



REPUBLIC OF THE PHILIPPINES  
QUEZON CITY GOVERNMENT  
BIDS AND AWARDS COMMITTEE –  
GOODS AND SERVICES



# **PHILIPPINE BIDDING DOCUMENTS**

(As Harmonized with Development Partners)

## **SUPPLY, DELIVERY AND INSTALLATION OF VERTICAL HYDROPONIC MODEL AND OTHERS**

**PROJECT NO. QCU-23-HCS-0276B**

Government of the Republic of the Philippines

**Sixth Edition  
July 2020**

# Preface

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Goods to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.
- d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.

- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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

**ABC** – Approved Budget for the Contract.

**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.

**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])

**CDA** - Cooperative Development Authority.

**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.

**CIF** – Cost Insurance and Freight.

**CIP** – Carriage and Insurance Paid.

**CPI** – Consumer Price Index.

**DDP** – Refers to the quoted price of the Goods, which means “delivered duty paid.”

**DTI** – Department of Trade and Industry.

**EXW** – Ex works.

**FCA** – “Free Carrier” shipping point.

**FOB** – “Free on Board” shipping point.

**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]).

**Framework Agreement** – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as “Call-Offs,” are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

**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.

**GPPB** – Government Procurement Policy Board.

**INCOTERMS** – International Commercial Terms.

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

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**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.

**Supplier** – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

**UN** – United Nations.

## ***Section I. Invitation to Bid***

### **Notes on the Invitation to Bid**

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.





QUEZON CITY GOVERNMENT  
BAC – GOODS AND SERVICES



INVITATION TO BID

April 24, 2023

	PROJECT NO.	OFFICE	PROJECT NAME	AMOUNT	SOURCE OF FUND	DELIVERY PERIOD
1.	DBO-23-IT-0265	DEPARTMENT OF BUILDING OFFICIAL	SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF THE QUEZON CITY DEPARTMENT OF BUILDING OFFICIAL BUILD EASY INSPECTION SYSTEM	P 5,700,000.00	GENERAL FUND	60 CD
2.	DBO-23-JS2-0634	DEPARTMENT OF BUILDING OFFICIAL	AIR SANITIZER AND OTHERS	P 1,015,332.20	TRUST FUND	30 CD
3.	CPDD-23-PS2-0691	CITY PLANNING AND DEVELOPMENT DEPARTMENT	PRINTING OF COMPREHENSIVE DEVELOPMENT PLAN (CDP) AND LOCAL DEVELOPMENT INVESTMENT PLAN (LDIP)	P 1,800,00.00	GENERAL FUND	30 CD
4.	PDAD-23-CS1-0701	PARKS DEVELOPMENT AND ADMINISTRATION DEPARTMENT	FOOD AND DRINKS AND OTHERS	P 2,116,000.00	GENERAL FUND	7 MONTHS
5.	PDAD-23-VEHICLES-0242	PARKS DEVELOPMENT AND ADMINISTRATION DEPARTMENT	6-WHEELER TRUCK WITH MANLIFTER	P 15,511,500.00	GENERAL FUND	90 CD
6.	QCGH-22-HME-1714	QUEZON CITY GENERAL HOSPITAL	LINE 1: PORTABLE ULTRASOUND MACHINE AND ULTRASOUND CONSOLE MACHINE WITH ELASTOGRAPHY	P 4, 300,000.00	GENERAL FUND	45 CD
			LINE 2: VIRAL LOAD MACHINE	P 2,500,000.00	GENERAL FUND	45 CD
7.	SDO-23-HCS-0532	SCHOOLS DIVISION OFFICE	PAINTS FOR BRIGADA ESKWELA	P 1,432,400.00	GENERAL FUND	30 CD
8.	SDO-23-TA-0530	SCHOOLS DIVISION OFFICE	MEDALS AND TROPHIES	P 2,850,930.00	GENERAL FUND	30 CD
9.	QCDTRC(TAHANAN)-23-OE-0629	QUEZON CITY DRUG TREATMENT AND REHABILITATION CENTER (TAHANAN)	DESKTOP COMPUTER AND OTHERS	P 1,009,742.00	GENERAL FUND	30 CD
10.	HEALTH-23-FOODSTUFF-0455	QUEZON CITY HEALTH DEPARTMENT	ADULT MILK FOR GERIATRIC PATIENTS	P 6,900,000.00	GENERAL FUND	30 CD
11.	HEALTH-23-HME-0461	QUEZON CITY HEALTH DEPARTMENT	ECG MACHINE AND OTHERS	P 1,056,000.00	GENERAL FUND	30 CD
12.	HEALTH-23-FOODSTUFF-0456	QUEZON CITY HEALTH DEPARTMENT	SUPPLEMENTARY FOOD FOR MOTHERS	P 4,928,000.00	GENERAL FUND	7 MONTHS
13.	BCRD-23-HLMF-0728	BARANGAY AND COMMUNITY RELATIONS DEPARTMENT	HOTEL ACCOMMODATION, FOOD AND OTHERS	P 1,998,000.00	GENERAL FUND	7 MONTHS
14.	OCM(OSCA)-23-PS2-0409B	OFFICE OF THE CITY MAYOR (OSCA)	PRINTING OF PURCHASE SLIP BOOKLETS	P 7,700,000.00	GENERAL FUND	30 CD
15.	OCM-23-EMS-0685	OFFICE OF THE CITY MAYOR	STARTER KIT (VARIOUS SCHOOL SUPPLIES)	P 4,999,813.00	GENERAL FUND	30 CD
16.	OCM-23-GI2-0611	OFFICE OF THE CITY MAYOR	CANNED MEAT AND OTHERS	P 33,797,524.00	GENERAL FUND	60 CD
17.	OCM-23-PCP1-0684	OFFICE OF THE CITY MAYOR	HYGIENE KIT	P 4,394,659.20	GENERAL FUND	30 CD
18.	OCM-23-AP1-0615	OFFICE OF THE CITY MAYOR	VARIOUS AGRICULTURAL PRODUCTS	P 37,660,000.00	GENERAL FUND	30 CD
19.	OCM-23-HCS-0743	OFFICE OF THE CITY MAYOR	HAND SHOVEL AND OTHERS	P 6,658,500.00	GENERAL FUND	30 CD
20.	OCM(POPS)-23-SA-0660	OFFICE OF THE CITY MAYOR - POPS PLAN	SUPPLY AND INSTALLATION OF TRAFFIC SIGNAGES	P 9,999,332.00	GENERAL FUND	45 CD
21.	OCM(POPS)-23-HLMF-0744	OFFICE OF THE CITY MAYOR - POPS PLAN	HOTEL ACCOMMODATION AND OTHERS	P 1,454,711.00	GENERAL FUND	30 CD



22.	CONSO-23-HLMF-0679B	OFFICE OF THE CITY MAYOR - POPS PLAN (QCADAAC)	HOTEL ACCOMMODATION AND OTHERS	P 13,450,800.00	GEN FUND	7 MONTHS
23.	QCDRRMO-23-FFRSE-0466	QUEZON CITY DISASTER RISK REDUCTION AND MANAGEMENT OFFICE	DROWNING VICTIM DETECTION AND RECOVERY EQUIPMENT	P 18,160,856.00	GENERAL FUND	60 CD
24.	QCDRRMO-23-IT-0731	QUEZON CITY DISASTER RISK REDUCTION AND MANAGEMENT OFFICE	CLIMATE ACTION AWARENESS SYSTEM	P 19,100,000.00	TRUST FUND	45 CD
25.	CONSO-23-HCS-0797	NOVALICHES DISTRICT HOSPITAL	VARIOUS HARDWARE SUPPLIES	P 2,311,214.00	GENERAL FUND	30 CD
26.	NDH-22-HME-1572	NOVALICHES DISTRICT HOSPITAL	AUTOMATED BLOOD GAS ANALYZER AND OTHERS	P 7,700,000.00	GENERAL FUND	60 CD
27.	PESO-23-IT-0618	PUBLIC EMPLOYMENT SERVICE OFFICE	SUPPLY, DELIVERY, INSTALLATION AND CONFIGURATION OF ONE (1) COMPUTER SERVER FOR QCPESO	P 3,000,000.00	GENERAL FUND	60 CD
28.	QCU-23-HCS-0276B	QUEZON CITY UNIVERSITY	SUPPLY, DELIVERY AND INSTALLATION OF VERTICAL HYDROPONIC MODEL AND OTHERS	P 10,624,989.10	TRUST FUND	150 CD
29.	QCU-22-OE-1592B	QUEZON CITY UNIVERSITY	3D PRINTER AND SCANNER FOR THE ENGINEERING LABORATORY ROOMS	P 3,200,000.00	TRUST FUND	90 CD
30.	RMBGH-23-MSLI-0323	ROSARIO MACLANG BAUTISTA GENERAL HOSPITAL	VARIOUS RADIOLOGY SUPPLIES (DISPOSABLE SYRINGE KIT AND OTHERS)	P 3,791,646.50	GENERAL FUND	30 CD
31.	RMBGH-23-HCS-0260	ROSARIO MACLANG BAUTISTA GENERAL HOSPITAL	VARIOUS HARDWARE SUPPLIES (LED TUBE LIGHT, PUSH CART AND OTHERS)	P 1,306,576.60	GENERAL FUND	30 CD
32.	QCPI-23-BMOP-0704	QUEZON CITY PUBLIC LIBRARY	WORLD BOOK ENCYCLOPEDIA AND OTHERS	P 1,046,000.00	GENERAL FUND	30 CD
33.	QCTD-23-CS1-0593	QUEZON CITY TOURISM DEPARTMENT	FOOD AND DRINKS AND OTHERS	P 1,755,000.00	GENERAL FUND	7 MONTHS
34.	CAO-23-OE-0165	CITY ADMINISTRATOR'S OFFICE	CARD PRINTER (SINGLE-SIDED)	P 3,648,000.00	GENERAL FUND	30 CD
35.	CAO(TFS)-23-HCS-0793	CITY ADMINISTRATOR'S OFFICE (TASK FORCE STREETLIGHTS)	LINE 1: VARIOUS HARDWARE AND CONSTRUCTION SUPPLIES (CEMENT AND OTHERS)	P 31,683,246.00	GENERAL FUND	90 CD
			LINE 2: REPAIR AND MAINTENANCE OF STREETLIGHTS (VARIOUS CONSTRUCTION SUPPLIES)	P 38,501,957.00		

1. The **QUEZON CITY LOCAL GOVERNMENT**, through the *General Fund*, and *Trust Fund* of various years intends to apply the sums stated above being the ABC to payments under the contract for the above stated projects of contract for each lot/item. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The **QUEZON CITY LOCAL GOVERNMENT** now invites bids for various *Projects*. Delivery of the Goods is required as stated above. Bidders should have completed, within *the last three (3) years* from the date of submission and receipt of bids, 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 a non-discretionary "*pass/fail*" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
  - a. Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA No. 5183.
4. Prospective Bidders may obtain further information from **QUEZON CITY GOVERNMENT Bids and Awards Committee (BAC) Secretariat** and inspect the Bidding Documents at the address given below during *weekdays from 8:00 a.m. – 5:00 p.m.*
5. A complete set of Bidding Documents may be acquired by interested Bidders on **Tuesday, April 25, 2023** from the given address and website(s) below *and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB*. The Procuring Entity shall allow the bidder to present its proof of payment for the fees *in person*.

**STANDARD RATES:**

Approved Budget for the Contract	Maximum Cost of Bidding Documents (in Philippine Peso)
500,000 and below	500.00
More than 500,000 up to 1 Million	1,000.00
More than 1 Million up to 5 Million	5,000.00
More than 5 Million up to 10 Million	10,000.00
More than 10 Million up to 50 Million	25,000.00
More than 50 Million up to 500 Million	50,000.00
More than 500 Million	75,000.00

The following are the requirements for purchase of Bidding Documents;

1. PhilGEPS Registration Certificate (Platinum – 3 pages)
  2. Document Request List (DRL)
  3. Authorization to Purchase Bidding Documents
    - 3.1 Corporate Secretary Certificate for corporation (specific for the project)
    - 3.2 Special Power of Attorney for single proprietorship (specific for the project)
  4. Notarized Joint Venture Agreement (as applicable)
6. The **Quezon City Local Government** will hold a Pre-Bid Conference on 10:30 A.M. of **Tuesday, May 2, 2023** at **2<sup>nd</sup> Floor, Procurement Department-Bidding Room, Finance Building, Quezon City Hall Compound**, and/or through video conferencing *via Zoom* which shall be open to prospective bidders.
- Topic: BAC-GOODS Pre-Bid Conference Meeting  
 Join Zoom Meeting  
<https://us02web.zoom.us/j/84835002246?pwd=OVRuVE0weXZMNXYwZG5LaWd1dXk1QT09>
- Meeting ID: 848 3500 2246  
 Passcode: 154733
7. Bids must be duly received by the BAC Secretariat through manual submission at the 2<sup>nd</sup> Floor, Procurement Department, Finance Building, Quezon City Hall Compound on or before **9:00 A.M. of Monday, May 15, 2023**. Late bids shall not be accepted.
  8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB Clause 14**.
  9. Bid opening shall be on **10:00 A.M. of Monday, May 15, 2023** at the given address below and/or via Zoom. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.  
 Topic: BAC-GOODS & SERVICES BIDDING  
 Join Zoom Meeting  
<https://us02web.zoom.us/j/85850855933?pwd=R2dZUUp4Z3lyU29iZGVlWmdKRjZCdz09>

Meeting ID: 858 5085 5933  
 Passcode: 118682

  - 10. The **Quezon City Local Government** 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 IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
  - 11. For further information, please refer to:  
**ATTY. DOMINIC B. GARCIA**  
 OIC, Procurement Department  
 2<sup>nd</sup> Floor, Procurement Department,  
 Finance Building, Quezon City Hall Compound  
 Elliptical Road, Barangay Central Diliman, Quezon City.  
 Email Add: [bacgoods.procurement@quezoncity.gov.ph](mailto:bacgoods.procurement@quezoncity.gov.ph)  
 Tel. No. (02)8988-4242 loc. 8506/8710  
 Website: [www.quezoncity.gov.ph](http://www.quezoncity.gov.ph)
  - 12. You may visit the following websites:  
 For downloading of Bidding Documents: [www.quezoncity.gov.ph](http://www.quezoncity.gov.ph)

By:

  
**MA. MARGARITA T. SANTOS**  
 Chairperson, QC-BAC-Goods and Services

# *Section II. Instructions to Bidders*

## **Notes on the Instructions to Bidders**

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.



## 1. Scope of Bid

The Procuring Entity, **Quezon City Local Government** *wishes* to receive Bids for the **SUPPLY, DELIVERY AND INSTALLATION OF VERTICAL HYDROPONIC MODEL AND OTHERS** with identification number **QCU-23-HCS-0276B**.

*[Note: The Project Identification Number is assigned by the Procuring Entity based on its own coding scheme and is not the same as the PhilGEPS reference number, which is generated after the posting of the bid opportunity on the PhilGEPS website.]*

The Procurement Project (referred to herein as “Project”) is composed of ***fourteen (14) items***, the details of which are described in Section VII (Technical Specifications).

## 2. Funding Information

2.1. The GOP through the source of funding as indicated below for **2023** in the amount of **TEN MILLION SIX HUNDRED TWENTY FOUR THOUSAND NINE HUNDRED EIGHTY NINE PESOS AND 10/100 ONLY (Php10,624,989.10)**.

2.2. The source of funding is:

*a.* LGUs, the Annual or Supplemental Budget, as approved by the Sanggunian.

## 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 Manuals 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 **IB** 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 verified and accepted the general requirements of this Project, including 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, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, 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. Foreign ownership exceeding those allowed under the rules may participate pursuant to:

- i. When a Treaty or International or Executive Agreement as provided in Section 4 of the RA No. 9184 and its 2016 revised IRR allow foreign bidders to participate;
  - ii. Citizens, corporations, or associations of a country, included in the list issued by the GPPB, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, or associations of the Philippines;
  - iii. When the Goods sought to be procured are not available from local suppliers; or
  - iv. When there is a need to prevent situations that defeat competition or restrain trade.
- 5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to:
  - a. For the procurement of **Non-Expendable Supplies and Services**: The Bidder must have completed a single contract that is similar to this Project, equivalent to at least **Fifty percent (50%)** of the ABC.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

## 6. Origin of 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, subject to Domestic Preference requirements under **ITB** Clause 18.

## 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 twenty percent (20%) of the Project.

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

## 8. Pre-Bid Conference

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

## 9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

## 10. Documents comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.
- 10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within *the last three (3) years* prior to the deadline for the submission and receipt of bids.
- 10.3. 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. Similar to the required authentication above, 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.

## 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 VIII (Checklist of Technical and Financial Documents)**.
- 11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.
- 11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.4. 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. Bid Prices

- 12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:
  - a. For Goods offered from within the Procuring Entity's country:
    - i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);
    - ii. The cost of all customs duties and sales and other taxes already paid or payable;
    - iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and
    - iv. The price of other (incidental) services, if any, listed in e.
  - b. For Goods offered from abroad:
    - i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination

in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.

- ii. The price of other (incidental) services, if any, as listed in **Section VII (Technical Specifications)**.

### 13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the 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.

13.2. Payment of the contract price shall be made in:

- a. Philippine Pesos.

### 14. Bid Security

14.1. The Bidder shall submit a Bid Securing Declaration<sup>1</sup> 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**.

14.2. The Bid and bid security *in no case shall exceed One Hundred Twenty (120) calendar days from the date of opening of bids, unless duly extended by the bidder upon the request of the Head of the Procuring Entity (HoPE) of the Quezon City Local Government*. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

### 15. 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 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.

### 16. Deadline for Submission of Bids

16.1. The Bidders shall submit on the specified date and time through manual submission as indicated in paragraph 7 of the **IB**.

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<sup>1</sup> In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.



## 17. Opening and Preliminary Examination of Bids

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

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

- 17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

## 18. Domestic Preference

- 18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

## 19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring 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 the 2016 revised IRR of RA No. 9184.

- 19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 15 shall be submitted for each lot or item separately.

- 19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

- 19.4. The Project shall be awarded as follows:

One Project having several items that shall be awarded as one contract.

- 19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

## 20. Post-Qualification

- 20.1. 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**

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

## ***Section III. Bid Data Sheet***

### **Notes on the Bid Data Sheet**

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

- a. Information that specifies and complements provisions of the ITB must be incorporated.
- b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

# Bid Data Sheet

ITB Clause	
5.3	<p>For this purpose, contracts similar to the Project shall be:</p> <ol style="list-style-type: none"> <li><i>A single contract similar to the items to be bid and must be at least <b>fifty percent (50%)</b> of the ABC.</i></li> <li>Completed within the last three (3) years prior to the deadline for the submission and receipt of bids substantially in a <b>FORM prescribed by the QC-BAC-GOODS AND SERVICES, must be accompanied by a copy of Certificate of Acceptance by the end-user or Official Receipt (O.R) or Sales Invoice (S.I.) issued for the Contract.</b></li> </ol>
7.1	Subcontracting is not allowed.
12	The price of the Goods shall be quoted DDP <i>within Quezon City</i> or the applicable International Commercial Terms (INCOTERMS) for this Project.
14.1	<p>The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:</p> <ol style="list-style-type: none"> <li>The amount of not less than <b>Php212,499.78</b> or equivalent to two percent (2%) of ABC if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or</li> <li>The amount of not less than <b>Php531,249.46</b> or equivalent to five percent (5%) of ABC if bid security is in Surety Bond.</li> </ol>
19.3	<p><i>[In case the Project will be awarded by lot, list the grouping of lots by specifying the group title, items, and the quantity for every identified lot, and the corresponding ABC for each lot.]</i></p> <p><i>[In case the project will be awarded by item, list each item indicating its quantity and ABC.]</i></p>
20.2	<p>List of required licenses and permits relevant to the Project and the corresponding law requiring it.</p> <ul style="list-style-type: none"> <li><b>No additional requirements</b></li> </ul>
21.2	<p>Additional required documents relevant to the Project that are required by existing laws and/or the Procuring Entity.</p> <ul style="list-style-type: none"> <li><b>Notarized Affidavit of Undertaking stating compliance to the following:</b> <ol style="list-style-type: none"> <li>The provider shall have a technical knowledge on the principle of aquaponics, hydroponics and mushroom production</li> <li>The provider shall have at least two years experience on design/fabrication/construction of automated mushroom production, hydroponics and aquaponics with solar assembly</li> <li>The provider shall have at least seven (7) projects accomplished related to mushroom, aquaponics and/or hydroponics</li> <li>The provider shall have a designated licensed agricultural engineer for the project</li> <li>Installation included</li> </ol> </li> </ul>

# *Section IV. General Conditions of Contract*

## **Notes on the General Conditions of Contract**

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special 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.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract (SCC)**.

## 2. Advance Payment and Terms of Payment

2.1. Advance payment of the contract amount is provided under Annex “D” of the revised 2016 IRR of RA No. 9184.

2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

## 3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to 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 of RA No. 9184.

## 4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC, Section IV (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

## 5. Warranty

6.1. In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.

- 6.2. The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

## **6. Liability of the Supplier**

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

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

# *Section V. Special Conditions of Contract*

## **Notes on the Special Conditions of Contract**

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity’s country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

- a. Information that complements provisions of the GCC must be incorporated.
- b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.



# Special Conditions of Contract

GCC Clause	
<p>1</p>	<p><i>[List here any additional requirements for the completion of this Contract. The following requirements and the corresponding provisions may be deleted, amended, or retained depending on its applicability to this Contract:]</i></p> <p><b>Delivery and Documents –</b></p> <p>For purposes of the Contract, “EXW,” “FOB,” “FCA,” “CIF,” “CIP,” “DDP” and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows:</p> <p><i>[For Goods supplied from abroad, state:]</i> “The delivery terms applicable to the Contract are DDP delivered <i>[indicate place of destination]</i>. In accordance with INCOTERMS.”</p> <p><i>[For Goods supplied from within the Philippines, state:]</i> “The delivery terms applicable to this Contract are delivered <i>[indicate place of destination]</i>. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination.”</p> <p>Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements).</p> <p>For purposes of this Clause the Procuring Entity’s Representative at the Project Site is <i>[indicate name(s)]</i>.</p> <p><b>Incidental Services –</b></p> <p>The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: <i>Select appropriate requirements and delete the rest.</i></p> <ul style="list-style-type: none"> <li>a. performance or supervision of on-site assembly and/or start-up of the supplied Goods;</li> <li>b. furnishing of tools required for assembly and/or maintenance of the supplied Goods;</li> <li>c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;</li> <li>d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and</li> </ul>
	<ul style="list-style-type: none"> <li>e. training of the Procuring Entity’s personnel, at the Supplier’s plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.</li> <li>f. <i>[Specify additional incidental service requirements, as needed.]</i></li> </ul> <p>The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.</p>

	<p><b>Spare Parts –</b></p> <p>The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:</p> <p><i>Select appropriate requirements and delete the rest.</i></p> <ul style="list-style-type: none"><li>a. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and</li><li>b. in the event of termination of production of the spare parts:<ul style="list-style-type: none"><li>i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and</li><li>ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested.</li></ul></li></ul> <p>The spare parts and other components required are listed in <b>Section VI (Schedule of Requirements)</b> and the cost thereof are included in the contract price.</p> <p>The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of <i>[indicate here the time period specified. If not used indicate a time period of three times the warranty period]</i>.</p> <p>Spare parts or components shall be supplied as promptly as possible, but in any case, within <i>[insert appropriate time period]</i> months of placing the order.</p>
	<p><b>Packaging –</b></p> <p>The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods’ final destination and the absence of heavy handling facilities at all points in transit.</p> <p>The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity.</p> <p>The outer packaging must be clearly marked on at least four (4) sides as follows:</p> <p>Name of the Procuring Entity Name of the Supplier</p>

	<p>Contract Description</p> <p>Final Destination</p> <p>Gross weight</p> <p>Any special lifting instructions</p> <p>Any special handling instructions</p> <p>Any relevant HAZCHEM classifications</p>
	<p>A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging.</p> <p><b>Transportation –</b></p> <p>Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.</p> <p>Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.</p>
	<p>Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure.</p> <p>The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination.</p> <p><b>Intellectual Property Rights –</b></p> <p>The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.</p>
2.2	<i>[If partial payment is allowed, state]</i> “The terms of payment shall be as follows:
4	The inspections and tests that will be conducted are: <i>Product Presentation/Demonstration/Site Inspection, if applicable.</i>

# Section VI. Schedule of Requirements

PROJECT NAME: SUPPLY, DELIVERY AND INSTALLATION OF VERTICAL  
HYDROPONIC MODEL AND OTHERS  
PROJECT NO. QCU-23-HCS-0276B

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Item Number	Description	Unit of Issue	Quantity	Delivered, Weeks / Months
	<i>With minimum technical specifications:</i>			
1	<p><b>ONE-SQUARE-METER VERTICAL HYDROPONIC MODEL</b></p> <p>A vertical hydroponic garden measuring 1-sq.m and 1.8m tall using tubular bar; with protective roof of 50% Shade UV-resistant plastic, aluminized shade straw net and enclosure of 24 x 24 mesh superfine insect-proof nets around; with six layers of parallel U-shaped 50mm PVC growing tubes joined together by PVC elbows to accommodate about 300 holes for growing leafy vegetables and herbs; nutrient solution is lifted to the uppermost layers of growing tubes from a 200-liters reservoir using interconnected 100mm PVC Pipe with fittings operated by a 60-watts pump (another unit is provided as back-up pump) through a 13mm PVC inflow pipes with fittings and ball valve allowing a film of water enriched with nutrients to be absorbed by plants planted in plastic cups with media and cascade down to the lowest tubes and return to the reservoir; valves are provided to control the flow of water in the inflow pipe to be lifted or to allow the nutrients to circulate in the reservoir during mixing; 10cm caster wheels allow the systems to be moved. Cutting disc and welding rod for steel will be used also, 3 coats of elastomeric paint finish and epoxy enamel paint finish for the exterior wall and steel member will be used, respectively. No. 8 cable tie, 400cc solvent cement, teflon tape, waste cloth and a set of nutrient solution will be used. For electrical system, 20mm PVC and IMC Pipe with its fittings will be used together with 50mm x 100mm PVC Utility box, an LPPA panel board (Main: 30AT, 2P Branches: 1-20 AT, 2P, Bolt-on, 2-30 AT, 2P, Bolt-on Enclosure: NEMA 3R) and enclosed circuit breaker (30AT, 2P, Bolt-on). This will also use 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). Also, horizontal layout of pipe, GI Tie Wire Ga. 16 for wires and electrical tape will be included. This structure covered by</p>	lot	1	<b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b>

	<p>the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
2	<p><b>ONE-SQUARE-METER VERTICAL AQUAPONIC MODEL</b></p> <p>A vertical aquaponics garden measuring 1-sq.m and 1.8m tall using tubular bar; with protective roof of 50% Shade UV-resistant plastic and aluminized shade straw net and enclosure of 24 x 24 mesh superfine insect-proof nets around; with six layers of U-shaped 50mm and 100mm PVC growing tubes joined together by PVC elbows and cleanouts and 13mm uPVC pipe with hub and fittings with 13mm ball valve to accommodate about 200 holes for growing leafy vegetables and herbs; culture water from 200-L plastic reservoir flow to a 200-L plastic bio filtration tank; operating by a 60-watt pump (another unit is provided as back-up pump) lift the culture water through a 13mm PVC inflow pipes to the uppermost layer of growing tubes allowing a film of water enriched with nutrients produced by fish (about 50 pcs) to be absorbed by plants and cascade down to the lowest tubes and return to the fish tank; valves are provided to control the flow of water in the inflow pipe to allow the nutrient to circulate in the fish tank; 10cm caster wheels allow the systems to be moved; Cutting disc and welding rod for steel will be used. This will use 3 coats of elastomeric paint finish and epoxy enamel paint finish for exterior wall and steel member, respectively. No. 8 cable tie, 400cc solvent cement, teflon tape and waste cloth will be used. For electrical system, 20mm PVC and IMC Pipe with its fittings together with 50mm x 100mm PVC Utility box, a LPPA panel board and enclosed circuit breaker (30AT, 2P, Bolt-on) is also</p>	lot	1	

	<p>included. This will also use the 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). Also, horizontal layout of pipe, GI Tie Wire Ga. 16 for wire and electrical tape will be included. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6 m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
3	<p><b>HOUSEHOLD HYDROPONIC MODEL FOR LEAFY VEGETABLE (3m x 4m)</b></p> <p>A unit of a gothic roofed tropical greenhouse covered with clear 0.008' thick UV plastic, 50% aluminized shade straw nets, #24 insect-proof net mesh; GI frames; height: 3.25m; width: 3.0m; length: 4.0m for hydroponic production of leafy vegetables and herbs; with ante room with a dimension of 1.0m x 1.2m in front with barn door mechanism and door hinges (3 inches x 3 inches); complete with four racks of parallel 50mm PVC pipes interconnected with PVC elbows and tees using NFT growing system and 20mm GI pipe; capable of growing about 500 plants in a plastic cups with growing media; nutrient solution tank and delivery/return pipe networks; with ante room in front; 1 unit of 400-watts submersible pump (another unit is provided as back-up pump); 1 cu.m IBC nutrient solution reservoir in a water-bath technique using water-proof concrete tank provided with protective shed at the back using UV-resistant plastic sheet and net shade attached to a GI frame. It has 3 cu.m. mix concrete for the pedestal, reservoir and slab on fill with Grade 40 10mm reinforcing steel bar with GI Tie Wire #16 for reservoir, slab on fill, concrete footing and racks while 12mm for the</p>	lot	1	

	<p>pedestal. It has also food graded tank lining as waterproofing. This will also use 3 coatings epoxy enamel paint finish for the steel member and 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering with 0.30mm plain sheet with connection accessories for the reservoir. This will also use 19mm, 50mm and 75mm GI Pipe, 6mm thick base plate for the structural steel, 50mm x 100mm x 1.5mm tubular bar and 50mm x 75mm 1.2mm C-Purlins including the bolts and nuts (16mm x 200mm anchor bolt). Grinding disc, hacksaw blade, acetylene tank, cut off blade, 14 inches, cutting disc, 20mm drill bit, oxygen tank and welding rod for steel will be used. It includes 50mm PVC Pipe with hub and fittings, 25mm blue uPVC male and female adaptor, 25mm x 13mm unequal tee blue uPVC, 20mm blue uPVC pipe with tee, check valve and ball valve, and 13mm blue uPVC pipe with fitting and ball valve. 400cc solvent cement, teflon tape and waste cloth will be used. In electrical system, 20mm PVC and IMC Pipe with fittings and 22mm<sup>2</sup> solderless connector will be used. It is with 50mm x 100mm PVC Utility Box and 100mm x 100mm PVC Junction box with cover. Also, horizontal layout of pipe, GI Tie Wire, Ga. 16 for wire and electrical tape, rubber tape, hacksaw blade, all around sealant, solvent cement, rugs and torch with butane will be included. For electrical system, 20mm PVC and IMC Pipe with fittings together with 50mm x 100mm PVC Utility box, a LPPA panel board and enclosed circuit breaker (30AT, 2P, Bolt-on). Will used 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26 x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16 mm Φ with 10 mm Φ stirrup spaced at 200 mm, height: 6 m, depth footing: 1.2 m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
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	with battery, charge controller, inverter, PV wires #16, stand with frame, DC & AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.			
4	<p><b>COMMERCIAL HYDROPONIC MODEL FOR LEAFY VEGETABLE (4m x 8m x 16m)</b></p> <p>A gothic roof greenhouse, covered with clear 0.008' thick UV-resistant plastic sheet and 50% aluminized shade straw nets roof and #24 insect-proof net mesh as side walls attached to a GI frames with height of 4.0m x width of 8.0m and length of 16m; with growing systems for hydroponic production of fruiting vegetables complete with at least 200 growing bags with coco peat medium and recirculating and automated drip irrigation system; with 1 cu.m nutrient solution reservoir in a water bath connected with the delivery/return pipe networks; with 2 ante rooms in front and back; with 2 units of 1-hp pump (one unit as back-up); with PH control and nutrient solution injectors; with trellis network attached to greenhouse trusses; provided with 1 cu.m IBC reservoir nutrient solution reservoir in a water-bath technique using concrete tank provided with protective shed at the back using UV-resistant plastic sheet and net shade attached to a GI frame. It has 3 cu.m. mix concrete for the pedestal, reservoir and slab on fill with formworks and shoring with Grade 40, 10mm reinforcing steel bar with GI Tie Wire #16 for reservoir, slab on fill, concrete footing and racks while 12mm for the pedestal. It has also food graded tank lining as waterproofing. will use 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering. with 0.30mm plain sheet with connection accessories for the reservoir and 20mm GI Pipe for metal works. This will use 19mm, 50mm and 75mm GI Pipe, 6mm thick base plate, 50mm x 100mm x 1.5mm tubular bar and 50mm x 75mm 1.2mm C-Purlins including the bolts and nuts (16mm x 200mm anchor bolt) for the structural works. This will also use 4 inches grinding disc, hacksaw blade, acetylene tank, cut off blade/wheel, 14 inches cutting disc, 20mm drill bit, oxygen tank, welding rod for steel. This will also have 3 coats of epoxy enamel paint finish for steel member. For the installation of doors, 3 inches x 3 inches door hinges will be used. For the sewer line and drainage system, this will include 75mm, 50mm, and 25mm PVC Pipe with hub and fittings. It also the includes 25mm blue uPVC Pipe with hub and fittings with ball</p>	lot	1	

**Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed**



	<p>valve and 13mm, 90 degrees elbow and tee equal Blue uPVC. It has 200L blue drum as water tank. Also, this will use 400cc solvent cement, teflon tape, waste cloth and 25mm screen filter. It also includes the excavation for structures, layout and staking, and site cleaning and preparation of the structure. For electrical system, 20mm PVC and IMC Pipe with fittings and 22mm<sup>2</sup> solderless connector will be used. It is with 50mm x 100mm PVC Utility Box. Also, horizontal layout of pipe, GI Tie Wire, Ga. 16 for wires and electrical tape, rubber tape, hacksaw blade, all around sealant, 400cc solvent cement, rugs and torch with butane will be used. This will also use an LPPA panel board, enclosed circuit breaker (30AT, 2P, Bolt-on) and safety breaker DPST 30A. Will used 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10 mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
5	<p><b>KRATKY HYDROPONICS SYSTEM</b>  Rack made of 25mm x 25mm x 6mm angle bar; height = 1.0m (first layer) and 0.50m (second layer) to accommodate 10 styro boxes with a dimension of 480mm x 620mm x 200mm using styrofoam vessel with 8 holes for growing leafy vegetables and herbs; with protective roof of 50% Shade UV-resistant plastic and aluminized shade straw net with an enclosure of 24 x 24 mesh superfine insect-proof nets around. It has 3 coatings epoxy enamel paint finish for steel</p>	lot	1	

	member and will also use 4 inches grinding disc for metal, acetylene tank, cut off blade, oxygen tank and welding rod for steel. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete.			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
6	<p><b>TERRARIUM VEGETABLE BOX FOR LEAFY VEGETABLE</b></p> <p>Rack made of 25mm x 25mm x 6mm angle bar to accommodate ten (10) terrarium veggie boxes using plastic box 40cm x 60cm x 60cm as vessel with organic soil rich in nutrients for growing leafy vegetables and herbs; It has 3 coatings epoxy enamel paint finish for steel member; with protective roof of 50% Shade UV-resistant plastic and aluminized shade straw net with an enclosure of 24 x 24 mesh superfine insect-proof nets around. This will also use 4 inches grinding disc for metal, acetylene tank, cut off blade, oxygen tank and welding rod for steel. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete.</p>	lot	1	
7	<p><b>FIELD OFFICE/TRAINING ROOM/CHILLER /HYDROPONICS SHOW ROOM</b></p> <p>Two 20-footer shipping containers to serve as office and as computer/chilling room; provided with 1 unit of wall mounted split type air-conditioning with 10,900 BTU/Hr., 8.90cfm, 6.35mm L, 9.52mm G 1070 watts and 2 units of wall mounted split type air conditioner with 8,600 BTU/Hr., 9.60 cfm, 6.35mm L, 9.53mm G. The airconditioning system will use 6.35mm and 9.52mm copper coil tubing as roughing-ins and 6.35mm x 20mm and 9.52mm x 20mm thick rubber foam as insulations. It has condensate water drainage system using 20mm uPVC elbow and 20mm x 3m UPVC pipe. This will be covered with clear 0.008' thick UV plastic and 80% aluminized shade nets and enclosed with net mesh as side walls sitting on a concrete foundation and concrete floor; with ante room in front; an attached greenhouse at the back of the receiving are covered with UV-resistant plastic and 50% shade nets and enclosed with net mesh and concrete foundation around; gutters and IBC tanks are provided as water harvesting system; all component facility are provided with locks; comfort rooms for male and female are provided beside the facility with provision of faucets and lights. It has 18</p>	lot	1	

	<p>cu.m. mix concrete for the pedestal, column footing and slab on fill with formworks and shoring with 10mm. Reinforcing steel bar Grade 40 for concrete pedestal and Grade 40, 12mm and 10mm. Reinforcing Steel bar and Grade 60 reinforcing steel bar for the column footing, all with tie wire #16. This will use 20mm, 32mm and 50mm GI Pipe for metal works. It includes the layout and staking, site clearing and preparation, excavation for structures and backfill. This will use 4 inches grinding disc for metal, acetylene tank, cut off blade, assorted metal drill bit, oxygen tank and welding rod for steel. It has 4.5mm thick fiber cement board on metal studs (double wall) for wall finishing. It also includes the installation of sets of panel doors (0.90m x 2.1m) and 3 sets of sliding windows (1.00m x 2.5m) with complete accessories. Also, it includes that 50mm and 100mm PVC Pipe with its hub and fittings and 75mm x 50mm reducer for the drainage system. Additionally, 13mm blue uPVC Pipe with hub, tee equal and ball valve, 25mm blue uPVC pipe with hub and fittings including check valve and ball valve, and 50mm blue uPVC pipe with hub and fittings will be included. It is for sewer line and drainage system. It is operated by 100W submersible pump 220VAC/1-phase. This will also use 400cc solvent cement, teflon tape and waste cloth. For electrical system, this will use 20mm, 32mm, and 40mm PVC pipes and 25mm and 32mm IMC Pipe including fittings, 50mm x 100mm PVC Utility Box and 100mm x 100mm PVC Junction Box with Cover. Will also use 3.5mm<sup>2</sup>, 5.5mm<sup>2</sup>, 14mm<sup>2</sup> and 38mm<sup>2</sup> THHN Wire, 22mm<sup>2</sup> THW Wire and 3.5mm<sup>2</sup> TW Wire and 8mm<sup>2</sup> TW Wire. It has switches with plate and cover with 1 gang and 2 gangs. Also, 2-gangs convenience outlet with grounding. It has sets of LED High Bay Lighting Fixture and 600mm x 1200mm 2x18W LED troffer type with accessories (Surface mounted type). It has grounding system of 16mm x 3000mm grounding rod (copper clad) with ground and MDP (Main: 60AT, 2P; Branches: 12-30 AT, 2P, Bolt-on; Enclosure: NEMA 1 with ground terminals) and LPP Panel boards (Main: 60AT, 2P; Branches: 3-20 AT, 2P, Bolt-on; Enclosure: NEMA 1 with ground terminals). It includes the enclosed circuit breaker (30AT, 2P, Bolt-on), Horizontal Layout of Pipe and Vertical Layout of Pipe. This will use hacksaw blade, all around sealant, 400cc solvent cement, torch with butane, rugs, GI Tie Wire with Ga. 16 for wires, electrical tape, pulling lubricant, waste cloth, 50mm x 10mm duct tape, brazing rod 10pcs/box) and 25mm wide x 50m long polyethylene tape. It includes</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
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	<p>the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This include the billboard about the project. (1.20m x 2.40m tarpaulin attached in Plywood. It includes name of the project, location, the name of the contractor, the budget of the project costs and the duration of the project.) This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by 13KwP Solar Facility with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
8	<p><b>GABLE-ROOFED GREENHOUSE WITH AQUAPONICS SYSTEM</b></p> <p>A gable-roof GI structure for aquaponics production of vegetables and herbs with GI frames, Height: 3.5m; Width: 4.0m: Length: 8.0m; complete with cascading NFT system with about two parallel growing tubes and water bath and nutrient reservoir; with ante room; trusses will be painted; and covered with clear 0.008' thick UV-resistant plastic sheet, 50% net shade and #24 net mesh as side walls; provided with 1 unit of 100-watts submersible pump (another unit is provided as back-up pump); complete with four racks of parallel 2-in PVC pipes interconnected with PVC elbows NFT growing system capable of growing about 800 plants in a plastic cups with growing media; with water-proof concrete fish tank diameter of 2-meter in diameter with conical bottom (height=0.5m) capable of rearing about 800 fish and a water-proof concrete bio filtration tank with a dimension of 0.5m deep x 0.5 m wide x 2.0 m long both provided with protective shed at the back using 0.008' thick UV-resistant plastic sheet and net shade attached to a GI frame. It includes the excavation for structures,</p>	lot	1	

	<p>layout and staking, site clearing and preparation and backfill. It has mix concrete for slab on grade, slab on fill, concrete footing and pedestal. This will also use Grade 40, 10mm and 12mm Reinforcing Steel bar including the tie wire #16. Tank lining food grade waterproofing will be used for the fish tank. This will have 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering, and base plate, tubular bar and c-purlins. Also, this will also use 35mm, 50mm, 75mm, 20mm GI Pipe for metal works. And will use also the corrugated 0.60mm thick with connection accessories (any color) for the roofing of the fish tank. It also includes the use of 4 inches grinding disc for metal, 400cc solvent cement, teflon tape, waste cloth, acetylene tank, cut off blade, assorted metal drill bit, oxygen tank, welding rod, 2 inches x 2 inches x 2mm thick welded wire mesh, superfine net 24 x 24 mesh for walls and a set of barn door mechanism with door hinges 3 inches x 3 inches for the installation of doors. This will use 50mm and 100mm PVC pipe with hub and fittings with 75mm x 50mm reducer. It also uses the 13mm, 25mm and 50mm blue uPVC pipe with hub and fittings with 13mm and 25mm ball valve and 25mm check valve. It is for the sewer line and drainage system. In electrical system, this will use 20mm PVC and IMC pipe with fittings and 22mm<sup>2</sup> solderless connector and 50mm x 100mm PVC Utility box. This will also use 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with convenience outlet with grounding (2-gangs) and 16mm x 3000mm grounding rod (copper clad). A panel board (LPP) with the following specifications; (Main: 30AT, 2P Branches: 4-30AT, 2P, Bolt on Enclosure: NEMA 3R) is also included together with the enclosed circuit breaker (30AT, 2P, Bolt-on), horizontal layout of pipe, GI Tie Wire Ga. #16 for wires and electrical tape. It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
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	be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC & AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.			
9	<p style="text-align: center;"><b>ATTACHED GREENHOUSE WITH TOWER HYDROPONICS</b></p> <p>A tropical gothic greenhouse measuring 4m high x 4m wide and 6m long for tower hydroponics system attached to the back of the wall garden; covered with clear 0.008' thick UV-resistant plastic and 50% net shade and superfine insect-proof net for walls; provided with ante room 1.0m x 1.2m with sliding door on one side, standing in the interior are four rows of tower garden fabricated out of <b>6-in diameter</b> PVC pipe and irrigated with a mist system allowing the nutrient solution to pass through the interior of the tower to provided nutrition to the plants planted in plastic cups; a cascading NFT systems with four layers of growing tubes on one side is can be added to maximize the space; it utilizes the reservoir of the wall garden but with separate pump (another pump is provided as back up). A wall garden is attached to the greenhouse. A wall of about 4.0m x 6.0m using marine plywood attached to GI posts and ¼' x 1 inch angle bar frame converted into a vertical garden with wool attached to the frame; pouches are cut onto the wool where edible plants are inserted to form the letters of "PLANT, PLANT, PLANT QCU and GROWQC" with background of other types of edible plants; automatically irrigated by drip from the top that cascades down to provide nutrition on the plants and collected on the lowest level of the wall to return to the nutrient solution reservoir; a 1 cu.m IBC tank serves as reservoir in a water bath system. It includes the layout and staking on site and site clearing and preparation. This will use 20mm GI Pipe, plain sheet 0.30mm with connection accessories (any color) for the roofing of nutrient solution reservoir, 25mm x 25mm x 6mm thick angle bar, 50mm GI Pipe Sch. 40 and 19mm GI Pipe Sch. 40 for metal works. It includes the use 4 inches grinding disc, hacksaw blade, acetylene tank, cut off blade, 14 inches cutting disc, 20mm drill bit for concrete, oxygen tank and welding rod. This will also use 3 coats of epoxy enamel paint finish for steel members. It includes the installation of doors, barn door</p>	lot	1	<p style="text-align: center;"><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>

	<p>mechanism with door hinges 3 inches x 3 inches (butt hinges). Also, for the sewer line and drainage system, this will use 100mm and 150mm PVC pipe with hub with fittings (elbows and tee) and 75mm x 50mm reducer. This will have the 50mm, 25mm and 13mm blue uPVC pipe with hub with its fittings, 13mm and 25mm ball valve, and 25mm check valve. The system is operated by the 100W submersible pump. It includes the following consumables like 400cc solvent cement, teflon tape and waste cloth. For electrical system, this will use 20mm of PVC and IMC Pipe with fittings including 22mm<sup>2</sup> solderless connector and 50mm x 100mm PVC utility box for 3.5mm<sup>2</sup> THHN wire, 5.5mm<sup>2</sup> THHN wire and 3.5 TW wire with convenience outlet with grounding (2-gangs) and 16mm x 3000mm grounding rod (copper clad). An LPP panel board (Main: 30AT, 2P Branches: 4-30 AT, 2P, Bolt-on Enclosure: NEMA 3R) is also be installed with enclosed circuit breaker. It includes the horizontal layout of pipe, GI Tie Wire Ga. #16 for wires and electrical tape. It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>			<b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b>
10	<p style="text-align: center;"><b>POND</b></p> <p>Irregularly shaped pond with concrete foundation and liners with and area of about 3m x 5m and water depth of 0.8m stationed in front of the vertical garden; provided with 100-watts submersible pump (with back-up pump) to allow water to be circulated; the surroundings is</p>	lot	1	

	<p>landscaped covering an area of about 200 sq.m is using different kind of flowers and ornamentals irrigated with automated drip irrigation. It has mix concrete for slab on fill and Grade 40, 10mm. Reinforcing Steel bar for wall and slab on fill including GI Tie Wire #16 and formworks for columns. This will use tank lining food grade for reservoir as waterproofing. Also, will have 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering. It includes the layout and staking, site clearing and preparation and excavation for structures. This will use 50mm Blue uPVC pipe with hub and fittings with gate valve, 400cc solvent cement, teflon tape and waste cloth. In electrical works, this will have 20mm PVC pipe with fittings for the 3.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire. It also includes the enclosed circuit breaker (30AT, 2P, Bolt-on), horizontal layout of pipe, GI Tie Wire Ga. #16 for wires and an electrical tape. It includes the temporary water facility, temporary electrical facility, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
11	<p><b>PERIPHERAL FENCE AND GATES</b></p> <p>A simple fencing made up of fabricated concrete post with low-cost welded wire to secure the site; about 274 running meters of fencing covering the whole project site; three (3) gates made of steel fixed on concrete posts situated in strategic location in the site; with wicket door and larger door. It has on-site mix concrete for concrete footing and concrete post and ready mix concrete (pumpcrete design) for column footing and column. Also, this will use</p>	lot	1	



	Grade 40, 10mm. Reinforcing steel bar for concrete post, Grade 40, 12mm. Reinforcing steel bar for column footing, concrete footing and concrete post and Grade 60 of 16mm, Grade 40 of 10mm, and Grade 40 of 12mm, reinforcing steel bar for column including Tie Wire #16 and the formworks and shoring of column and concrete post. This will use barbed wire in steel framing, 25mm x 25mm x 2mm tubular bar, 75mm x 75mm x 2mm tubular bar and 25mm flat bar. This will use welded wire mesh 2 inches x 2 inches x 3mm thick and 3 coats of epoxy enamel paint finish for steel members. This will also use 4 inches grinding disc, hacksaw blade, waste cloth, acetylene tank, cut off blade, 20mm drill bit (concrete), oxygen tank and welding rod for steel. It includes the excavation for structures, layout and staking, site clearing and preparation. It includes the temporary water facility, temporary electrical facility, hauling and disposal of construction materials and debris.			
12	<b>PATH WALK</b> A network of 130 running meters of path walks to connect all structures, greenhouses, roads and gates; width about 1.0m wide and installed in 50mm thick gravel bedding and 100mm concrete pavement (P.C.C.P., 0.15m thick, 550 F, 28 days). It includes roadway excavation, layout and staking, and site clearing and preparation. It includes the temporary water facility, temporary electrical facility, clearing, hauling and disposal of construction materials and debris.	lot	1	<b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b>
13	<b>WATER HARVESTING FACILITY</b> Water harvesting facilities from the roofs and stainless roof gutters (0.40mm x 24 inches) of five (5) buildings/structures near/in the site to independently collect rainwater using five (5)1000L IBC tanks using the 75mm PVC Pipe with hub and fittings; tanks covered with thick net shade; includes garden hose with diameter of $\frac{3}{4}$ ' and 40m long; provision of canal leading to the pond besides the Vertical Garden to collect runoff water. It includes layout and staking, and site cleaning and preparation. This will use 400cc solvent cement and waste cloth. It has mix concrete for slab on fill and grade 40, 10mm and 12mm reinforcing steel bar including GI Tie Wire #16. It also has 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering. It includes the temporary water facility, temporary electrical facility, clearing, hauling and disposal of construction materials and debris.	lot	1	
14	<b>MUSHROOM GROW ROOM</b> A mushroom grow room with the area of 4m x 8m and a height of 2.5m with a concrete	lot	1	

	<p>partition in the middle dividing the culture room and panel room. The whole room itself is already existing. It has six (6) racks made of 25.4mm x 1.5mm tubular pipe, 60mm x 3mm (thickness) flat bar and 4 feet x 8 feet x 4mm welded wire occupied by the 5,334 pcs of fruiting bags for the mushrooms. It has the automation and control to monitor the temperature, relative humidity, PH and EC of the moisture in the room by the use of the sensors and the controller. Full spectrum LED lights include for the growth of the mushroom. It includes the plumbing system for misting and the humidifier to moisturize all of the mushroom using the ½ inch PPR Pipe, ½ inch PPR fittings, ½ inch PPR Valve, ½ inch Solenoid Valve, and multi head air. atomizing unit directed from the waterline. It also includes the inoculation, culture paraphernalia and other miscellaneous materials for the production of mushroom. For monitoring, it has a smart IP Camera to monitor the system from time to time. It includes the special welding rod for steel, 4 inches cutting disc, 4 inches grinding disc, 14 inches cut off wheel, epoxy primer (grey), white gloss paint and 1 inch tek screw.</p>			<p><b>Within One Hundred Fifty (150) Calendar Days Upon Issuance of Notice to Proceed</b></p>
***				

I hereby certify to comply and deliver all the above requirements.

Name: \_\_\_\_\_

Legal Capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

Duly authorized to sign the Bid for and behalf of: \_\_\_\_\_

# Section VII. Technical Specifications

## Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

### Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words “*or at least equivalent.*” References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

# Technical Specifications

PROJECT NAME: SUPPLY, DELIVERY AND INSTALLATION OF VERTICAL  
HYDROPONIC MODEL AND OTHERS  
PROJECT NO. QCU-23-HCS-0276B

Item	Specification	Statement of Compliance
		<i>[Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder’s statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i>
A.	With minimum technical specifications:	
1	<p><b>ONE-SQUARE-METER VERTICAL HYDROPONIC MODEL</b></p> <p>A vertical hydroponic garden measuring 1-sq.m and 1.8m tall using tubular bar; with protective roof of 50% Shade UV-resistant plastic, aluminized shade straw net and enclosure of 24 x 24 mesh superfine insect-proof nets around; with six layers of parallel U-shaped 50mm PVC growing tubes joined together by PVC elbows to accommodate about 300 holes for growing leafy vegetables and herbs; nutrient solution is lifted to the uppermost layers of growing tubes from a 200-liters reservoir using interconnected 100mm PVC Pipe with fittings operated by a 60-watts pump (another unit is provided as back-up pump) through a 13mm PVC inflow pipes with fittings and ball valve allowing a film of water enriched with nutrients to be absorbed by plants planted in plastic cups with media and cascade down to the lowest tubes and return to the reservoir; valves are provided to control the flow of water in the inflow pipe to be lifted or to allow the nutrients to circulate in the reservoir during mixing; 10cm caster wheels allow the systems to be moved. Cutting disc and welding rod for steel will be used also, 3 coats of elastomeric paint finish and epoxy enamel paint finish for the exterior wall and steel member will be used, respectively. No. 8 cable tie, 400cc solvent cement, teflon tape, waste cloth and a set of nutrient solution will be used. For electrical system, 20mm PVC and IMC Pipe with its fittings will be used together with 50mm x 100mm PVC Utility box, an LPPA panel board (Main: 30AT, 2P Branches: 1-20 AT, 2P, Bolt-on, 2-30 AT, 2P, Bolt-on Enclosure: NEMA 3R) and enclosed circuit breaker (30AT, 2P, Bolt-on). This will also use</p>	

	<p>3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). Also, horizontal layout of pipe, GI Tie Wire Ga. 16 for wires and electrical tape will be included. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
2	<p><b>ONE-SQUARE-METER VERTICAL AQUAPONIC MODEL</b></p> <p>A vertical aquaponics garden measuring 1-sq.m and 1.8m tall using tubular bar; with protective roof of 50% Shade UV-resistant plastic and aluminized shade straw net and enclosure of 24 x 24 mesh superfine insect-proof nets around; with six layers of U-shaped 50mm and 100mm PVC growing tubes joined together by PVC elbows and cleanouts and 13mm uPVC pipe with hub and fittings with 13mm ball valve to accommodate about 200 holes for growing leafy vegetables and herbs; culture water from 200-L plastic reservoir flow to a 200-L plastic bio filtration tank; operating by a 60-watt pump (another unit is provided as back-up pump) lift the culture water through a 13mm PVC inflow pipes to the uppermost layer of growing tubes allowing a film of water enriched with nutrients produced by fish (about 50 pcs) to be absorbed by plants and cascade down to the lowest tubes and return to the fish tank; valves are provided to control the flow of water in the inflow pipe to allow the nutrient to circulate in the fish tank; 10cm caster wheels allow the systems to be moved; Cutting disc and welding rod for steel will be used. This will use 3 coats of elastomeric paint finish and epoxy enamel paint finish for exterior wall and steel member, respectively. No. 8 cable tie, 400cc solvent cement, teflon tape and waste cloth will be used. For electrical system, 20mm PVC and IMC Pipe with its fittings together with 50mm x 100mm PVC</p>	

	<p>Utility box, a LPPA panel board and enclosed circuit breaker (30AT, 2P, Bolt-on) is also included. This will also use the 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). Also, horizontal layout of pipe, GI Tie Wire Ga. 16 for wire and electrical tape will be included. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6 m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
3	<p><b>HOUSEHOLD HYDROPONIC MODEL FOR LEAFY VEGETABLE (3m x 4m)</b></p> <p>A unit of a gothic roofed tropical greenhouse covered with clear 0.008' thick UV plastic, 50% aluminized shade straw nets, #24 insect-proof net mesh; GI frames; height: 3.25m; width: 3.0m; length: 4.0m for hydroponic production of leafy vegetables and herbs; with ante room with a dimension of 1.0m x 1.2m in front with barn door mechanism and door hinges (3 inches x 3 inches); complete with four racks of parallel 50mm PVC pipes interconnected with PVC elbows and tees using NFT growing system and 20mm GI pipe; capable of growing about 500 plants in a plastic cups with growing media; nutrient solution tank and delivery/return pipe networks; with ante room in front; 1 unit of 400-watts submersible pump (another unit is provided as back-up pump); 1 cu.m IBC nutrient solution reservoir in a water-bath technique using water-proof concrete tank provided with protective shed at the back using UV-resistant plastic sheet and net shade attached to a GI frame. It has 3 cu.m. mix concrete for the pedestal, reservoir and slab on fill with Grade 40 10mm reinforcing steel bar with GI Tie Wire #16 for reservoir, slab on fill, concrete footing and racks while 12mm for the pedestal. It has also food graded tank lining as waterproofing. This will also use 3 coatings epoxy enamel paint finish for the</p>	

	<p>steel member and 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering with 0.30mm plain sheet with connection accessories for the reservoir. This will also use 19mm, 50mm and 75mm GI Pipe, 6mm thick base plate for the structural steel, 50mm x 100mm x 1.5mm tubular bar and 50mm x 75mm 1.2mm C-Purlins including the bolts and nuts (16mm x 200mm anchor bolt). Grinding disc, hacksaw blade, acetylene tank, cut off blade, 14 inches, cutting disc, 20mm drill bit, oxygen tank and welding rod for steel will be used. It includes 50mm PVC Pipe with hub and fittings, 25mm blue uPVC male and female adaptor, 25mm x 13mm unequal tee blue uPVC, 20mm blue uPVC pipe with tee, check valve and ball valve, and 13mm blue uPVC pipe with fitting and ball valve. 400cc solvent cement, teflon tape and waste cloth will be used. In electrical system, 20mm PVC and IMC Pipe with fittings and 22mm<sup>2</sup> solderless connector will be used. It is with 50mm x 100mm PVC Utility Box and 100mm x 100mm PVC Junction box with cover. Also, horizontal layout of pipe, GI Tie Wire, Ga. 16 for wire and electrical tape, rubber tape, hacksaw blade, all around sealant, solvent cement, rugs and torch with butane will be included. For electrical system, 20mm PVC and IMC Pipe with fittings together with 50mm x 100mm PVC Utility box, a LPPA panel board and enclosed circuit breaker (30AT, 2P, Bolt-on). Will used 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26 x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16 mm Φ with 10 mm Φ stirrup spaced at 200 mm, height: 6 m, depth footing: 1.2 m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
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4	<p style="text-align: center;"><b>COMMERCIAL HYDROPONIC MODEL FOR LEAFY VEGETABLE (4m x 8m x 16m)</b></p> <p>A gothic roof greenhouse, covered with clear 0.008’ thick UV-resistant plastic sheet and 50% aluminized shade straw nets roof and #24 insect-proof net mesh as side walls attached to a GI frames with height of 4.0m x width of 8.0m and length of 16m; with growing systems for hydroponic production of fruiting vegetables complete with at least 200 growing bags with coco peat medium and recirculating and automated drip irrigation system; with 1 cu.m nutrient solution reservoir in a water bath connected with the delivery/return pipe networks; with 2 ante rooms in front and back; with 2 units of 1-hp pump (one unit as back-up); with PH control and nutrient solution injectors; with trellis network attached to greenhouse trusses; provided with 1 cu.m IBC reservoir nutrient solution reservoir in a water-bath technique using concrete tank provided with protective shed at the back using UV-resistant plastic sheet and net shade attached to a GI frame. It has 3 cu.m. mix concrete for the pedestal, reservoir and slab on fill with formworks and shoring with Grade 40, 10mm reinforcing steel bar with GI Tie Wire #16 for reservoir, slab on fill, concrete footing and racks while 12mm for the pedestal. It has also food graded tank lining as waterproofing. will use 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering. with 0.30mm plain sheet with connection accessories for the reservoir and 20mm GI Pipe for metal works. This will use 19mm, 50mm and 75mm GI Pipe, 6mm thick base plate, 50mm x 100mm x 1.5mm tubular bar and 50mm x 75mm 1.2mm C-Purlins including the bolts and nuts (16mm x 200mm anchor bolt) for the structural works. This will also use 4 inches grinding disc, hacksaw blade, acetylene tank, cut off blade/wheel, 14 inches cutting disc, 20mm drill bit, oxygen tank, welding rod for steel. This will also have 3 coats of epoxy enamel paint finish for steel member. For the installation of doors, 3 inches x 3 inches door hinges will be used. For the sewer line and drainage system, this will include 75mm, 50mm, and 25mm PVC Pipe with hub and fittings. It also the includes 25mm blue uPVC Pipe with hub and fittings with ball valve and 13mm, 90 degrees elbow and tee equal Blue uPVC. It has 200L blue drum as water tank. Also, this will use 400cc solvent cement, teflon tape, waste cloth and 25mm screen filter. It also includes the excavation for structures, layout and staking, and site cleaning and preparation of the structure. For electrical system, 20mm PVC and IMC Pipe with fittings and 22mm<sup>2</sup> solderless connector will be used. It is with 50mm x 100mm PVC Utility Box. Also, horizontal layout of pipe, GI Tie Wire, Ga. 16 for wires and electrical tape,</p>	
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	<p>rubber tape, hacksaw blade, all around sealant, 400cc solvent cement, rugs and torch with butane will be used. This will also use an LPPA panel board, enclosed circuit breaker (30AT, 2P, Bolt-on) and safety breaker DPST 30A. Will used 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with 2-gangs convenience outlet with grounding system (16mm x 3000mm grounding rod for copper clad). It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10 mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
5	<p><b>KRATKY HYDROPONICS SYSTEM</b></p> <p>Rack made of 25mm x 25mm x 6mm angle bar; height = 1.0m (first layer) and 0.50m (second layer) to accommodate 10 styro boxes with a dimension of 480mm x 620mm x 200mm using styrofoam vessel with 8 holes for growing leafy vegetables and herbs; with protective roof of 50% Shade UV-resistant plastic and aluminized shade straw net with an enclosure of 24 x 24 mesh superfine insect-proof nets around. It has 3 coatings epoxy enamel paint finish for steel member and will also use 4 inches grinding disc for metal, acetylene tank, cut off blade, oxygen tank and welding rod for steel. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete.</p>	
6	<p><b>TERRARIUM VEGETABLE BOX FOR LEAFY VEGETABLE</b></p> <p>Rack made of 25mm x 25mm x 6mm angle bar to accommodate ten (10) terrarium veggie boxes using plastic box 40cm x 60cm x 60cm as vessel with organic soil rich in nutrients for growing leafy</p>	

	<p>vegetables and herbs; It has 3 coatings epoxy enamel paint finish for steel member; with protective roof of 50% Shade UV-resistant plastic and aluminized shade straw net with an enclosure of 24 x 24 mesh superfine insect-proof nets around. This will also use 4 inches grinding disc for metal, acetylene tank, cut off blade, oxygen tank and welding rod for steel. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete.</p>	
7	<p><b>FIELD OFFICE/TRAINING ROOM/ CHILLER /HYDROPONICS SHOW ROOM</b></p> <p>Two 20-footer shipping containers to serve as office and as computer/chilling room; provided with 1 unit of wall mounted split type air-conditioning with 10,900 BTU/Hr., 8.90cfm, 6.35mm L, 9.52mm G 1070 watts and 2 units of wall mounted split type air conditioner with 8,600 BTU/Hr., 9.60 cfm, 6.35mm L, 9.53mm G. The airconditioning system will use 6.35mm and 9.52mm copper coil tubing as roughing-ins and 6.35mm x 20mm and 9.52mm x 20mm thick rubber foam as insulations. It has condensate water drainage system using 20mm uPVC elbow and 20mm x 3m UPVC pipe. This will be covered with clear 0.008' thick UV plastic and 80% aluminized shade nets and enclosed with net mesh as side walls sitting on a concrete foundation and concrete floor; with ante room in front; an attached greenhouse at the back of the receiving are covered with UV-resistant plastic and 50% shade nets and enclosed with net mesh and concrete foundation around; gutters and IBC tanks are provided as water harvesting system; all component facility are provided with locks; comfort rooms for male and female are provided beside the facility with provision of faucets and lights. It has 18 cu.m. mix concrete for the pedestal, column footing and slab on fill with formworks and shoring with 10mm. Reinforcing steel bar Grade 40 for concrete pedestal and Grade 40, 12mm and 10mm. Reinforcing Steel bar and Grade 60 reinforcing steel bar for the column footing, all with tie wire #16. This will use 20mm, 32mm and 50mm GI Pipe for metal works. It includes the layout and staking, site clearing and preparation, excavation for structures and backfill. This will use 4 inches grinding disc for metal, acetylene tank, cut off blade, assorted metal drill bit, oxygen tank and welding rod for steel. It has 4.5mm thick fiber cement board on metal studs (double wall) for wall finishing. It also includes the installation of sets of panel doors (0.90m x 2.1m) and 3 sets of sliding windows (1.00m x 2.5m) with complete accessories. Also, it includes that 50mm and 100mm PVC Pipe with its hub and fittings and</p>	

	<p>75mm x 50mm reducer for the drainage system. Additionally, 13mm blue uPVC Pipe with hub, tee equal and ball valve, 25mm blue uPVC pipe with hub and fittings including check valve and ball valve, and 50mm blue uPVC pipe with hub and fittings will be included. It is for sewer line and drainage system. It is operated by 100W submersible pump 220VAC/1-phase. This will also use 400cc solvent cement, teflon tape and waste cloth. For electrical system, this will use 20mm, 32mm, and 40mm PVC pipes and 25mm and 32mm IMC Pipe including fittings, 50mm x 100mm PVC Utility Box and 100mm x 100mm PVC Junction Box with Cover. Will also use 3.5mm<sup>2</sup>, 5.5mm<sup>2</sup>, 14mm<sup>2</sup> and 38mm THHN Wire, 22mm<sup>2</sup> THW Wire and 3.5mm<sup>2</sup> TW Wire and 8mm<sup>2</sup> TW Wire. It has switches with plate and cover with 1 gang and 2 gangs. Also, 2-gangs convenience outlet with grounding. It has sets of LED High Bay Lighting Fixture and 600mm x 1200mm 2x18W LED troffer type with accessories (Surface mounted type). It has grounding system of 16mm x 3000mm grounding rod (copper clad) with ground and MDP (Main: 60AT, 2P; Branches: 12-30 AT, 2P, Bolt-on; Enclosure: NEMA 1 with ground terminals) and LPP Panel boards (Main: 60AT, 2P; Branches: 3-20 AT, 2P, Bolt-on; Enclosure: NEMA 1 with ground terminals). It includes the enclosed circuit breaker (30AT, 2P, Bolt-on), Horizontal Layout of Pipe and Vertical Layout of Pipe. This will use hacksaw blade, all around sealant, 400cc solvent cement, torch with butane, rugs, GI Tie Wire with Ga. 16 for wires, electrical tape, pulling lubricant, waste cloth, 50mm x 10m duct tape, brazing rod 10pcs/box) and 25mm wide x 50m long polyethylene tape. It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This include the billboard about the project. (1.20m x 2.40m tarpaulin attached in Plywood. It includes name of the project, location, the name of the contractor, the budget of the project costs and the duration of the project.) This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by</p>	
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	<p>13KwP Solar Facility with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
8	<p><b>GABLE-ROOFED GREENHOUSE WITH AQUAPONICS SYSTEM</b></p> <p>A gable-roof GI structure for aquaponics production of vegetables and herbs with GI frames, Height: 3.5m; Width: 4.0m: Length: 8.0m; complete with cascading NFT system with about two parallel growing tubes and water bath and nutrient reservoir; with ante room; trusses will be painted; and covered with clear 0.008’ thick UV-resistant plastic sheet, 50% net shade and #24 net mesh as side walls; provided with 1 unit of 100-watt submersible pump (another unit is provided as back-up pump); complete with four racks of parallel 2 in PVC pipes interconnected with PVC elbows NFT growing system capable of growing about 800 plants in a plastic cups with growing media; with water-proof concrete fish tank diameter of 2-meter in diameter with conical bottom (height=0.5m) capable of rearing about 800 fish and a water-proof concrete bio filtration tank with a dimension of 0.5m deep x 0.5 m wide x 2.0 m long both provided with protective shed at the back using 0.008’ thick UV-resistant plastic sheet and net shade attached to a GI frame. It includes the excavation for structures, layout and staking, site clearing and preparation and backfill. It has mix concrete for slab on grade, slab on fill, concrete footing and pedestal. This will also use Grade 40, 10mm and 12mm Reinforcing Steel bar including the tie wire #16. Tank lining food grade waterproofing will be used for the fish tank. This will have 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering, and base plate, tubular bar and c-purlins. Also, this will also use 35mm, 50mm, 75mm, 20mm GI Pipe for metal works. And will use also the corrugated 0.60mm thick with connection accessories (any color) for the roofing of the fish tank. It also includes the use of 4 inches grinding disc for metal, 400cc solvent cement, teflon tape, waste cloth, acetylene tank, cut off blade, assorted metal drill bit, oxygen tank, welding rod, 2 inches x 2 inches x 2mm thick welded wire mesh, superfine net 24 x 24 mesh for walls and a set of barn door mechanism with door hinges 3 inches x 3 inches for the installation of doors. This will use 50mm and 100mm PVC pipe with hub and fittings with 75mm x 50mm reducer. It also uses the 13mm, 25mm and 50mm blue uPVC pipe with hub and fittings with 13mm and 25mm ball valve and 25mm check valve. It is for the sewer line and drainage system. In electrical system, this will use 20mm PVC and IMC</p>	

	<p>pipe with fittings and 22mm<sup>2</sup> solderless connector and 50mm x 100mm PVC Utility box. This will also use 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire with convenience outlet with grounding (2-gangs) and 16mm x 3000mm grounding rod (copper clad). A panel board (LPP) with the following specifications; (Main: 30AT, 2P Branches: 4-30AT, 2P, Bolt on Enclosure: NEMA 3R) is also included together with the enclosed circuit breaker (30AT, 2P, Bolt-on), horizontal layout of pipe, GI Tie Wire Ga. #16 for wires and electrical tape. It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
9	<p><b>ATTACHED GREENHOUSE WITH TOWER HYDROPONICS</b></p> <p>A tropical gothic greenhouse measuring 4m high x 4m wide and 6m long for tower hydroponics system attached to the back of the wall garden; covered with clear 0.008' thick UV-resistant plastic and 50% net shade and superfine insect-proof net for walls; provided with ante room 1.0m x 1.2m with sliding door on one side, standing in the interior are four rows of tower garden fabricated out of 6 in diameter PVC pipe and irrigated with a mist system allowing the nutrient solution to pass through the interior of the tower to provided nutrition to the plants planted in plastic cups; a cascading NFT systems with four layers of growing tubes on one side is can be added to maximize the space; it utilizes the reservoir of the wall garden but with separate pump (another pump is provided as back up). A wall garden is attached to the greenhouse. A wall of about 4.0m x 6.0m using marine plywood attached to GI posts and ¼' x 1 inch angle bar frame converted into a vertical</p>	

<p>garden with wool attached to the frame; pouches are cut onto the wool where edible plants are inserted to form the letters of “PLANT, PLANT, PLANT QCU and GROWQC” with background of other types of edible plants; automatically irrigated by drip from the top that cascades down to provide nutrition on the plants and collected on the lowest level of the wall to return to the nutrient solution reservoir; a 1 cu.m IBC tank serves as reservoir in a water bath system. It includes the layout and staking on site and site clearing and preparation. This will use 20mm GI Pipe, plain sheet 0.30mm with connection accessories (any color) for the roofing of nutrient solution reservoir, 25mm x 25mm x 6mm thick angle bar, 50mm GI Pipe Sch. 40 and 19mm GI Pipe Sch. 40 for metal works. It includes the use 4 inches grinding disc, hacksaw blade, acetylene tank, cut off blade, 14 inches cutting disc, 20mm drill bit for concrete, oxygen tank and welding rod. This will also use 3 coats of epoxy enamel paint finish for steel members. It includes the installation of doors, barn door mechanism with door hinges 3 inches x 3 inches (butt hinges). Also, for the sewer line and drainage system, this will use 100mm and 150mm PVC pipe with hub with fittings (elbows and tee) and 75mm x 50mm reducer. This will have the 50mm, 25mm and 13mm blue uPVC pipe with hub with its fittings, 13mm and 25mm ball valve, and 25mm check valve. The system is operated by the 100W submersible pump. It includes the following consumables like 400cc solvent cement, teflon tape and waste cloth. For electrical system, this will use 20mm of PVC and IMC Pipe with fittings including 22mm<sup>2</sup> solderless connector and 50mm x 100mm PVC utility box for 3.5mm<sup>2</sup> THHN wire, 5.5mm<sup>2</sup> THHN wire and 3.5 TW wire with convenience outlet with grounding (2-gangs) and 16mm x 3000mm grounding rod (copper clad). An LPP panel board (Main: 30AT, 2P Branches: 4-30 AT, 2P, Bolt-on Enclosure: NEMA 3R) is also be installed with enclosed circuit breaker. It includes the horizontal layout of pipe, GI Tie Wire Ga. #16 for wires and electrical tape. It includes the temporary water facility, temporary electrical facility, scaffolding, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length</p>	
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	<p>and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.</p>	
10	<p style="text-align: center;"><b>POND</b></p> <p>Irregularly shaped pond with concrete foundation and liners with and area of about 3m x 5m and water depth of 0.8m stationed in front of the vertical garden; provided with 100-watts submersible pump (with back-up pump) to allow water to be circulated; the surroundings is landscaped covering an area of about 200 sq.m is using different kind of flowers and ornamentals irrigated with automated drip irrigation. It has mix concrete for slab on fill and Grade 40, 10mm. Reinforcing Steel bar for wall and slab on fill including GI Tie Wire #16 and formworks for columns. This will use tank lining food grade for reservoir as waterproofing. Also, will have 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering. It includes the layout and staking, site clearing and preparation and excavation for structures. This will use 50mm Blue uPVC pipe with hub and fittings with gate valve, 400cc solvent cement, teflon tape and waste cloth. In electrical works, this will have 20mm PVC pipe with fittings for the 3.5mm<sup>2</sup> THHN Wire and 3.5mm<sup>2</sup> TW Wire. It also includes the enclosed circuit breaker (30AT, 2P, Bolt-on), horizontal layout of pipe, GI Tie Wire Ga. #16 for wires and an electrical tape. It includes the temporary water facility, temporary electrical facility, clearing, hauling and disposal of construction materials and debris. This structure covered by the temporary enclosure with the specification of the following; Height = 2.4 made of Corrugated GI Sheet, GA 26m x 2.44m, 50mm Φ GI Pipe Schedule 80 with GI Clamp. For pedestal, this will use 10mm Φ Rebar with site mix concrete. This also includes the distribution post with the following specifications: Column Section: 0.40m x 0.40m, column rebar: 8-16mm Φ with 10mm Φ stirrup spaced at 200mm, height: 6m, depth footing: 1.2m, footing dimension: 1.2m x 1.2m x .30m, footing rebar: 8-16mm Φ both ways (along length and width). The materials to be used are the site mix concrete, gravel bedding, grade 60 deformed bars, grade 40 deformed bars, formworks and the scaffolding. It is powered by solar panel with battery, charge controller, inverter, PV wires #16, stand with frame, DC &amp; AC breaker, swing type plug, terminal lugs, end clamp, rail bar and L-foot clamp. Also including the items for IoT and</p>	

	automation such as temperature sensor, PH sensor, RH sensor, EC sensor, data logger and sim tool kit.	
11	<p><b>PERIPHERAL FENCE AND GATES</b></p> <p>A simple fencing made up of fabricated concrete post with low-cost welded wire to secure the site; about 274 running meters of fencing covering the whole project site; three (3) gates made of steel fixed on concrete posts situated in strategic location in the site; with wicket door and larger door. It has on-site mix concrete for concrete footing and concrete post and ready mix concrete (pumpcrete design) for column footing and column. Also, this will use Grade 40, 10mm. Reinforcing steel bar for concrete post, Grade 40, 12mm. Reinforcing steel bar for column footing, concrete footing and concrete post and Grade 60 of 16mm, Grade 40 of 10mm, and Grade 40 of 12mm, reinforcing steel bar for column including Tie Wire #16 and the formworks and shoring of column and concrete post. This will use barbed wire in steel framing, 25mm x 25mm x 2mm tubular bar, 75mm x 75mm x 2mm tubular bar and 25mm flat bar. This will use welded wire mesh 2 inches x 2 inches x 3mm thick and 3 coats of epoxy enamel paint finish for steel members. This will also use 4 inches grinding disc, hacksaw blade, waste cloth, acetylene tank, cut off blade, 20mm drill bit (concrete), oxygen tank and welding rod for steel. It includes the excavation for structures, layout and staking, site clearing and preparation. It includes the temporary water facility, temporary electrical facility, hauling and disposal of construction materials and debris.</p>	
12	<p><b>PATH WALK</b></p> <p>A network of 130 running meters of path walks to connect all structures, greenhouses, roads and gates; width about 1.0m wide and installed in 50mm thick gravel bedding and 100mm concrete pavement (P.C.C.P., 0.15m thick, 550 F, 28 days). It includes roadway excavation, layout and staking, and site clearing and preparation. It includes the temporary water facility, temporary electrical facility, clearing, hauling and disposal of construction materials and debris.</p>	
13	<p><b>WATER HARVESTING FACILITY</b></p> <p>Water harvesting facilities from the roofs and stainless roof gutters (0.40mm x 24 inches) of five (5) buildings/structures near/in the site to independently collect rainwater using five (5)1000L IBC tanks using the 75mm PVC Pipe with hub and fittings; tanks covered with thick net shade; includes garden hose with diameter of ¾" and 40m long; provision of canal leading to the pond besides the Vertical Garden to collect runoff water. It includes layout and staking, and site cleaning and preparation. This will use 400cc solvent cement and waste cloth. It has mix concrete for slab on fill and grade 40, 10mm and 12mm reinforcing steel bar including GI Tie Wire #16. It</p>	



	also has 150mm CHB Wall Laying including mortar, reinforcement and two-face plastering. It includes the temporary water facility, temporary electrical facility, clearing, hauling and disposal of construction materials and debris.	
14	<p><b>MUSHROOM GROW ROOM</b></p> <p>A mushroom grow room with the area of 4m x 8m and a height of 2.5m with a concrete partition in the middle dividing the culture room and panel room. The whole room itself is already existing. It has six (6) racks made of 25.4mm x 1.5mm tubular pipe, 60mm x 3mm (thickness) flat bar and 4 feet x 8 feet x 4mm welded wire occupied by the 5,334 pcs of fruiting bags for the mushrooms. It has the automation and control to monitor the temperature, relative humidity, PH and EC of the moisture in the room by the use of the sensors and the controller. Full spectrum LED lights include for the growth of the mushroom. It includes the plumbing system for misting and the humidifier to moisturize all of the mushroom using the ½ inch PPR Pipe, ½ inch PPR fittings, ½ inch PPR Valve, ½ inch Solenoid Valve, and multi head air. atomizing unit directed from the waterline. It also includes the inoculation, culture paraphernalia and other miscellaneous materials for the production of mushroom. For monitoring, it has a smart IP Camera to monitor the system from time to time. It includes the special welding rod for steel, 4 inches cutting disc, 4 inches grinding disc, 14 inches cut off wheel, epoxy primer (grey), white gloss paint and 1 inch tek screw.</p>	
<b>B.</b>	<b>Compliance to the Schedule of Requirements (Section VI)</b>	

I hereby certify to comply and deliver all the above requirements.

Name: \_\_\_\_\_

Legal Capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

Duly authorized to sign the Bid for and behalf of: \_\_\_\_\_

## ***Section VIII. Checklist of Technical and Financial Documents***

### **Notes on the Checklist of Technical and Financial Documents**

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

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

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

# Checklist of Technical and Financial Documents

## I. TECHNICAL COMPONENT ENVELOPE

### *Class “A” Documents*

#### Legal Documents

- ☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) **in accordance with Section 8.5.2 of the IRR;**

#### Technical Documents

- ☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid (in a **FORM prescribed by the QC-BAC-GOODS AND SERVICES); and**
- ☐ (c) Statement of the bidder’s Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents (in a **FORM prescribed by the QC-BAC-GOODS AND SERVICES); and**
- ☐ (d) 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**
- ☐ (e) Conformity with Section VI. (Schedule of Requirements) and Section VII. (Technical Specifications), which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**
- ☐ (f) 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

- ☐ (g) The prospective bidder’s computation of Net Financial Contracting Capacity (NFCC) (in a **FORM prescribed by the QC-BAC-GOODS AND SERVICES);**  
**or**  
A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

### *Class “B” Documents*

- ☐ (h) If applicable, a duly signed joint venture agreement (JVA) 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.

#### Other documentary requirements under RA No. 9184 (as applicable)

- ☐ (i) *[For foreign bidders claiming by reason of their country’s extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.
- ☐ (j) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

## II. FINANCIAL COMPONENT ENVELOPE

- ☐ (a) Original of duly signed and accomplished Financial Bid Form; **and**
- ☐ (b) Original of duly signed and accomplished Price Schedule(s).

## IV. REQUIRED DOCUMENTS in BDS SECTION 20.2 and 21.2

- **Notarized Affidavit of Undertaking stating compliance to the following:**
  - a. The provider shall have a technical knowledge on the principle of aquaponics, hydroponics and mushroom production
  - b. The provider shall have at least two years experience on design/fabrication/construction of automated mushroom production, hydroponics and aquaponics with solar assembly
  - c. The provider shall have at least seven (7) projects accomplished related to mushroom, aquaponics and/or hydroponics
  - d. The provider shall have a designated licensed agricultural engineer for the project
  - e. Installation included

Note:

1. Please refer to  
[[https://drive.google.com/file/d/1uiYurh5WrpBL5B\\_pqpzAb62yucAbIR1p/view?usp=sharing](https://drive.google.com/file/d/1uiYurh5WrpBL5B_pqpzAb62yucAbIR1p/view?usp=sharing)] for the following requirements:
  - a. Computation of NFCC;
  - b. List of All Ongoing Contracts/List of Contracts already awarded but not yet started;
  - c. Statement of Single Largest Completed Contract
2. Please refer to GPPB Resolution No. 16-2020 for the following requirements:
  - a. Bid Form;
  - b. Price Schedule (for Goods Offered from Abroad/ Within the Philippines)
  - c. Bid Securing Declaration; and
  - d. Omnibus Sworn Statement

