shall furnish to the Owner a written guarantee covering the satisfactory operations of the solar lights installation. This shall be for a period of one year after the date of acceptance. During this period, the contractor shall repair or replace any defective work and pay for any repair or replacement cost. All damages due to improper use or caused by the Owner or his representatives/employees shall be at the Owner's expense.

No materials to be installed without being inspected and approved by any of the engineers/architect and inspectorate team. All work to be undertaken must conform proper standards and specifications.

NOTE:

Site Visit/Inspection is a pre-requisite and must be submitted together with the bidding documents. Non-site inspection will be a ground for disqualification.

I hereby certify to comply with all the above requirements.

Name: _____

Legal Capacity: _____

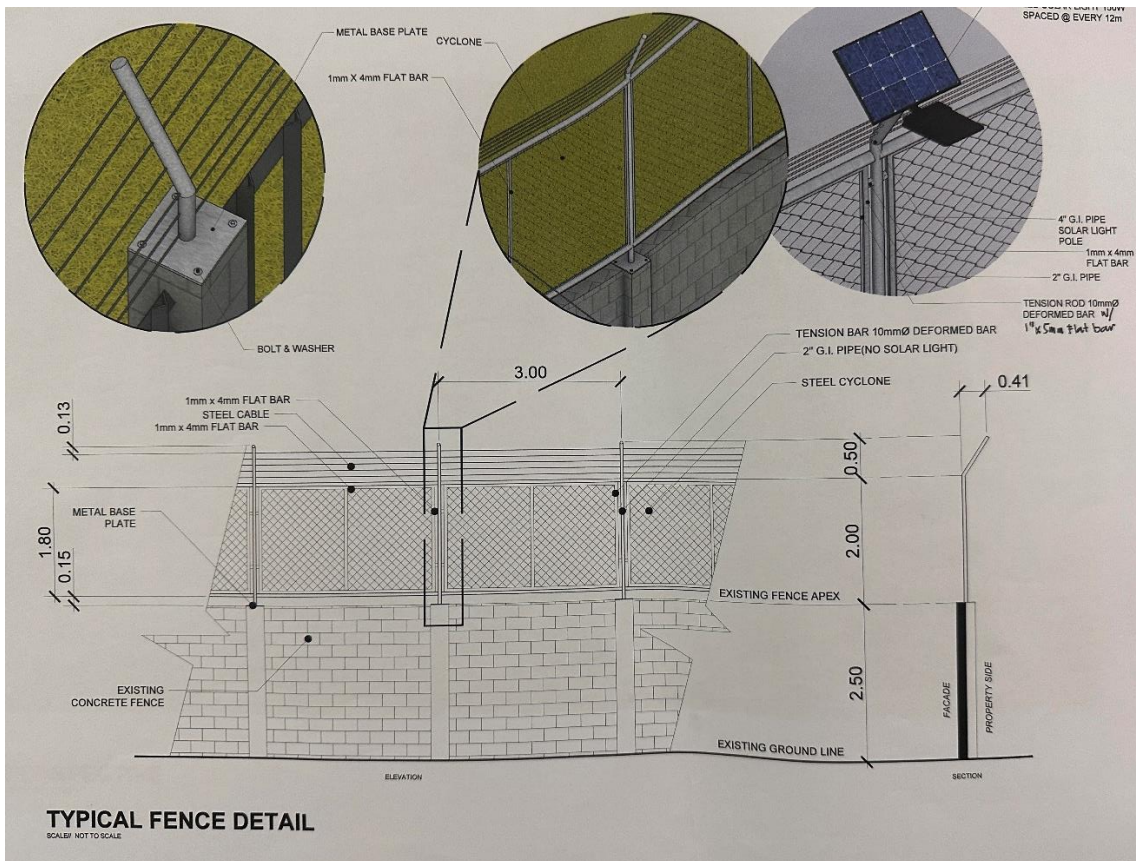
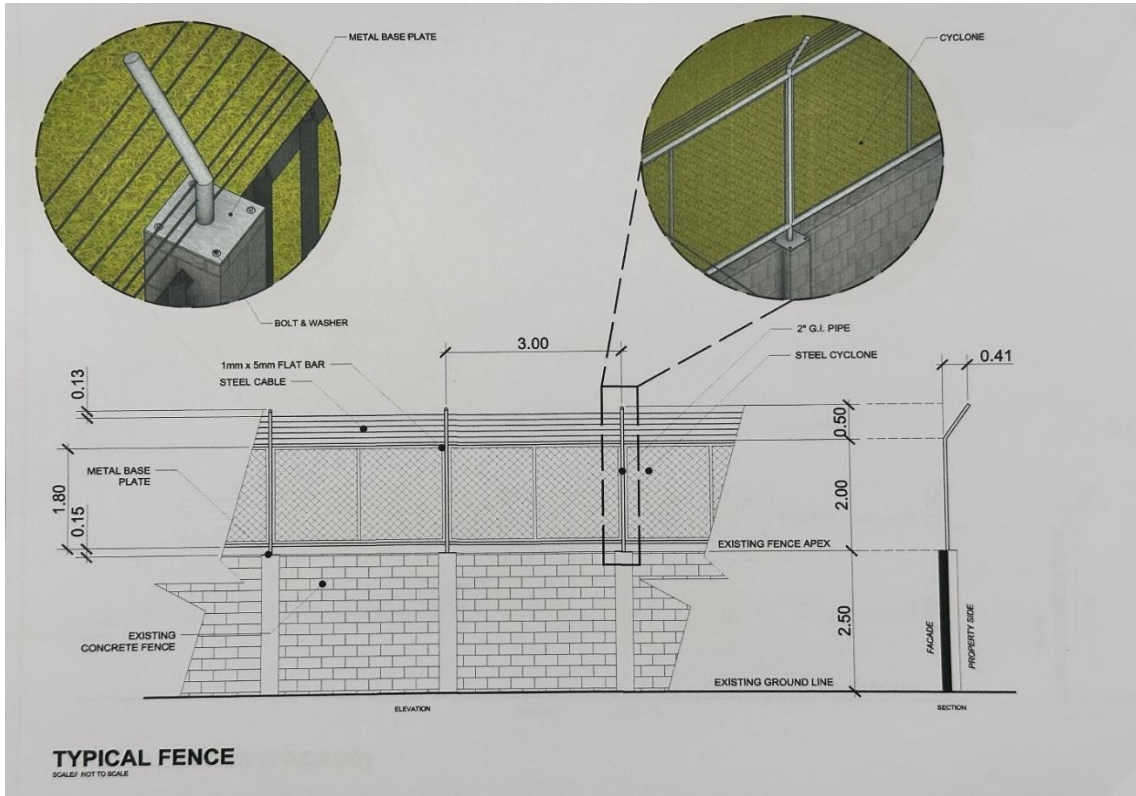
Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

Section VII. Drawings

Drawings



Section VIII. Bill of Quantities

Bill of Quantities

Name of Project:		Proposed Improvement of Perimeter Fence with Solar Lights for Regional Rehabilitation Center for Youth		Location: DSWD Field Office X - Brgy. Cahulugan, Gingoog City	
Total Project Cost:		PHP 2,499,722.61		Project Duration: 120 Calendar Days	
Source of Fund:				Mode of Procurement:	
Date:		June 26, 2024		Source of Manpower:	
Item No.	Item Description	Quantity	Unit	Unit Cost	Amount
1	Steel Frame Works and Concreting	405.00	l.m		
2	Supply and Installation of Solar Lights	32.00	sets		
3	Finishing Works	810.00	sq.m		-
A	Total Direct Cost (Material, Labor and Equipment)				-
B	General Requirements				-
C	Overhead, Contingencies & Miscellaneous Expenses (8% of A)				-
D	Contractor's Profit (10% of A)				-
E	Taxes (5% of A+B+C+D)				-
TOTAL PROJECT COST					-
GENERAL CONDITION AND REQUIREMENTS					
Project Description					
Improvement of perimeter fence of Regional Rehabilitation Center for Youth in Brgy. Cahulugan, Gingoog City					
Includes steel framing and concreting works with solar lights and accessories					
Finishing/ Plastering of inner wall (some areas)					

I hereby certify to comply with all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

Section IX. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary “pass/fail” criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

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; **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; **and**
- (d) Philippine Contractors Accreditation Board (PCAB) License; **or**
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; **and**
- (f) Project Requirements, which shall include the following:
 - a. Organizational chart for the contract to be bid;
 - 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;
 - c. Construction Schedule and S-Curve;
 - d. Manpower Schedule;
 - e. Construction Methods;
 - f. Equipment Utilization Schedule;
 - g. PERT/CPM;
 - h. 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;
- (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;

- (h) Certificate of Site Visit

Financial Documents

- (i) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

- (j) 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

- (k) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

- (l) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- (m) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- (n) Cash Flow by Quarter.

Section X. Bidding Forms

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 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 guidelines¹ 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.

¹ currently based on GPPB Resolution No. 09-2020

- 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: _____

Statement of All On-Going Government and Private Contracts, Including Contracts Awarded but Not Yet Started, Whether Similar or Not Similar in Nature and Complexity to the Contract to be Bid

Business Name: _____

Business Address: _____

A. Government

Nature of Contract (Project Title)	a. Owner's Name	Project Cost	Bidder's Role		a. Date Awarded	% of Accomplishment		Value of Outstanding Works (Undelivered Portion)
	b. Address		Description	%	b. Date Started	Planned	Actual	
	c. Contact Nos.				c. Target Date of Completion			
1	a.				a.			
	b.				b.			
	c.				c.			
2	a.				a.			
	b.				b.			
	c.				c.			

B. Private

Nature of Contract (Project Title)	a. Owner's Name	Project Cost	Bidder's Role		a. Date Awarded	% of Accomplishment		Value of Outstanding Works (Undelivered Portion)
	b. Address		Description	%	b. Date Started	Planned	Actual	
	c. Contact Nos.				c. Target Date of Completion			
1	a.				a.			
	b.				b.			
	c.				c.			
2	a.				a.			
	b.				b.			
	c.				c.			

Note: The following documents must be available upon request of the Bids and Award Committee (BAC) or designated Technical Working Group (TWG) during Post-Qualification to support this statement: (a) Contract or Purchase Order, (b) Official Receipt(s) or Sales Invoice or (c) User's Certificate of Acceptance/Completion

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

Statement of Single Largest Completed Contract (SLCC) ² Similar to the Contract to be Bid

Business Name: _____

Business Address: _____

Nature of Contract (Project Title)	a. Owner's Name	Project Cost	Bidder's Role		a. Date Awarded
	b. Address		Description	%	b. Date Started
	c. Contact Nos.				c. Date Completed
	a.				a.
	b.				b.
	c.				c.

Note: *The following documents must be attached to support this statement: (a) Official Receipt(s) or Sales Invoice or (b) User's Certificate of Acceptance/Completion*

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

² The Bidder must have completed, within the period specified in the Invitation to Bid and ITB Clause 5.2 of Section III. Bid Data Sheet, a single contract that is similar to the project to be bid, equivalent to a percentage (%) of the ABC specified in ITB Clause 5.2 of Section II. Instruction to Bidders.

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]

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. **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.**

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

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

