

BIDDING DOCUMENT FOR THE
LOT 1. SITE DEVELOPMENT AND CONSTRUCTION
OF RICE SEED PROCESSING FACILITY
(w/ INSTALLATION OF EQUIPMENT) AND
LOT 2. SITE DEVELOPMENT AND CONSTRUCTION
OF WAREHOUSE AND COLD STORAGE
(w/ INSTALLATION OF EQUIPMENT)
UNDER THE KOREAN MINISTRY OF
AGRICULTURE, FOOD, AND RURAL AFFAIRS
(MAFRA) and KOREA RURAL COMMUNITY
CORPORATION (KRC) THROUGH GLOBAL
AGRICULTURE POLICY INSTITUTE (GAPI) AND
NATURE E&T, INC. (NATURE)
FOR DA PHILRICE-CES
PB INFRA KRC-GAPI-Nature 23-03-01

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***Glossary of
Terms, Abbreviations, and Acronyms***

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GAPI – Global Agriculture Policy Institute, a Korean company contracted by KRC.

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])

KRC – Korea Rural Community Corporation, a Korean government funding agency.

LGUs – Local Government Units.

MAFRA – Ministry of Agriculture, Food and Rural Affairs.

NATURE – Nature E&T, Inc., a Korean company contracted also by KRC.

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 THE
Lot 1. SITE DEVELOPMENT AND CONSTRUCTION OF RICE SEED PROCESSING FACILITY
(w/ INSTALLATION OF EQUIPMENT) AND
Lot 2. SITE DEVELOPMENT AND CONSTRUCTION OF WAREHOUSE AND COLD STORAGE
(w/ INSTALLATION OF EQUIPMENT)
UNDER THE MINISTRY OF FOOD, AGRICULTURE AND RURAL AFFAIRS (MARFA)
FOR DA PHILRICE-CES
PB INFRA KRC-GAPI-NATURE 23-03-01

1. The Department of Agriculture, **Philippine Rice Research Institute – Central Experiment Station (DA PhilRice-CES)**, through the **2023 MAFRA and KRC Fund through GAPI and Nature** intends to apply the sum of *Thirty Million Five Hundred Fourteen Thousand One Hundred Eighty-Four Pesos Only (₱ 30,514,184.00)* for **LOT 1** and *Twenty-Two Million Two Hundred Thirty-Five Thousand One Hundred Eighty Five Pesos Only (₱ 22,235,185.00)* for **LOT 2** being the Approved Budget for the Contract (ABC) to payment under the contract. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The **DA PhilRice-CES** now invites contractors with PCAB license of at least **Category C & D/Small B** for the above Procurement Project. Completion of the Works is required *Three Hundred Calendar Days (300 CD) for Lot 1 and One Hundred Eighty Calendar Days (180 CD) for Lot 2*. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Prospective Bidders may obtain further information from **DA PhilRice-CES** through telecommunication or video conferencing during office hours and inspect the Bidding Documents at the DA PhilRice website. Kindly refer to the schedule below.
5. A complete set of Bidding Documents may be acquired by interested bidders from the address and websites below and upon payment of the applicable fee for the Bidding Documents as follows:

Lot 1. Site Development and Construction of Rice Seed Processing Facility with Installation of Equipment	₱ 25,000.00
Lot 2. Site Development and Construction of Warehouse and Cold Storage with Installation of Equipment	₱ 25,000.00

- It may also be downloaded free of charge from the **DA PhilRice-CES** website and bidders shall pay the applicable fee for the Bidding Documents upon submission of bid proposals or not later than the deadline of submission of their bids.
- Bidders are encouraged to download the Bidding Documents through the DA PhilRice website and pay through bank. Please coordinate with the BAC Secretariat through the email address and contact number given below for the bank details and procedures.
6. The **DA PhilRice-CES** will hold an online/virtual Pre-Bid Conference on the date specified below which shall be open to all prospective bidders. **Prospective bidders need to signify their intention to participate by sending an email to the address given below.** A Personal Meeting ID will be sent through SMS or email for each participant at least one day before the event.
 7. Bids must be duly received by the BAC Secretariat at the address below one (1) day before the opening of bids through manual submission at the office address as indicated below.
 8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 15.

9. Face to face and online/virtual Bid opening shall be held on the given schedule below and bids will be opened in the presence of the bidders’ representatives (via video conferencing). Late bids shall not be accepted.
10. The **DA PhilRice-CES** 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.
11. Please refer to the following schedule of activities:

Activity	Date	Remarks
Acceptance of Queries through Telephone or Video Call with the BAC Secretariat	August 4-21, 2023 (except Saturdays, Sundays and Holidays) 8:00AM - 5:00PM	Queries on the bid documents only. Queries on the technical specifications should be in formal writing sent through email or fax.
Availability of Bid Documents and Acceptance of Payment	August 4-21, 2023 (except Saturdays, Sundays and Holidays) 8:00AM - 5:00PM	Downloadable through DA PhilRice website and can be requested through email. Please call BAC Secretariat for the procedures of online payment
Pre-Bid Conference (Virtual/Online)	August 9, 2023 Meeting Proper: 2:00PM	Interested bidders shall signify intention to bid through email. A Personal Meeting ID will be sent through email to confirmed participants.
Deadline for the Submission of Bids	On or before August 22, 2023 11:00 AM	Through personal delivery at the designated drop off point. Can also be sent through courier.
Bid Opening (Face to Face & Virtual/Online)	August 22, 2023 Meeting Proper: 2:00 PM	A Personal Meeting ID will be sent to participants who submitted bid proposal on time.

12. For further information, please refer to:

THE BAC SECRETARIAT
 Procurement Management Division
 Philippine Rice Research Institute
 Maligaya, Science City of Munoz, Nueva Ecija
 Telefax: (044) 456-0285 (661)
 Mobile No. 0999-2248705
 E-mail: bacsecretariat2@philrice.gov.ph

You may visit the following websites:
 For downloading of Bidding Documents:
www.philrice.gov.ph
 Date: August 4, 2023


JONATHAN M. NIONES
 Vice Chairperson

NOTICE/ANNOUNCEMENT

DA DOES NOT CONDONE ANY FORM OF SOLICITATION ON ANY PROSPECTIVE WINNING AND LOSING BIDDERS BY ANY OF OUR STAFF/EMPLOYEES OR ANY OTHER PARTY. ANY SORT OF THIS KIND SHALL BE REPORTED IMMEDIATELY TO THE OFFICE OF THE SECRETARY OR THE NATIONAL BUREAU OF INVESTIGATION (NBI) FOR ENTRAPMENT AND PROPER INVESTIGATION.

Section II. Instructions to Bidders

Instruction to Bidders

1. Scope of Bid

The DA PhilRice-CES invites Bids for **Lot 1. Site Development and Construction of Rice Seed Processing Facility (w/ Installation of Equipment)** and **Lot 2. Site Development and Construction of Warehouse with Cold Storage (w/ Installation of Equipment)** under MAFRA and KRC through GAPI and Nature for DA PhilRice-CES with Project Identification Number PB Infra KRC-GAPI-Nature 23-03-01.

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 **Republic of Korea**, being the source of funding as indicated below for **2023 MAFRA and KRC Fund through the GAPI and Nature** in the amount of *Thirty Million Five Hundred Fourteen Thousand One Hundred Eighty-Four Pesos Only (₱ 30,514,184.00)* for **LOT 1** and *Twenty-Two Million Two Hundred Thirty-Five Thousand One Hundred Eighty-Five Pesos Only (₱ 22,235,185.00)* for **LOT 2**.

2.2. The source of funding is:

a. The **2023 MAFRA-KRC Korean Government Fund through GAPI and Nature**

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:

- a. Subcontracting is not allowed.

- 7.1. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

8. **Pre-Bid Conference**

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address **see Schedule of activities above** and/or through videoconferencing/webcasting} as indicated in paragraph 11 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 PCAB License is required, and in case of joint ventures, a valid special PCAB License, 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:*

- a. 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 for **120 calendar days from the date of 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.

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 11 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 11 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 16 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**

BOND of the Winning Bidder - The specific details regarding bond and/or insurance coverage will be decided based on mutual agreement at the time of contract signing.

Section III. Bid Data Sheet

ITB Clause	
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: General Site Development and Construction
7.1	<i>No further instructions.</i>
10.3	<i>A valid PCAB license is required for this project of at least Category C & D/Small B</i>
10.4	The minimum work experience requirements for key personnel are the following:
	<u>Key Personnel</u> <u>General Experience</u> <u>Relevant Experience</u>
	Project Manager Project Management 5 years
	Project Engineer General Construction 5 years
	Materials Engineer Materials Testing 5 years
	In-house Health & Occupational Health
	Safety Officer and Safety Standard 5 years
	Electrical Engineer General Construction 5 years
	Mechanical Engineer General Construction 10 years
	(Consultant)
	Foreman General Construction 10 years
	Welder General Construction 5 years
	Mason/Carpenter General Construction 5 years
	Steelman General Construction 5 years
	10.5
<u>Power Tools/Equipment</u> <u>Capacity (min)</u> <u>Number of Units</u>	
Concrete Vibrator	

	One-Bagger Mixer	2
	Excavator/Backhoe	1 cu.m. bucket 1
	<i>The following (it can be Owned or Leased):</i>	
	Transit Mixer	3
	Road Roller	1
	Road Grader	1
	Water Truck	1
	Road Roller/ Road Compactor	1
	Telescopic Crane	
	(Telescopic-Mounted or Mobile)	1
12	<i>No further instructions.</i>	
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>Lot 1. Site Development and Construction of Rice Seed Processing Facility (w/ Installation of Equipment)</p> <p>a. The amount of not less than Six Hundred Ten Thousand Two Hundred Eighty Three Pesos and 68/100 Only (₱ 610,283.68) Two percent (2%) of ABC, 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 Million Five Hundred Twenty Five Thousand Seven Hundred Nine Pesos and 20/100 only (₱1,525,709.20). Five percent (5%) of ABC, if bid security is in Surety Bond.</p> <p>Lot 2. Site Development and Construction of Warehouse and Cold Storage (w/ Installation of Equipment)</p> <p>a. The amount of not less than Four Hundred Forty Four Thousand Seven Hundred Three Pesos and 70/100 Only (₱ 444,703.70) Two percent (2%) of ABC, 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 Million One Hundred Eleven Thousand Seven Hundred Fifty Nine Pesos and 25/100 only (₱ 1,111,759.25). Five percent (5%) of ABC, if bid security is in Surety Bond.</p>	
19.2	Partial bids are not allowed:	
20	<p>Latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (EFPS) for the last six months</p> <p>VAT Returns (BIR Form 2550Q) or Percentage Tax Return (BIR Form 2551Q) with proof of payment</p>	
21	<p>Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as;</p> <ol style="list-style-type: none"> 1. Construction schedule and S-curve, 2. PERT/CPM 3. Manpower schedule, 4. Construction methods, 5. Equipment utilization schedule, 6. Construction safety and health program approved by the DOLE, and other acceptable tools of project scheduling. 	

Section IV. General Conditions of Contract

1. Scope of Contract

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

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

2. Sectional Completion of Works

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

3. Possession of Site

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

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

4. The Contractor's Obligations

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

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

5. Performance Security

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

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm,

partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

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

7. Warranty

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

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

8. Liability of the Contractor

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

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

9. Termination for Other Causes

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

10. Dayworks

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

11. Program of Work

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

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

12. Instructions, Inspections and Audits

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

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

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

15. Operating and Maintenance Manuals

- 15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC**.
- 15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	<i>The intended completion date is</i> Lot 1. Three Hundred (300) calendar days Lot 2. One Hundred Eighty (180) calendar days
4.1	<i>No further instructions</i>
6	<i>No further instructions</i>
7.2	<i>The Warranty against Structural Defects: [In case of semi-permanent structures, such as buildings of types 1, 2, and 3 as classified under the National Building Code of the Philippines, concrete/asphalt roads, concrete river control, drainage, irrigation lined canals, river landing, deep wells, rock causeway, pedestrian overpass, and other similar semi-permanent structures:] Five (5) years.</i>
10	a. Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within seven (7) days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is 1% of the amount of progress billing
13	The amount of the advance payment is not more than 15% of the total contract price.
14	Materials and equipment delivered on the site but not completely put in place shall not be included for payment.
15.1	The date by which operating and maintenance manuals are required upon project completion. The date by which "as built" drawings are required upon project completion.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is Fifteen Thousand Pesos Only (₱ 15,000.00). Close-Out Report is required upon completion which includes the following: As-Built Plans (3 copies A3-print and CD for AutoCAD file); Materials Book (including all Materials Sample Approval forms); Manuals/ Warranty Certificates for equipment/ appliances (if applicable); Pictures of Work Progress (in print and in CD for electronic copy) Refer to Section VI for complete details of the Close-Out Report.

Section VI. Specifications

A. GENERAL REQUIREMENTS

A. SUMMARY OF WORKS

1. **General** - All provisions of the “General Conditions of Contract” shall form part of this section. All general requirements contained in the Bidding Documents and other Contract Documents shall likewise apply.
2. **Scope** - The work includes the furnishing of all materials, labor, tools and equipment and the performance of all operations necessary for the **Lot 1. Site Development and Construction of Rice Seed Processing Facility (w/ Installation of Equipment)** and **Lot 2. Site Development and Construction of Warehouse and Cold Storage (w/ Installation of Equipment)** under **MAFRA and KRC through GAPI and Nature E&T, Inc. for DA PhilRice-CES** all in accordance with the Plans and Specifications, and subject to the terms and conditions of the Contract Documents.
3. **Location** - The proposed work is located at the **DA PhilRice-CES, Science City of Muñoz, Nueva Ecija**

B. COORDINATION

Supervision

1. The contractor must employ only **competent and efficient key personnel** experienced in their specialization.
2. Submission of the **complete list of ALL personnel/laborers** employed is **required** before commencement of Works.
3. All personnel/laborers shall wear **proper uniform and IDs** when entering and when within DA PhilRice CES Campus.

2. Construction Safety and Health/Safety Management

The contractor shall put up and continuously maintain **adequate safety measures** that shall prevent undue loss, damages and injury on workers, or loss of properties.

The contractor shall, at his own expense, furnish his workers with protective equipment for eyes, face, hands and feet, lifeline, safety belt/harness, protective shields and barriers whenever necessary by reason of the hazardous work process or environment, chemical or radiological or other mechanical irritants of hazards capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical agent.

C. REGULATORY AND OTHER REQUIREMENTS

Other Requirements

All requirements described in detail in the General Requirements shall be provided and shall be the sole responsibility of the Contractor in the execution of the work. These are, among others:

1. Permits and Fees
2. Materials Testing
3. Project/Technical Meetings and Conferences

The Contractor and others working under his jurisdiction shall perform work in compliance with the rules and regulations and ordinances of any kind required by the governmental authority or other agency having jurisdiction over his work.

He shall also comply with the Integrated Management System (IMS) Policy of DA PhilRice.

D. PROJECT/TECHNICAL MEETINGS

1. Pre-Construction Conferences

A pre-construction meeting between the Implementing Office, end user, project engineer and other representatives designated by DA PhilRice, and the Contractor shall be held at the site prior to the commencement of Works.

This meeting shall be for the purpose of:

- a. resolving current problems;
- b. further orienting the Contractor to the requirements of the Drawings and Specifications;
- c. informing the Contractor of the Implementing Office's responsibility to DA PhilRice for the supervision; and
- d. working out with the Contractor a general schedule of supervision

2. Progress Meetings

The Contractor shall meet with the Implementing Office weekly or as required to verify the progress of the work.

E. SUBMITTALS

1. Construction Schedules

The Contractor shall contact the Implementing Office before covering up any work so that proper inspection may be made.

2. Network Analysis Schedules

The Contractor shall prepare a PERT-CPM Construction Schedule to indicate the following:

- a. All activities necessary to complete the project;
- b. Monthly value of each activity.

3. Shop Drawings, Product Data and Samples

The Contractor shall review, stamp with his approval, and submit shop drawings and submittals for approval of the Implementing Office for conformance of the design concept and information given in the Contract Documents. **The work shall be in accordance with the Drawings and Specifications.**

Where specified or required, the Contractor shall submit samples to the *end user/project engineer with the bill of materials as reference*, together with specification material, affidavits and other documentation as may be required by the *DA PhilRice*. **It is the Contractor's specific responsibility to ascertain that the samples submitted have been checked and approved.** The cost of the samples together with the transportation, delivery and any other costs shall be borne by the Contractor.

Where samples are specifically required to be submitted for approval, **no work involving the samples/materials shall proceed until written approval has been obtained.**

4. Close-Out Report

Upon completion of the Works the Contractor shall furnish DA PhilRice the required **Close-Out Report** as indicated in SCC Clause 51.2 which shall be a **prerequisite for the processing of the final payment.**

The Close-Out Report shall include, but not limited to, the following:

- a. "AS-BUILT" Plans - three (3) copies in print (A3-size), and CD for AutoCAD file;
- b. Materials Book containing Materials Sample Approval forms, and list of all materials used, with corresponding pictures and description;
- c. All Operating and Maintenance Manuals and Warranty Certificates for equipment/appliances, if applicable;
- d. Pictures of Work Progress (in print and in CD for electronic copy);
- e. Other compiled pertinent documents such as notices issued by DA PhilRice or requests forwarded by the Contractor, etc.

The Contractor shall produce and submit the required Close-Out Report, at his own expense, for approval of the institute.

F. CLEANING

Demobilization and Clean-Up

The Contractor shall be responsible for the **general cleaning and demobilization of all tools, surplus materials and equipment** used in the execution of the work.

II. SITEWORK

A. SITE PREPARATION

General

- a. **Scope** - This section includes labor, materials, equipment, plant and other facilities and the satisfactory performance of all work necessary to complete clearing, grubbing, stripping, and all other site preparation works.
 - b. **Protection**
 - **Workmen:** Provide adequate measures to protect workmen and public in the site.
 - **Surrounding Area:** Protect existing buildings and other structures from damage, and repair damage caused by this work at no additional cost to DA PhilRice.
 - **Utility Lines:** Existing utility lines indicated or locations of which are made known to the Contractor prior to excavation, and that which are indicated to be retained, as well as utility lines constructed during excavation operations, shall be protected from damage during excavating and backfilling, and if damaged, shall be repaired at no extra cost. Site survey shall be conducted by the Contractor to acquaint with existing utility lines. Proper measures shall be taken and immediate information forwarded to the Implementing Office when utility lines are encountered within the area of operation.
- Where utility lines are encountered within the area of operations, the Contractor shall notify the Implementing Office in ample time for the necessary measures to be taken interruption of the service.

- **Survey and Grades:** The drawings indicate layout of grounds and building and existing and final site grades. Contractor shall be responsible for laying out site and buildings and setting stakes in complete conformity with the drawings.
- **Disposal of Cleared Materials:** Dismantled materials and other refuse resulting from the clearing operations shall be disposed of by removing from the site at the Contractor's expense. Materials shall be disposed outside the limits of the project site

III. CONCRETE AND REINFORCED CONCRETE

A. GENERAL

Unless otherwise specified herein, concrete works shall conform to the requirements of the ACI Building Code. Full cooperation shall be given other trades to install embedded items. Provisions shall be made for setting items not placed in the forms. Before concrete is placed, embedded items shall have been inspected and tested for concrete aggregates and other materials shall have been done.

B. MATERIALS

1. Cement for the concrete shall conform to the requirements of specifications for Portland Cement (ASTM C-150) (Union, Republic, Pacific Cement only).
2. Water used in mixing concrete shall be clean and free from other injurious amounts of oils, acids, alkaline, organic materials or other substances that may be deleterious to concrete or steel.
3. **Fine Aggregates/Sand shall consist of hard, tough, durable, uncoated,** and clean particles, or S-1. The shape of the particles shall be generally rounded or cubicle and reasonably free from flat or elongated particles. The stipulated percentages of fines in the sand shall be obtained either by the processing of natural sand or by the production of a suitably graded manufactured sand. Signs of more than 10% soil content for every delivery shall be rejected.
4. Coarse Aggregates shall consist of WASHED AGGREGATES. Coarse aggregates shall consist of hard, tough, durable, clean particles. The size of coarse aggregates to be used in the various parts of the work shall be ¾” for all concreting work.
5. Gravel base for footings, footing tie beams, shall be compacted and could be bigger (1” and above) in size.

Gravel bedding shall be 0.05 m. thick, and 1” in size.

C. PROPORTIONING AND MIXING

1. **Proportions** of all materials entering into the concrete shall be as follows:

Mix	Cement	Sand	Gravel
Class AA	1	2	3
Class A	1	2	4
Class B	1	2-1/2	5
Class C	1	3	6

2. **Class of Concrete** – unless otherwise specified/indicated in the plans, concrete mix shall be Class A, and shall have a 28-day strength of 3000 psi, for all concrete work (with “fly ash” additive).
3. **Mixing** – concrete shall be machine mixed. Mixing shall begin within 30 minutes after the cement has been added to the aggregates. In the absence of

a concrete mixer, manual mixing is allowed, provided sampling shall be done 3 days before pouring (to attain good result).

4. **Slump Test & Cylinder Samples.** Slump test shall be conducted before pouring of mixed concrete. Use standard slump mold, taken in 3 layers, rodded separately by a 6 mm rod 25 times. Slump should be within 15 cm (max) and 7.5 cm (min). Concrete samples in cylinders shall be taken for every batch of concrete mix (footing, columns, beams, and slabs) taken in three (3) samples each. Sampling shall be taken by trained engineers and subsequently cured and dried properly (in a moist atmosphere at not more than 21° C to attain accurate results). Test should be done at 7 and 28 day-period.

D. FORMS

1. **General** – Forms shall be used wherever necessary to confine the concrete and shape it to the required lines, or to prevent the concrete of contamination with materials caving from the adjacent, excavated surfaces. Forms shall have sufficient strength to withstand the pressure resulting from placement of the concrete, and shall be maintained rigidly in correct position. Forms shall be sufficiently tight to prevent loss of mortar from the concrete. Nine (9) mm form grade plywood is recommended for all forming works to prevent defects during concrete pouring.
2. **Cleaning and Oiling of Forms.** Before placing the concrete, the contact surfaces of the form shall be cleansed from encrustations of mortar, the grout of other foreign materials, and shall be coated with a commercial form of oil that will effectively prevent sticking and will not stain the concrete surfaces.
3. **Removal of Forms.** Forms shall be removed in a manner, which will prevent damage to the concrete. Forms shall not be removed without approval from the Owner. Any repair to the surface imperfections shall be performed at once and airing shall be started as soon as the surface is sufficiently hard to prevent further damage.

E. PLACING REINFORCEMENT

Steel reinforcement shall be provided as indicated, together with all necessary wire ties, chairs, spacers, supported and other devices necessary to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from loose, flaky rust and scale, oil, grease, clay, and other coating and foreign substances that would reduce or destroy its bond with concrete.

As a rule, all concrete hollow blocks partitions/walls shall be reinforced with a minimum size of 10 mm deformed bars spaced at 600 mm on center both ways. All reinforcement shall be placed accurately and secured in place by use of metal or concrete supports, spacers, and ties. Such supports shall be of sufficient strength to maintain the operation, or contribute in any way, to the discoloration or deterioration of the concrete. All structural steel support shall conform to the approved plans. Design shown in the bid bulletins shall prevail over those of the previously issued original plans.

F. CONVEYING AND PLACING CONCRETE

1. **Conveying Concrete.** Concrete shall be conveyed from mixer to forms as rapidly as practicable by methods, which will prevent segregation, or loss of ingredients. There will be no vertical drop greater than 1.5 meters except where suitable equipment is provided to prevent segregation and where specifically authorized.
2. **Placing.** Placing concrete shall be worked readily into the corners and angles

of the forms and around all reinforcement and embedded items without permitting the material to segregate. Concrete shall be deposited as close as possible to its final position in the forms so that flow within the mass does not exceed two (2) meters and consequent segregation is reduced to a minimum near forms or embedded items, or elsewhere as directed. The discharge shall be so controlled that the concrete may be effectively compacted into horizontal layers not exceeding 30 centimeters in depth within the maximum lateral movement specified.

3. **Time Interval between Mixing and Placing.** Concrete shall be placed before initial set has occurred and before it has contained its water content for more than 45 minutes.
4. **Consolidation of Concrete.** Concrete shall be consolidated with the aid of mechanical vibrating equipment and supplemented by hand spading and tamping. Vibrators shall not be inserted into lower course that have commenced initial set; and reinforcement embedded in concrete beginning to set or already set shall not be disturbed by vibrators. Consolidation around major embedded parts shall be by hand spading, and tamping, and vibrators shall not be used.
5. **Placing Concrete.** Through Reinforcement. In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. On the bottom of beams and slabs, where the congestion of steel near the form makes placing difficult, a layer of mortar of the same cement-sand ratios as used in concrete shall be first deposited to cover the surface.
6. During the pouring of concrete, the Owner's Representatives shall be present.

G. CURING

1. **General.** All concrete shall be moist cured for a period not less than 7 consecutive days by an approved method or combination applicable to local conditions.
2. **Moist curing.** The surface of the concrete shall be kept continuously wet by covering with burlap, plastic, or other approved materials thoroughly saturated with water and covering wet spraying or intermittent hosing.

H. FINISHING

1. Concrete surfaces shall be plastered unless otherwise indicated. Exposed concrete surfaces shall be formed with plywood, and after removal of forms, the surfaces shall be smooth, true to line, and shall produce correct appearance except for minor defects which can be easily corrected.
2. **Concrete Slabs on Fill.** Concrete slabs on fill shall be laid on a prepared foundation consisting of sub grade and granular fill with thickness equal to the thickness of overlaying slab except as otherwise indicated.

I. POURING PERMIT REQUIRED

All concrete pouring shall be approved by the project engineer/Implementing Office. The Contractor must accomplish the prescribed form indicating the details of the pouring, date, time, duration, list of manpower, engineer-in-charge, psi requirement, quantity and position of rebars, etc. Pouring permit must be approved by the Project Engineer before any pouring activity is made. No permit, no pouring.

IV. STEEL/STEEL WORKS & REINFORCEMENTS

1. **Markings.** Reinforcing steel bars to be used for DA PhilRice Projects shall bear the distinctive markings identifying the manufacturer by their initials, bar size number, including the type of steel such as:

N	= for Billet
A	= for Axial
R	= for rail steel

2. **Reinforcing Bars** shall conform to the requirements of the ASTM standard specifications for Billet Steel Bars for concrete reinforcement (A15-625) and to specifications for minimum requirements for the deformed steel bars for concrete reinforcement (A 305-56).

All secondary ties such, as stirrups, spirals and inserts may be plain bars. The main reinforcing bars shall be as follows:

No. 3 (3/8") 10mm	(275 MPa) 40,000 psi min. yield strength
No. 4 (1/2") 12mm	(275 MPa) 40,000 psi min. yield strength
No. 5 (5/8") 16mm	(414 MPa) 60,000 psi min. yield strength
No. 6 (3/8") 20mm	- do -
No. 7 (7/8") 22mm	- do -
No. 8 (1") 25mm	- do -

3. **Bar Spacing.** The ACI Code on bar spacing specifically provides that:

- a. The minimum clear distances between the adjacent steel bars shall not be less than the normal diameter of the bars or 25 mm for column. This requirement was increased to 1-1/2 bar diameter or 4 centimeters.
- b. Where beam reinforcements are placed in 2 or more layers, the clear distance between layers must not be less than 25 mm or 1 inch and the bars in the upper layer should be placed directly above those in the bottom layers.
- c. In walls and slabs, other than the concrete joist construction, the principal reinforcement shall be spaced not farther apart than three times the wall or slab thickness, nor more than 45 cm.
- d. The clear spacing between spirals shall not exceed 7.5 centimeters or less than 25 cm having a minimum diameter of 10 mm. Spiral splices shall be 48 bar diameter minimum but not less than 30 centimeters or welded. Lateral ties shall be at least 10 mm spaced not to exceed 16 times the longitudinal bar diameter or 48 ties bar diameter or the least dimension of the column.
- e. Shrinkage and temperature reinforcement shall not be placed farther apart than 5 times the slab thickness nor more than 45 cm.

4. **Minimum Covering of Bars**

- a. For concrete slabs permanently in contact with the earth: maximum of 80mm; minimum of 75mm.

b. Exposed to earth or weather: maximum of 50mm, minimum of 40mm.

c. Not exposed to weather nor in contact with the ground:

Slab, walls, and joists – maximum 40mm, minimum 20mm;

Beams, girders, and columns – minimum 40mm.

5. Number of Reinforcements

Refer to the structural schedule of reinforcements, schedule of beams, footings, columns, and slabs.

As a rule, the ground floor concrete slab shall be reinforced with 10 mm - deformed bars spaced at 450 mm on center both ways. It shall be connected to the walls with 10 mm dowels spaced at 600 mm on center.

6. Materials Testing

All structural steel reinforcement shall be taken every batch of delivery and shall be subject to tensile strength by Government Testing Laboratories or from private testing laboratories (Geotechniks, etc.) accredited by the DPWH.

Steel bars must pass the standard test before any steel works shall be commenced. All billings submitted by the Contractor for all civil works must be accompanied by a certificate of laboratory test for all structural steel, with passing mark.

V. METAL WORKS

A. SCOPE of WORK

The work consists of furnishing of all materials and labor, tools and equipment, and all necessary services to complete all structural steel works for the footings and columns, roof framings, structural web beams, and other reinforcements.

B. MATERIALS and WORKMANSHIP

1. Certified mill test reports or certified reports of tests made by the fabricators in accordance with ASTM A6 and the governing specifications shall constitute sufficient evidence of conformity with ASTM specifications. Additionally, the fabricator shall, if requested, provide an affidavit stating that the structural steel furnished meets the requirements of the grade specified.
2. Unidentified steel, if free from surface imperfections, may be used for parts of minor importance, or for unimportant details, where the precise physical properties of the steel and its weld ability would not affect the strength of the structure.
3. Other Metals. Galvanized Iron treated pipes shall conform to standard specifications and shall bear the manufacturer's mill test report.
4. Filler Metal for Welding. Welding electrodes for manual shielded metal arc welding shall conform to the Specification for Mild Steel Covered Arc Welding Electrodes, AWS A5.1, latest edition, or the Specification for Low-Alloy Steel Covered Arc-Welding Electrodes, AWS A5.5, latest edition. Bare electrodes and granular flux used in the submerged-arc process shall conform to F60 or F70 AWS-flux classifications of the Specification for Bars Mild Steel Electrodes and Fluxes for Submerged Arc Welding, AWS A5.17, latest edition.
5. All materials shall conform to the requirement in terms of size, mill test reports

and quality test certificate issued by “Geotechniks” and other material testing laboratories accredited by the Bureau of Standards and the DPWH. Only certified welders shall perform all welding works. A certified welder’s certificate shall be presented to the Owner’s Representative for approval before welding works shall commence.

6. All metal and steel supplies shall be stored in elevated platforms, and covered to protect the material from rain and other materials/liquids, which may cause rust and corrosion.
7. All metal parts shall be properly cleaned and rough welding marks must be removed by grinding to remove rough and uneven surfaces. Primer painting shall follow using epoxy paint.

VI. CARPENTRY

A. ROUGH CARPENTRY

1. General

- a. **Scope** - This section includes all labor, materials and equipment and satisfactory performance of all operations necessary to complete rough carpentry, bracing and framing works as indicated in drawings and these specifications.

Include in the work, plates, straps, joints, hangers, rods, dowels, rough hardware, fasteners and other miscellaneous iron and steel items pertinent to rough carpentry work.

- b. **Storage and Protection** - Stack framing lumber and plywood to ensure against deformation and maintain proper ventilation. Protect lumber and plywood from dampness and other elements. Lumber in contact with concrete or masonry shall be coated with approved preservative.

c. General Requirements

- **Quality of Lumber:** Use lumber of best grade available for the respective kinds for various parts of work. Lumber must be well-seasoned, thoroughly dry and free from loose or unsound knots, cups, shakes and other imperfections.
- **Substitution of Lumber:** Written approval from the Implementing Office is required in substituting the kind of lumber specified on plans. **Substitution made without prior approval will be rejected, removed and changed at the Contractor’s expense.**

2. Products

- a. **Lumber** - Use as specified on plans/drawings.

b. Fasteners

- **Nails** - Use locally manufactured common wire nails, smooth shank and zinc-coated.
- **Screws** - Use the best available commercial quality, brass or chromium plated.
- **Metal Anchors** - Use as indicated in the plans.

3. Execution

Installation - Framing shall be cut square on bearings, closely fitted accurately set to required lines and levels and rigidly secured in place.

B. FINISHING CARPENTRY

1. General

a. Scope - This section includes all labor, materials, equipment and satisfactory performance of all operations necessary to complete all finishing carpentry and millwork indicated on plans and specifications.

b. General Requirements

- **Delivery and Storage:** Deliver materials to site in undamaged condition. Stack lumber and millwork to ensure proper ventilation and drainage. Protect materials against dampness during and after delivery. Store under cover in well-ventilated enclosure, not exposed to extreme changes of temperature and humidity. Do not store finished lumber and millwork in buildings until concrete, masonry and plaster are dry.
- **Sizes and Pattern:** Work lumber to pattern or shapes indicated. Shaped material shall conform to the standard patterns indicated in current grading rules for the species. Coordinate work with all other related trades.

2. Products

Lumber, plywood/plyboard used shall be **as indicated in the plans/drawings.**

3. Execution

a. Workmanship: All wood finish and millwork panel door shall be true to details, clean and sharply defined. Panels must be set to allow for free movement in case of swelling and shrinkage. Means of fastening various parts together shall be concealed.

b. Finish:

Mill, fabricate and erect interior finish as indicated on the drawings. Machine-sand at the mill and hand-sand smooth at the job site.

Interior trim set against concrete, masonry or wood shall be separated with six (6) millimeters (1/4 inch) stone cut joints.

Intersecting plywood veneers or plywood panels shall be finished with a corner trim of wood with same species and finish as the plywood.

Make joints tight and in a manner to conceal shrinkage. Secure trim with fine finishing nails, screws or glue where required.

Set nails for putty stopping.

Window and door trim shall be single length.

Miter mouldings at corners, cope at angles.

c. Wood Door Jambs and Heads: Set door frames plumb and level and brace until built-in.

Anchor wood frames to masonry with approved metal anchors on each side of the jamb. Place top and bottom anchors 20 centimeters (8 inches) from head to floor.

- c. **Hardware Installation:** Accurately fit and install all finished hardware items required. If surface-applied hardware is fitted and applied before painting, remove all such item, except burrs, and re-install after painting is complete.

VII. DOORS AND WINDOWS

A. GENERAL

- 1. **Scope** - This section includes all labor, materials, equipment and the performance of all operations necessary to complete fabrication and installation of all doors and windows as indicated on drawings and specifications.
- 2. **Submittals**
 - a. **Shop Drawings:** Before placing orders and start of fabrication and when called for by the Implementing Office, the Contractor shall submit to the Implementing Office for approval, shop drawings of all wooden doors and windows including details of section and hardware.
 - b. **Cuts and Samples:** Furnish for approval, cuts, descriptive material and samples showing each type of door and window included. Show sizes, thickness, construction, methods of assembly, sticking and all other necessary information.
- 3. **General Requirements**
 - a. **Storage and Protection:** Protect doors, windows and frames against damage and dampness. Store them under cover in a well-ventilated place where they will not be exposed to extreme changes in temperature and humidity. Do not store doors, windows and frames in any place under construction until concrete, masonry work and plaster are dry. Adequately protect doors from scratches and other stains with heavy building paper.
 - b. **Designs, Sizes, and Thickness:** Use door and window designs, sizes and thickness as indicated or scheduled. Wood doors shall have an overall thickness of 50 mm unless otherwise specified by the Implementing Office.

B. PRODUCTS

Refer to the **Schedule of Doors and Windows** for materials to be used

C. HARDWARE

- 1. **General**
 - a. **Scope** – This section includes all materials, labor, equipment and performance of all operations necessary to complete furnish and installation of all building hardware required to:
 - ensure rigidity of joints/connections of the different parts of the structure; and
 - equip in a satisfactory operating condition parts of the structure such as doors, windows, cabinets, lockers and other similar operating parts as indicated in the plans/drawings

- b. **Submittals** – The Contractor shall submit all necessary information to the Implementing Office prior to placing of order.
- **Manufacturer** Data such as catalog for every hardware item to be furnished, showing all finishes, sizes, catalog numbers and pictures, with all abbreviations fully explained shall be submitted as general information and reference.
 - **Hardware Templates** for fabricated doors and windows shall be furnished to each fabricator to confirm that adequate provision will be done for proper installation of the hardware.
 - **Operation and Maintenance Data** shall be provided and submitted to DA PhilRice showing all the hardware component part lists and maintenance instructions for each type supplied including the necessary wrenches of tools required.
- c. **Packaging and Marking** – Each article shall be individually packaged in the manufacturer's commercial carton/container properly marked or labeled so as to be readily identified and delivered to the project site in the original manufacturer's container/package. All hardware shall be provided with fasteners necessary for the installation packed in the same container with the hardware.
- d. **Storage and Protection** – Hardware shall be properly stored in a dry and secured place. It shall be protected from damage at all times prior to and after installation.

2. Products

a. Materials

- **Rough Hardware:** All rough hardware such as nails, expansion bolts, lag screws and other related fasteners required for carpentry work shall be first class quality and locally available.
- b. **Finishing Hardware:** All finishing hardware consisting of locksets, latches, bolts, and other devices, hinges and other similar hardware shall be first class quality available locally and conforming with the following specifications.
- **Cylindrical Lockset:** Door locks appropriate for particular functions shall be of durable construction, preferably the product of single reputable manufacturer for consistent quality and master keying. Cylindrical lockset for swing wood door shall of sturdy construction and knob design. The cylindrical case shall be made of steel, zinc-coated and dichromate dip.

The knobs, latch, strike and pin tumbler assembly shall be cast brass or bronze. The spring and spindle shall be steel, zinc-coated. The pins and the key, shall be nickel-silver. The latch, with a minimum throw of 16mm, shall be retracted by knob from either side except when the outside knob is locked by key in the outside knob or by the turn/push button on the inside knob.

- **Hinge:** Unless otherwise indicated in the plans/drawings, hinge shall be brass coated wrought iron steel for interior doors and wrought bronze for exterior doors with non-rising loose steel pins with button tips and mounting screws of the same materials.

3. Execution

a. Installation

All hardware shall be installed in a neat workmanship manner following the manufacturer's instructions manual to fit details as indicated in the plans.

Except as indicated or specified otherwise, fasteners furnished with the hardware shall be used to fasten hardware in place.

After installation works are completed the hardware shall be protected from paints, stains, blemishes and other damage until the work are properly turned over and accepted.

All hardware shall be properly checked and adjusted in the presence of the Implementing Office representative/Project Supervisor and all hinges, locks, catches, bolts, pulls, closers and other miscellaneous items shall properly operate.

After hardware are properly checked and adjusted, keys shall be properly identified with **key tags** and **turned over to the Implementing Office**.

- b. Keying** – Locks shall be keyed in sets and subsets. Furnish a total of four (4) keys for each set.

VIII. ROOFING AND TINSMITHRY WORKS

A. MATERIALS

0.50mm thk. Pre-painted Long Span Rib Type Roofing and 0.50mm thk. Pre-insulated Rib type, long span, pre-painted roofing

B. INSTALLATION WORKMANSHIP

- 1. Sheathing.** Roofing sheets shall be connected to the steel purlins by using self-tapping roof metal screws or "Tek screws". Spacing of roof screws shall be for every corrugation of the roof. Installation of roof metal screws shall be mechanized, using power drill, or as recommended by the roofing manufacturer. Seal all other punctures w/ "VulcaSeal" and Sealant retouch with roof retouching paint.
- 2. Flashings and Fascia.** Shall be prefabricated fascia as per design in the drawings. It shall be installed at the edge of the roofing.

IX. METAL WORKS

A. SCOPE of WORK

The work consists of furnishing of all materials and labor, tools and equipment, and all necessary services to complete all structural steel works for the footings and columns, roof framings, structural web beams, and other reinforcements.

B. MATERIALS and WORKMANSHIP

- 1.** Certified mill test reports or certified reports of tests made by the fabricators in accordance with ASTM A6 and the governing specifications shall constitute sufficient evidence of conformity with ASTM specifications. Additionally, the

fabricator shall, if requested, provide as affidavit stating that the structural steel furnished meets the requirements of the grade specified.

2. Unidentified steel, if free from surface imperfections, may be used for parts of minor importance, or for unimportant details, where the precise physical properties of the steel and its weld ability would not affect the strength of the structure.
3. Other Metals. Galvanized Iron treated pipes shall conform to standard specifications and shall bear the manufacturer's mill test report.
4. Filler Metal for Welding. Welding electrodes for manual shielded metal arch welding shall conform to the Specification for Mild Steel Covered Arc Welding Electrodes, AWS A5.1, latest edition, or the Specification for Low-Alloy Steel Covered Arc-Welding Electrodes, AWS A5.5, latest edition. Bare electrodes and granular flux used in the submerged-arc process shall conform to F60 or F70 AWS-flux classifications of the Specification for Bars Mild steel Electrodes and Fluxes for Submerged Arc Welding, AWS A5.17, latest edition.
5. All materials shall conform to the requirement in terms of size, mill test reports and quality test certificate issued by "Geotechniks" and other material testing laboratories accredited by the Bureau of Standards and the DPWH. Only certified welders shall perform all welding works. A certified welder's certificate shall be presented to the Owner's Representative for approval before welding works shall commence.
6. All metal and steel supplies shall be stored in elevated platforms, and covered to protect the material from rain and other materials/liquids, which may cause rust and corrosion.
7. All metal parts shall be properly cleaned and rough welding marks must be removed by grinding to remove rough and uneven surfaces. Primer painting shall follow using epoxy paint.

X. FINISHES

A. PAINTING

1. General

- a. **Scope** – This includes all materials, labor, equipment and performance of all operations to complete painting and varnishing work as indicated on drawings and specifications herein.

b. Submittals

- **Samples and Color Scheme:** Submit each kind of materials to the Implementing Office **for approval at least ten (10) days before painting works**. Match these samples with the delivered materials prior to use. Reject said materials if found inferior with respect to approved samples.
- **Test Panels:** Sample panels of selected color or shade shall be prepared on 30cm × 30 cm (1'×1') plywood panels for approval of the Implementing Office.
- **Certificate:** Submit to the Implementing Office the manufacturer's certificate of origin, quality of paints including quantity purchased and instructions, if any.

- c. **Delivery and Storage** – Deliver at job site in original containers with label containing manufacturer's name, color of paint and manufacturer's instructions, if any, intact and seals unbroken. Storage of paints and paint materials at the site shall be restricted to locations designated by the Implementing Office representative/Project Supervisor and such place shall be kept neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.
- d. **Protection** – Provide all drop cloth and other coverings requisite to protection of floors, walls, aluminum, glass finishes and other works.

2. Products

a. Materials

- **Painting Materials** shall conform to requirements of the standard specifications of the Standardization Committee on Supplies and the National Institute of Science and Technology. All paint and paint materials shall be BOYSEN, DAVIES, or any approved equal.
- **Tinting Colors** shall be first grade quality, pigment ground in alkyd resin that disperses and mixes easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body.
- **Concrete Neutralizer** shall be first grade quality concentrate diluted with clean water and applied as surface conditioner of new interior and exterior walls thus improving paint adhesion and durability.
- **Silicon Water Repellant** shall be transparent water shield especially formulated to repel rain and moisture on exterior masonry surfaces.
- **Patching Compound** shall be the fine powder type material like calciumine that can be mixed into putty consistency, with oil base primers and paints to fill minor surface dents and imperfections.
- **Varnish** shall be a homogenous solution of resin, drying oil, drier and solvent. It shall be extremely durable clear coating, highly resistant to wear and tear without cracking, peeling, whitening, spotting, etc. with minimum loss of gloss for a maximum period of time.
- **Lacquer** shall be any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvents are acetates, alcohols and ketones. Although lacquers were generally based on intrecellulose, manufacturers currently use vinyl resin, plasticizers and reacted drying oils to improve adhesion and elasticity.
- **Shellac** shall be a solution of refined lac resin in denatured alcohol. It dries by evaporation of the alcohol. The resin is generally furnished in orange and bleached grades.
- **Sanding Sealer** shall be quick drying lacquer, formulated to provide quick dry, good holdout of succeeding coats, and containing sanding agents such as zinc stearate to allow dry sanding of sealer.
- **Glazing Putty** shall be alkyd-type product for filling minor surface unevenness.

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

b. Schedule

- **Concrete walls** (interior and exterior)
One coat flat latex
Two coats semi-gloss latex
- **Metal surfaces**
Two coats epoxy primer
One coat quick drying enamel
- **Ceiling**
Three coats flat wall enamel

3. Execution

- a. **Preparation of Surfaces** – All surfaces shall be in proper condition to receive the finish.

- **Woodwork** Surfaces shall be hand-sanded smooth and dusted clean. All knotholes, pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint.
- **Interior Woodwork:** Surfaces shall be sandpapered between coats. Dust off thoroughly afterwards. Areas affected by molds, mildew and fungus should be treated with a bleaching solution and dried overnight. Cracks, holes or imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces.
- **Concrete and Masonry Surfaces:** Surfaces must be removed of all loose grid or mortar, contaminants, dirt, grease, oil, dust and other deposits. Surfaces shall be coated with concrete neutralizer, apply either with brush or spray solution of one kilogram of zinc sulfate to four and one-half liters (1 gallon) of water. Allow to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound. After defects are corrected apply the finish coats as specified on the Plans (color scheme approved).
- **Metal:** Metal surfaces shall be clean, dry and free from millscale and rust. Remove all grease and oil from surfaces. Rusty metal exposed to weathering for some time must be sanded, wire brushed or scraped. Wash unprimed galvanized metal with etching solution and allow it to dry. Metal must be completely dry before application of applicable primer.

In addition, the Contractor shall undertake the following:

- Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.
- Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.

- Painting and varnishing works shall not commence when it is too hot or cold.
- Allow appropriate ventilation during application and drying period.
- All hardware will be fitted and removed or protected prior to painting and varnishing works.

b. Application

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

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

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

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

XI. ELECTRICAL WORKS

A. GENERAL

1. Scope – The work under this section consists of the furnishing of all materials, labor, equipment, tools and all services necessary to complete and make ready for operation electrical works as indicated on electrical plans and in accordance with the Drawings, Specifications and the Contract.

The work shall include the furnishing and installing of the following each complete and in proper operating condition unless otherwise stated in this specification:

- a. Wiring system for branch circuits, signal circuits feeder wires, sub feeders including respective conduits, fitting wire gutters, pull boxes, junction boxes, utility boxes and any other type of box and supports and accessories required and/or as indicated on the Drawings;
- b. All the necessary feeder and branch circuit with all the necessary conductors, conduits, fittings and other items as indicated on the Drawings;
- c. All the necessary wiring devices, such as utilization outlets, wall switches, receptacles all complete with their appropriate cover plates;
- d. All defective lighting fixtures and accessories including necessary supports;
- e. All conduits, boxes, wires and equipment;
- f. Grounding system as show on the Drawings;
- g. Supply and installation of all materials not shown on the Drawings nor mentioned in this Specification but are necessary to complete the project.

2. Codes and Regulations

- a. The Work under this section shall be executed in accordance with the latest requirements of the Building Code of the Philippines, Philippine Electric Code, rules and regulations of local ordinances, power utility company, rules and regulations of other governing authorities and with Republic Act No. 7920 as applied or enforced in the locality.
- b. The requirements of the above-mentioned governing codes and the requirements of the companies having involvement or participation are hereby made part of this specification and the Contractor is required to comply with the same. This does not relieve the Contractor from complying with the requirements of the specification or drawings in excess of the above laws and ordinances, codes and requirements, which are not prohibited by the same.

3. Guarantee

- a. The Contractor shall guarantee that the electrical system is free from all grounds and defective materials and workmanship for a period of one (1) year from the date of acceptance of the work. All defects arising within the guarantee period shall be remedied by the Contractor at his own expense.
- b. The Contractor shall indemnify and save harmless the Implementing Office and DA PhilRice from all claims, suit actions, liabilities for damages arising from injuries, disabilities or loss of life to persons or damage to public or private properties resulting from fault or any act of Contractor or his representative in the execution of this work.
- c. The partial acceptance of the work for the purpose of making partial payments, based on the estimated cost satisfactorily completed by the Electrical Contractor, shall not be considered as final acceptance of that portion of the work.

4. Drawings and Specifications

- a. The Drawings and Specifications are meant to be complementary to each other and what is called for by one shall be binding as if called for by both.

- b. Any apparent conflict between the Drawings and Specifications and any controversial or unclear points in either shall be referred to the Implementing Office for final decision.
- c. **All dimensions and locations shown on the Plans are approximate and shall be verified in the field**, as actual locations, distances and levels are **governed by actual conditions**.
- d. No deviation from the plans shall be made unless **with written consent or approval** from the Implementing Office and/or DA PhilRice.
- e. **The Contractor shall keep an active record of the actual installation works during the progress of the job.**

This shall become the reference for the preparation of the **“AS-BUILT” Plans**, which shall include **all pertinent information, complete in all aspects of the actual installation, and all new information not originally shown in the contract drawings**.

The “AS-BUILT” plans shall be prepared by the Contractor at his expense and shall be submitted to the Implementing Office **for approval upon the completion of the work**.

Upon completion of work as described herein, the Contractor shall furnish DA PhilRice **three (3) copies of the “AS BUILT” plans**, signed and sealed by the Contractor’s Registered Professional Electrical Engineer, **for future reference and maintenance purpose**.

- 5. **Samples – The Contractor shall submit a sample of any item he intends to install or use in this project to the Implementing Office for approval.**

B. PRODUCTS

Materials – All materials shall be unused, brand new and shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark.

- a. **Conduits** shall be PVC Schedule 40. Enamel coated steel conduits and conduits with rough inner surfaces are not acceptable.
 - All boxes including junction and pull boxes shall be of sufficient sizes to provide free space for all conductors enclosed in the box, in addition to the fittings, such as switch mechanism and receptacles that may be contained in the box.
 - All junction boxes shall be fitted with standard flat metal box covers.
- b. **Conduit Boxes** shall be code gauge steel and galvanized. Outlet boxes shall be galvanized pressed steel of standard make. In general, outlet boxes shall be at least 100 mm square or octagonal, 53 mm deep and 16 mm minimum gauge.
 - Convenience and wall switch outlet boxes shall be gauge #16 of the 101 mm rectangular, deep, flush type, except in case where 10-amp., or 20-amps., switches shall be mounted in gangs of two or three therefore, the proper sizes of boxes and cover plates shall be used.
- c. **Conduit Fittings:** All conduit fittings such as locknuts and bushings shall be galvanized of standard make. Under no condition shall black enamel conduit fittings be permitted in any part of the installation.

- d. **Wires:** All wires shall be copper, soft drawn and annealed, smooth and of cylindrical form and shall be centrally located inside the insulation.
- e. **Wiring Devices:** All wiring devices shall be standard products of reputable electrical manufacturers. Wall switches shall be rated at least 10A, 250 volts and shall be spring operated, flush, tumbler type. Duplex convenience receptacles shall be rated at least 15A, 250 volts, flush, parallel slots. Single heavy-duty receptacles shall be rated at least 20A 250 volts, 3-wire, flush, polarized type. Only one (1) brand wiring devices shall be used for the project.

Suitable single-pole and three-way switches of the flush tumbler type with appropriate bakelite cover plates shall be furnished and installed as indicated on the Drawings. Wall switches intended to control more than eleven or 40-watt fluorescent lamps using high power factor ballasts shall be rated no less than 5-amp., 250 volts. All duplex receptacles shall be rated no less than 10-amps., 250 volts A.C. grounding type and shall be for flush mounting. Interchangeable type receptacles shall not be acceptable.
- f. **Lighting Fixtures:** Lighting outlets unless otherwise specified shall be furnished and installed by the Contractor. **All fixtures installed shall be as required on Plans**, of good quality materials and approved by the Bureau of Product Standards (BPS).
- g. **Insulation:** All splices shall be properly insulated using 3M Brand electrical type. Application of insulation tape shall be equivalent to the insulation of the wire concerned.

C. EXECUTION

1. **Workmanship** – All works throughout shall be executed in the best practice in a workmanlike manner by qualified and experienced electricians **under the immediate supervision of a duly licensed Electrical Engineer.**

a. Conduits

- Conduits should be cut square with a hacksaw and reamed. Bends shall be made with the required radius. In making bends, only conduit bending apparatus will be used. The use of a pipe tee or vise for bending conduits shall not be permitted. Conduits, which have been crushed, deformed, or flattened, shall not be installed. No running thread shall be allowed. Conduit runs crossing construction joints of the building shall be provided with standard expansion fittings of the approved type.
- No conduits shall be used in any system smaller than 15 mm diameter electric trade size nor shall have more than four (4) 90-degree bends in any one run and where necessary, pull boxes shall be provided.
- All ends of conduits, which are left empty in cabinets and conduit boxes shall be plugged with lead or approved pipe caps so as to prevent the entrance of white ants and dirt within the conduit system. Pull wires shall be inserted in the empty ducts before they are closed with lead or pipe caps and shall be left therein for future use.
- All splices, taps and junctions, except those for feeder and service conductors, shall be soldered or provided with spring lock type connectors, with rubber tape and protected with friction tape.

b. Conduit Boxes and Fittings

- Provide conduit boxes for pulling and splicing wires and outlet boxes for installation of wiring devices.

- As a rule, provide junction boxes or pull boxes in all runs greater than 30 meters in length, for horizontal runs. For other lengths, provide boxes as required for splices or pulling. Pull boxes shall be installed in inconspicuous but accessible locations.
- Support boxes independently of conduits entering by means of bolts, red hangers or other suitable means.
- Conduit boxes shall be installed plumb and securely fastened. They shall be set flushed with the surface of the structure in which they are installed where conduits are run concealed.
- All convenience and wall switch outlet boxes for concealed conduit work shall be deep, rectangular flush type boxes. Four-inch octagonal flush type boxes shall be used for all ceiling light outlets and shall be of the deep type where three (3) or more conduits connect to a single box.
- All boxes shall be painted with antirust red lead paint after installation.
- All conduits shall be lifted with approved standard galvanized bushing and locknuts where they enter cabinets and conduit boxes.
- Junction and pull boxes of code gauge steel shall be provided as indicated or as required to facilitate pulling of wires and cables.

c. Wires and Wiring Devices

- Conductors or wires shall not be drawn in conduits until after the cement plaster is dry and the conduits are thoroughly cleaned and free from dirt and moisture. In drawing wires into conduits, sufficient slack shall be allowed to permit easy connections for fixtures, switches, receptacles and other wiring devices without the use of additional splices.
- All conductors of convenience outlets and lighting branch circuit homeruns shall be wired with a minimum of 3.5 mm in size. Circuit homeruns to panelboards shall not be smaller than 3.5 mm but all homeruns to panelboard more than 30 meters shall not be smaller than 5.5 mm. No conductor shall be less than 2 mm in size.
- All joints, taps and splices on wires larger than 14 mm shall be made of suitable solderless connectors of the approved type and size. They shall be taped with rubber and PVC tapes providing insulation not less than that of the conductors.
- No splices or joints shall be permitted in either feeder or branch conductors except within outlet boxes or accessible junction boxes or pull boxes. All joints in branch circuit wiring shall be made mechanically and electrically secured by approved splicing devices and taped with rubber and PVC tapes in a manner, which will make their insulation as that of the conductor.
- All wall switches and receptacles shall be fitted with standard bakelite face plate covers. Device plates for flush mounting shall be installed with all four (4) edges in continuous contact with finished wall surfaces without the use of coiled wire or similar devices. Plaster filling will not be permitted. Plates installed in wet locations shall be gasketed.
- When more than one switch or device is indicated in a single location, gang plate shall be used.

- d. Grounding System:** All grounding system installation shall be executed in accordance with the approved plans. Grounding system shall include building perimeter ground wires, ground rods, clamps, connectors, ground wells and ground wire taps as shown in the approved design.
- e. Panelboards:** Standard panels and cabinets shall be used and assembled on the job. All panels shall be of dead front construction furnished with trims for flush or surface mounting as required. The Contractor shall install as indicated in the Drawings the necessary panelboards on the multi-breaker type including the breaker and using copper bus bars.

A panel directory shall be provided for each panel board complete with necessary data. All circuit breakers of panelboards shall be marked to its actual phase connection. Directory shall be typewritten and placed inside of panel door.
- f. Lighting System:** Install as indicated on the drawings.

2. Test and Guarantee

- a.** Upon completion of the electrical construction work, the Contractor shall provide all test equipment and personnel and to submit written copies of all test results.
- b.** The Contractor shall guarantee the electrical installation are done and in accordance with the approved plans and specifications. The Contractor shall guarantee that the electrical systems are free from all grounds and from all defective workmanship and materials and will remain for a period of one year from the date of acceptance of works. Any defect shall be remedied by the Contractor at his own expense.

XII. OTHER WORKS:

1. LAN/TELEPHONE AND CCTV:

- UTP cable. 305meters/roll. Copper cable enhanced CAT 6, 4pair, 23 AWG, UTP, White Reel in a box
- RJ45 CAT6 Plug. 8P8C, Gold plated contacts, Clear plastic Housing, for solid wire cables. (100pcs./box) Access Point. Outdoor wireless access point, Point to point / Point to multiple bridge application, 2.4 Ghz Frequency, 150+mbps throughput, up to 15+km range, 16dBi, dual polarity gain antenna, high performance MIMO 2*2 TDMA Architecture, 2*10/100Base - T ethernet interface, outdoor uv stabilized plastic enclosure, pole mounting kit included, 802.3af 48V compliant, 15V, 0.8A surge protection integrated POE adapter included, shock/vibration/RoHS compliant.
- Network Video Recorder. 16-channel, Up to 5MP recording solution, HDMI/VGA output up to 1920*1080P resolution, 1chBNC CVBS and 2ch BNS audio output, live view/playback, 4SATA and 1eSATA interface, dual gigabit network interface, RAID 0,1,5,10 supported, USB interface, RS 485 serial interface keyboard interface, alarm in and alarm out, 100-240V power input, 19inch rack-mounted 2U chassis.
- CCTV Camera. 3MP EXIR bullet IP based camera, Outdoor, 3.0Megapixel(2408*1536) resolution Full HD 1080P real time video, DWDR & 3D DNR & BLC, EXIR illuminators: up to 50m IP66, PoE
- CCTV Camera. 3MP EXIR bullet IP based camera, Indoor, 3.0Megapixel(2408*1536) resolution Full HD 1080P real time video, DWDR & 3D DNR & BLC, EXIR illuminators: up to 50m, PoE

- PoE Adapter. Output voltage 48 VDC, 0.5A-1A, 24 watts, Gigabit LAN Port Input Voltage 90-260VAC, 47-63 Hz, IEC-320 C6 Input Connector, RJ45 shielded socket, Compatible with existing Hikvision CCTV camera
- Hard disk drive. 3.5" internal drive, 3TB Capacity, 64 MB cache SATA, 6Gb/s, 24/7 usage, for surveillance purposes.
- Network Switch. Unmanaged, Gigabit, 24 Port, 1U, 19" Rackmountable
- UPS. APC Back UPS 1000Va, 230V, 50/60HZ +/- 3Hz (auto sensing) maintenance free sealed lead acid battery
- Flexible Hose. 1" Flexible host, orange (Flexcon, or approved equal)
- Improvised post wall mounted switch rack 2*1" angle bar 1* GI sheet
- Fiber Optic 6 Core, LAN Telephone Port, LAN Telephone Cable (Solid Copper Cable, Enhanced CAT 6, 4Pair #23 AWG UTP White)

1. Fire Alarm and Emergency System (FDAS)

- (FDAS) Fire Alarm and Emergency System and Fire Suppression System: Fire Alarm System (3 - Zones) Control Panel, Fire Alarm Bell w/ Manual Call Point, Smoke Detector with Wiring Systems
- Fire Extinguisher, 20lbs, Automatic LED Emergency Lights, Firehose Cabinets with Complete Accessories, Double Back Up Exit Light with LED Emergency Light.

2. Generator House/ Room

- Generator House/Room: Concrete Walls (CHB) and Concrete Flooring (0.15m thk), Painted Finished, with Louver Blocks, Double Swing Steel/Metal Door with 0.5mm thk Pre Painted Rib Type Roofing Sheet Long Span with ATS and Panels

3. Cold Storage/Room (For Warehouse with Cold Storage)

- 5hp Floor Mounted, Premium Inverter, (installation, bracket for condenser, wirings to panelboard & outside breaker and copper tube included), 3phase, 220Volts
- 2hp Split type, high wall, Premium Inverter, (installation, bracket for condenser, wirings to panelboard & outside breaker and copper tube included), Single Phase, 220Volts
- Preventive maintenance of cooling system (Cleaning and observation of unit with report and recommendation)
- New Digital temperature and Relative humidity control and monitoring System, Combined with new 9-(nine) sets of temperature and relative humidity sensors.
- Dehumidifier for the system: dehumidifier with swing function, high/low fan speed, full water tank indicator, 30-liter water dehumidification
- Cooling system Unit, LIGHT CUBIC UNIT
COOLERS: Area of use Small and medium cold rooms
Performance range Direct Expansion
operation: capacity from 1,44 to 47 kW
R404A, Te= -5° C, T1= 15° C, RH= 0-30%)
Brine Operation: capacity from 1 to 20 kW
(Glycol 30%, TW1= -10 °C, T1= 0 °C, RH = 85%) Fans Diameter Ø 300, 350, 400 and 450 mm
Benefits High efficiency in compact sizes
Modular design, 1-4 fans
Fin spacing: 4 mm, 6 mm or 8mm
Solid frame in galvanized steel, cowlings in ABS (on request complete unit in galvanised steel) RAL 9010
Electric defrosting system available.
- FINNED PACK HEAT EXCHANGERS:
* Made with specific geometries for refrigeration.

- * They are characterized by a high ratio between the secondary exchange surface of the fins and the primary one of the tubes.
- * Very thick aluminium fins and highly efficient, internally grooved copper tubes are used for direct expansion unit coolers; plain tubes for brine unit coolers.
- * Tubes with diameters from 1/2 "or 5/8" are available and various fin spacing combinations - up to 12 mm - are provided, to optimize different applications and operating conditions.

- **CASINGS**

casings are made of an aluminum alloy and galvanized steel. casings made of painted metal sheet or stainless steel are available for use in especially aggressive environments.

FANS

* Fans can be either standard axial AC type or electronically commutated EC. Combined with new digital temperature (Room temperature -5degree to 15degree Celcius) and relative humidity (Relative Humidity 0-30%) sensors.

- Biometrics, ZKTECO IFACE702 Biometric with Door Access Control , w/ 2, 000 User Capacity, 100, 000 Transaction Storage, 2000 ID Card Capacity, TCP/IP, USB, and RS232 Connectivity, 3" Color Touch Screen Display, Backup Battery and Power Supply Control, Access Control Interface for: 3rd party electric lock, door sensor, exit button, alarm, door bell, with 25 pcs Proximity RFID Card

- Wall Finished: 75mm thk Poly Urethane Insulation(PUR) Panel,
- Floor Finish: 4" thk HDPE Foam Sub Layer With Rubberized Paint,
- Ceiling Finish: 50mm thk Poly Urethane Insulation(PUR) Panel/Ficem Board with Metal Framing, Sliding Door ; 75mm thk Poly Urethane Insulation(PUR) Panel,

FOR PORTLAND CEMENT CONCRETE PAVEMENT (PCCP)

A. DESCRIPTION

This item shall consist of the construction of a pavement of Portland cement concrete, with or without reinforcement, on a prepared sub base in accordance with these specifications and in conformity with the lines, grades, thickness and typical cross section shown in the plan.

B. MATERIALS

Portland Cement:

The type of cement to be use shall be Portland Cement Type D (ASTM C150). Different brand of cement shall not be use. Partially set cement or which contains lump of cement cake shall be rejected. Cement salvaged from discarded or used bags shall not be used. Sample testing shall be in accordance with ASSTHO T 1217.

Fine Aggregates:

It shall consist of natural sand, stone screening, having hard, strong, durable particles, or S-1. The shape of the particles shall be generally rounded or cubicle and reasonably free from flat or elongated particles. The stipulated percentages of fines in the sand shall be obtained either by the processing of natural sand or by the production of a suitably graded manufactured sand. Signs of more than 10% soil content for every delivery shall be rejected. Fine aggregates from different sources shall not be mixed at storage or stockpile area. Beach sand shall not be allowed. This shall be free from injurious effect of organic impurities. It shall be well graded from course to fine and shall conform to the following table:

Grading Requirements for Fine Aggregate

<u>Sieve Designation</u>	<u>Mass Percent Passing</u>
9.5 mm (3/8 in)	100
4.75 mm (No. 4)	95 – 100
1.18 mm (No. 16)	45 – 80
0.300 mm (No. 5)	5 – 30
0.150 mm (No. 100)	0 – 10

Course Aggregate:

It shall consist of washed stone, gravel, or other approved materials of similar characteristics; having hard, strong, durable pieces and free from any adjacent coatings. Coarse aggregates shall consist of hard, tough, durable, clean particles. The size of coarse aggregates to be used in the various parts of the work shall be ¾” for all concreting work.

Grading Requirement for Course Aggregate

Sieve Designation		Mass Percent Passing		
Standard mm	Alternate U.S. Standard	Grading A	Grading B	Grading C
75	3 “	100		
63	2 ½”	90 – 100	100	100
50	2”		90 – 100	95 – 100
37.5	1 ½”	25 – 60	35 – 70	
25	1”		0 – 15	35 – 70
19	¾”	0 – 10		
12.5	½”	0 - 5	0 – 5	10 - 30
4.75	No. 4			

Water:

Water to be used shall be clean and free from oil, acid alkali, grass or other substances impervious to finish product. Potable water maybe used without tests.

Reinforcing Steels:

Reinforcing steel dowel to be used shall conform to the requirements of the ASTM standard specifications for Billet Steel Bars for concrete reinforcement (A15-625) and to specifications for minimum requirements for the deformed steel bars for concrete reinforcement (A 305-56). During its use, dowels shall be free from rust, oil, or grease coatings.

All structural steel reinforcement shall be taken every batch of delivery and shall be subject to tensile strength by Government Testing Laboratories or from private testing laboratories (Geotechniks, etc.) accredited by the DPWH.

Joint Filler:

Poured joint fillers shall be mixed asphalt and mineral or rubber filler conforming to the applicable requirement of joint filler materials.

All materials shall be stored in proper places. Cement shall be stored on a weather proof building which will protect the cement from dampness. Floor shall be raised from the ground. Fine aggregates and course aggregates shall be stored and or stockpiled separately to avoid contamination from injurious substances. Steel bars shall be stored properly to keep away from rust.

All billings submitted by the Contractor for all civil works must be accompanied by a certificate of laboratory test for all structural steel, and concrete samples with passing mark.

C. PROPORTIONING OF CONCRETE MIX

1. **Proportions** of all materials entering into the concrete shall be as follows:

Mix	Cement	Sand	Gravel
Class AA	1	2	3
Class A:	1	2	4
Class B:	1	2-1/2	5
Class C:	1	3	6

2. **Class of Concrete** – unless otherwise specified/indicated in the plans, concrete mix shall be Class A, and shall have a 28-day compressive strength of 3,500 psi, for all concrete work (with “fly ash” additive). All concrete mix shall be ready mix from batching plant unless otherwise specified.

3. **Cylinder Samples.** Concrete samples in cylinders shall be taken for every batch of concrete mix taken in 3 samples each. Sampling shall be taken by trained engineers and subsequently cured and dried properly (in a moist atmosphere at not more than 21° C to attain accurate results). Test should be done at 7 and 28 days period.

D. MIXING OF CONCRETE

The concrete maybe mixed at the site, in a central mix plant or in truck mixers or bagger concrete mixer. Mixing shall begin within 30 minutes after the cement has been added to the aggregates. In the absence of a concrete mixer, manual mixing is allowed, provided sampling shall be done 3 days before pouring (to attain good result). The mixer shall be of an approved type and capacity. Mixing time will be measured from the time all materials, except water are in drum.

When mixed at site or in a central mixing plant, the mixing time shall not be less than fifty (50) minutes or more than ninety (90) minutes.

Four second shall be added to the specified mixing time if timing starts the instant the skip reaches its maximum raised position. Mixing time ends when the discharge chute opens. Transfer time in multiple drum mixers is included in mixing time. The contents of an individual mixer drum shall be removed before a succeeding batch is emptied therein.

The mixer shall be operated at the drum speed as shown on the manufacturer’s nameplate attached on the mixer. Any concrete mixed less than

the specified time shall be discarded and disposed off by the contractor at his expense. The volume of concrete mix per batch shall not exceed the mixer's nominal capacity in cubic meter, as shown on the manufacturer's standard rating plate on the mixer, except that an overload up to ten (10) percent above the mixer's nominal capacity permitted provided concrete test data strength, segregation, and uniform consistency are satisfactory, and provide no spillage of concrete take place.

Mixed concrete from the central mixing plant shall be transported in truck mixers, truck agitators, or non-agitating trucks. The time elapsed from the time water is added to the mix until the concrete is deposited in place at the site of the work shall not exceed forty five (45) minutes when the concrete is hauled in non-agitating trucks, nor ninety (90) minutes when hauled in truck mixers to truck agitators.

Re-tampering of concrete by adding water or by other means shall not be permitted, except that when concrete is delivered in truck mixers, additional water may be added to the batch material and additional mixing be performed to meet the specified requirements, if permitted by the Project Engineer, provided all these operations are performed within forty-five (45) minutes after the initial operation and water-cement ration is not exceeded.

E. LIMITATION OF MIXING

No concrete shall be mixed, placed or finished when natural light is insufficient.

Concrete not in place within ninety (90) minutes from the time the ingredients were charged into the mixing drum or that has developed initial set shall not be used. Re tampering of concrete or mortar, which has partially hardened, that is remixing with or without cement, aggregate and water shall not be permitted.

F. FORMS

- a. **GENERAL.** Forms shall be used wherever necessary to confine the concrete and shape it to the required lines, or to prevent the concrete of contamination with materials caving from the adjacent, excavated surfaces. Forms shall have sufficient strength to withstand the pressure resulting from placement of the concrete, and shall be maintained rigidly in correct position. Forms shall be sufficiently tight to prevent loss of mortar from the concrete.
- b. **Cleaning and Oiling of Forms.** Before placing the concrete, the contact surfaces of the form shall be cleansed from encrustations of mortar, the grout of other foreign materials, and shall be coated with a commercial form of oil that will effectively prevent sticking and will not stain the concrete surfaces.
- c. **Removal of Forms.** Forms shall be removed in a manner, which will prevent damage to the concrete. Forms shall not be removed without approval from the Project Engineer. Any repair to the surface imperfections shall be performed at once and airing shall be started as soon as the surface is sufficiently hard to prevent further damage.

G. CONVEYING AND PLACING CONCRETE

- a. **Conveying Concrete.** Concrete shall be conveyed from mixer to forms as rapidly as practicable by methods, which will prevent segregation, or loss of ingredients.
- b. **Placing.** Placing concrete shall be worked readily into the corners and

angles of the forms and around all reinforcement and embedded items without permitting the material to segregate. Concrete shall be deposited as close as possible to its final position in the forms so that flow within the mass does not exceed two (2) meters and consequent segregation is reduced to a minimum near forms or embedded items, or elsewhere as directed. Concrete shall be deposited upon the sub base evenly and in a manner that requires a minimum of handling and redistribution. Unless truck mixers or non-agitating hauling equipment are equipped with means to discharged concrete without segregation of the materials, the concrete shall be unloaded into an approved spreading device and mechanically spread on the grade in such a manner as to prevent segregation. Placing shall be continuous between transverse joints without the use of intermediate bulkheads. Necessary hand spreading shall be done with shovels.

- c. ***Time Interval between Mixing and Placing.*** Concrete shall be placed before initial set has occurred and before it has contained its water content for more than 45 minutes.
- d. ***Consolidation of Concrete.*** Concrete shall be consolidated with the aid of mechanical vibrating equipment and supplemented by hand spading and tamping. Vibrators shall not be inserted into lower course that have commenced initial set; and reinforcement embedded in concrete beginning to set or already set shall not be disturbed by vibrators. Consolidation around major embedded parts shall be by hand spading, and tamping, and vibrators shall not be used.
- e. ***Placing Concrete through Reinforcement.*** In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs.
- f. During the pouring of concrete, the Owner's Representatives shall be present.

H. FINISHING

The finishing of the surface is perhaps the most important step in pavement construction. The riding public is entitled to expect a smooth-riding, skid resistant surface. Properly constructed joints, uniform texture of final finish and freedom from irregularities are all important in obtaining good riding qualities.

Finishing at Joints. The concrete adjacent to joints shall be compacted or firmly placed without voids or segregation against the joint material, also under and around all load-transfer transfer devices, joint assembly units, and other features designed to extend into the pavement.

Machine Finishing

- a.) **Non-Vibratory Method** – The concrete shall be distributed or spread as soon as it is in place, it shall be struck off and screened by an approved finishing machine. The machine shall go over each area of pavement as many times and at such intervals as necessary to compact the freshly laid concrete and leave a surface of uniform texture. Excessive operation over a given area shall be avoided. The tops of the forms shall be kept clean so that the machine may ride directly on them without wobbling or other variation tending to affect the precision finish.

During the first pass of the finishing machine, a uniform ridge of concrete shall be maintained ahead of the front screed in its entire length. Workmen should not track dust or mud into it, nor should the sub-grade or base materials be sprinkled in such a way that dust is thrown on the exposed edge of the slab.

Footprints made on the concrete after it has been struck off are dug out with a shovel and the depression thus formed shall be filled with concrete.

Wherever the mixer is shut down for more than thirty (30) minutes a construction joint should be installed. If this is not done, a sloping plane of weakness will be left which may push up when the concrete expands or cause a crack as the slab contracts. When the mixer is stopped for a shorter period the new and old concrete should be thoroughly mixed with the spreader or sliced together with shovels to make sure that no cleavage plane is left.

Concrete shall be deposited as near possible to the expansion and construction joints without disturbing them, but shall not be dumped from the discharged bucket or hopper into a joint assembly unless the hopper is well centered on the joint assembly.

- b.) Vibratory Method – Concrete shall be vibrated with the method that will results to the satisfactory placing of denser and stronger mixes than possible by hand tamping. Vibrators should not be used to move concrete laterally and should not be inserted and withdrawn vertically at close intervals. A systematic pattern of vibration should be used to insure that all concrete have been adequately consolidated.

Vibration shall be of sufficient duration to provide through compaction, but not prolonged so as to cause segregation.

Vibrators shall operate at a frequency of 8,300 to 9,600 impulses per minute under load at a maximum spacing of 60 cm.

Floating

After the concrete has been struck off and consolidated, it shall be further smoothed by means of a longitudinal float, either by hand or mechanical method.

- a.) Hand Method – A manually operated longitudinal float should be used. It may be made of a plank not less than 265 cm length and 15 cm in width, properly stiffened to prevent flexibility and warping. Two men who stand on bridges spanning the pavement handle this longitudinal float. It is laid on the pavement at one edge and pulled toward the other edge with a wiping motion, leveling transverse ridges and other high spots and filling depressions. The longitudinal float is an efficient tool for getting a smooth-riding surface because it eliminates the transverse ridge sometimes left by screeds.
- b.) Mechanical Method – The mechanical longitudinal float shall be of a designed and approved by the Project Engineer, and shall be in good working condition. The float shall be operated transversely across the pavement with its longitudinal axis approximately parallel to the centerline and shall pass at least two times over each area of the pavement. Excessive operation over a given area will not be permitted. Any excess water or soupy materials shall be wasted over the side forms on each pass.

Straight-Edge Testing and Surface Correction – Following longitudinal floating, the surface is scrapped to remove small ridges left by the transverse finisher or longitudinal float. While the concrete is still plastic, the surface of the

concrete shall be tested for ridges with 300 cm long straight-edge. Straightedge testing and surface corrections shall be continued until the entire surface is found to be free from observable departures from the straightedge and the slab conforms to the required grade and cross section.

Final Finish

If the surface texture is ***broom finish***, it shall be applied when the water sheen has practically disappeared. The broom shall be drawn from the center to the edge of the pavement with adjacent strokes slightly overlapping. The brooming operation shall be executed that the corrugation produced in the surface shall be uniform in appearance and shall not be more than 1.5 mm in depth. Brooms shall be of the quality, size and construction and be operated so as to produce a surface finish meeting the approval of the Project Engineer.

If the surface texture is ***belt finish***, when straight-edge is complete and water sheen has practically disappeared and just before the concrete becomes non-plastic, the surface shall be betted with a 2-ply canvass belt not less than 20 cm wide and at least 100 cm longer than the pavement width. The object of belting is the even distribution of the surface mortar and the production of a granular, gritty surface that provided uniform fraction.

Edging

After the final finish, and prior to the initial setting of concrete the edges of the pavement along each side of each slab, transverse expansion joints, formed joints, transverse construction joints, shall be worked with an approved tool and rounded to the radius required in the plan.

In all joints, any tool marks appearing on the slab adjacent to the joints shall be eliminated by brooming the surface. In doing this, the rounding of the corner of the slab shall not be disturbed.

At all joints, care must be taken to prevent the newly finish surface overhanging the body of the adjacent slab.

Surface Test

As soon as the concrete pavement has hardened sufficiently, the surface shall be test with a 3-m straight edge or any specified device. Any area showing high spot greater than 3 mm but not exceeding 12 mm in 3-m shall be marked and immediately ground down with an approved grinding tool to an elevation where the area will not surface deviation in excess of 3 mm. Where the departure from correct cross-section exceeds 12 mm, the pavement shall be removed and replaced by and at the expense of the Contractor.

Any area or sections on the pavement so removed shall not less than 1.5 m in length and not less than the full width of the lane involved.

Curing

Curing is the treatment or protection given to the concrete during the hardening period. Proper curing consists of keeping the concrete moist and sufficient warm to insure adequate hydration of the cement and to protect the

concrete against early shrinkage due to the loss of moisture or abrupt changes in temperature. Strength lost due to lack of warmth or moisture during the first few days cannot be regained by subsequent curing. Pavement, which has been properly cured, has higher strength and better durability than the poorly cured pavement.

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

Removal of Forms

Forms for concrete shall remain in place undisturbed for not less than twenty-four (24) hours after concrete pouring. Crowbars should be used in the removal of forms by pulling out nails and pins. Care must be taken so as not to break edges nor disturb the pavement. Major honeycombed area will be considered as defective work and shall be removed and replaced at the expense of the Contractor. Any area or section so removed shall not be less than the distance between weakened plane joint nor less than the full width of the lane involved.

Sealing Joints

After the concrete has sufficiently hardened and before the pavement is opened to traffic, all joints must be filled with sealing materials. All joints to be sealed must be cleaned in such a manner that all loose and foreign material, including membrane curing compound is removed.

For easy application of sealing joints concrete pouring activity shall be done in such a manner that concrete materials will not be spilled on the exposed surfaces of the concrete. The sealing materials shall be applied to each joint opening to conform to the details shown on the plans or as directed by the Engineer.

Seal should be installed by suitable tools, without elongation and secured in place with an approved lubricant adhesive that shall cover both sides of the concrete joints.

Protection of Pavement

The Contractor should protect the pavement and its appurtenances against both public traffic and traffic caused by its own employees and agents by designating watchmen to direct traffic and the erection of warning signs, lights, pavement bridges or cross-over.

Any damage to the pavement occurring prior to final acceptance shall be removed and replaced at the expense of the Contractor. Remedial measures such as; provision of asphalt, cement grout and patching of concrete mix to the damaged section of the pavement shall not be allowed and are not permitted.

All roads leading the construction site and batching plant shall be moist during the entire works operation to prevent the blowing up of dust particles.

During work operation, precautionary signboards shall be provided by the Contractor to prevent accidents and damage to the freshly laid concrete.

Section VII. Drawings (Lot 1)

Section VII. Drawings (Lot 2)

Section VIII. Bill of Quantities (Lot 1)

Section VIII. Bill of Quantities (Lot 2)

BID PROPOSAL

PROJECT: Lot 1. Site Development and Construction of Rice Seed Processing Facility (w/ Installation of Equipment) under the Korea MAFRA and KRC through GAPI and Nature E&T, Inc. for DA PhilRice-CES

LOCATION: DA PhilRice-CES, Science City of Muñoz, Nueva Ecija

Company Name

Name of Bidder

Position

Address of Bidder

Signature of Bidder

(Submit in Duplicate)

Date

BID PROPOSAL

PROJECT: Lot 2. Site Development and Construction of Warehouse and Cold Storage (w/ Installation of Equipment) under the Korea MAFRA and KRC through GAPI and Nature E&T, Inc. for DA PhilRice-CES

LOCATION: DA PhilRice-CES, Science City of Muñoz, Nueva Ecija

Company Name

Name of Bidder

Position

Address of Bidder

Signature of Bidder

(Submit in Duplicate)

Date

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 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.
- 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,

¹ currently based on GPPB Resolution No. 09-2020

and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].

- 1. 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: _____

Section IX. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class “A” Documents

Legal Documents

- ☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);
Or
- ☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;
And
- ☐ (c) Mayor’s or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;
And
- ☐ (e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

- ☐ (f) 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**
- ☐ (g) 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**
- ☐ (h) 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**
- ☐ (i) 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**
- ☐ (j) 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. 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; **and**
- ☐ (k) 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.

Financial Documents

- ☐ (l) The prospective bidder’s audited financial statements, showing, among others, the prospective bidder’s total and current assets and liabilities, stamped “received” by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier

- than two (2) years from the date of bid submission; **and**
- ☐ (m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

- ☐ (n) 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

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

Other documentary requirements under RA No. 9184

- ☐ (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- ☐ (q) 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**
- ☐ (r) Cash Flow by Quarter.