



Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Regional Field Office No. 1
Aguila Road, Sevilla, San Fernando City, La Union
Telephone Nos. (072) 242 1045/1046



DESIGN AND BUILD FOR MONOLITHIC DOME TYPE COLD STORAGE

TERMS-OF-REFERENCE

I. BACKGROUND

The Department of Agriculture – Regional Field Office I (DA-RFO I) through the approved allocation for capital outlays under **BAYANIHAN II FUND** intends to apply the sum of **FORTY MILLION PESOS (PhP40,000,000.00)** being the approved budget for the construction of **two units Monolithic Dome Type Cold Storage** through a design and build scheme.

II. OBJECTIVE

Ilocos Region is in need of Cold Storage Facilities to prolong the shelf life of farmers' produce. This is to increase their income through maintaining the quality of produce while waiting for the good/higher market price.

The construction of Monolithic Dome Type Cold Storage is one of a kind in the region that requires advanced engineering or construction technologies or whose intellectual property rights belong to private company. And where design, equipment, plant and construction can be provided exclusively by a company or where manufacturer know how is important in the construction of such facility. Hence, the structure will be executed through environmentally sensitive designs, with very low impact on the environment

III. CONCEPTUAL PLAN

A conceptual plan was prepared by DA-RFO I, however, this plan shall serve as reference only. DA-RFO I does not guarantee that the data is fully correct, updated, and applicable to the project at hand. The winning bidder is responsible for the accuracy and applicability of all data. The conceptual plan is hereto attached as Annex "A".

Prospective bidders may introduce an entirely new concept subject to the design parameters, performance standards and space requirements set by this "Terms-of-Reference" (TOR).

IV. ORGANIZATIONAL STRUCTURE

DA-RFO I is a government institution headed by the Regional Executive Director, two (2) Technical Directors and with eight Divisions.

An innovative approach to the design must be incorporated to accommodate future needs of the farmers and the department.



Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Regional Field Office No. 1
Aguila Road, Sevilla, San Fernando City, La Union
Telephone Nos. (072) 242 1045/1046



V. PROJECT DESCRIPTION AND LOCATION

The project is to be implemented in two (2) stages namely the design stage and construction stage. In the design stage, the contractor shall be required to prepare and submit design plans that are compliant with the design parameters and performance specifications set by this TOR. The construction stage shall commence after all clearances and/or permits from DA-RFO I, Local Government Unit concerned and other concerned agency are secured by and/or issued to the contractor.

The structure shall be designed for around six meters in height and will be constructed on a one thousand three hundred (1,300) square meter parcel within portion located in **San Juan, Ilocos Sur and Rosales, Pangasinan**. Prospective bidders shall be required to submit a construction schedule incorporating the above-mentioned arrangement. The design shall be prepared to meet applicable requirements of the following Laws, Codes and Standards:

- a) National Building Code of the Philippines and its referral Codes including the Green Building Code;
- b) Comprehensive Fire Code of the Philippines;
- c) Occupational Safety and Health Standards;
- d) Accessibility Law (BP 344); and
- e) Other laws and regulations covering environmental concerns and regulations.

In cases where there are conflicts in the provisions of the above stated Laws, Codes and Standards, the most stringent provision shall apply.

VI. DESIGN PARAMETERS AND PERFORMANCE STANDARDS

The design parameters and performance standards are required to ensure that all aspects in the design and construction stages attain minimal impact to the environment while providing DA-RFO I a cold storage that is resilient, of high standards and in harmony with its surroundings.

a. Design Parameters:

- i. Site Analysis. A detailed site investigation shall be conducted for the purpose of analysis, recording and evaluating information's on the project site and its surroundings. The result of the analysis shall be used in the design process. The analysis shall include:
 - Building Orientation;
 - Wind Direction;
 - Soil Type and Condition;
 - Topography;
 - Vegetation and Natural Features;
 - Precipitation & Hydrology;
 - Surrounding land uses & buildings;
 - Prominent Vision lines / Visual linkages; and
 - Locally available resources

A food-secure Philippines
with prosperous farmers and fisherfolk





Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Regional Field Office No. 1
Aguila Road, Sevilla, San Fernando City, La Union
Telephone Nos. (072) 242 1045/1046



- ii. **Site Planning.** This parameter shall be incorporated during the design of the building and shall include:
 - Shape, size and orientation of the area where the building will be built;
 - Levels and contours of the area and its surroundings;
 - Height of existing buildings and its surroundings;
 - Open spaces surrounding the property;
 - Natural or man-made structures;
 - Street including drainages and utility poles;
 - Movement system through and around the site;
- iii. **Building Envelope.** This involves using exterior wall materials and designs that are climate-appropriate, structurally sound and aesthetically pleasing.
 - Support (Resistance to and transfer of structural and dynamic loads)
 - Control (Control of air, water and heat flow)
 - Finish (Desired aesthetics on the inside and outside of the building)
- iv. **Engineering and Architectural Parameters.** Design of the building shall be responsive to economic, environmental, and cultural conditions through the following:
 - **Building Height and Massing.** Height of the building in relation to its overall configuration.
 - **Space Planning.** Structure Components shall be addressed. Special attention should be made to the selection of interior finishes and art installations, particularly in entry and exit spaces and other areas with worker and public access.
 - **Functional/Operational Planning.** The building design must consider the integrated requirements of the Structure Components. This includes the desired image, degree of public access, operating hours, security issues and vulnerability assessment results, manpower/worker size requirements, electronic equipment and technology requirements, acoustical requirements, special floor loading and filing/storage requirements, special utility services, any material handling or operational process flows, special health hazards, use of vehicles and economic objectives.
 - **Flexibility.** The cold storage must easily and economically accommodate frequent renovation and alteration. These modifications may be due to management reorganization, personnel shifts, changes in business models, or the advent of technological innovation, but the office infrastructure, interior systems, and furnishings must be up to the challenge.
 - **Employee/Worker Productivity.** Employee/Worker satisfaction, health, and comfort are of primary concern. Strategies such as excellent indoor air quality, access to windows and views, opportunities for interaction, and natural light are some of the factors that contribute to improved workplace that are important to the health and psychological well-being of the occupants. Special consideration must be given to noise control in open office and work area settings, with absorptive finish materials, masking white noise.
 - **Technical Connectivity.** Technology is indispensable tool for DA-RFO I. The structure shall be planned to have a well distributed, robust, and flexible IT infrastructure. All technological systems such as audio/visual systems, speaker systems, internet access and Local Area Networks (LAN) / Wide-Area Networks (WAN) / Wireless Fidelity (WI-FI) shall be a major component of the design.



Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Regional Field Office No. 1
Aguila Road, Sevilla, San Fernando City, La Union
Telephone Nos. (072) 242 1045/1046



- b) Performance Standards. The design and construction of the building shall conform to the following standards:
- i. Energy Efficiency. Requires the adoption of efficient practices, designs, methods and technologies that reduce energy consumption resulting in cost savings.
 - ii. Water Efficiency. Requires the adoption of efficient practices, plan, design, materials, fixtures, equipment and methods that reduce water consumption resulting in cost savings.
 - iii. Material Sustainability. Material Sustainability governs all matters related to resource efficiency and material selection and use with the least impact on the environment.
 - iv. Solid Waste Management. Efficient waste management requires the adoption of efficient waste management practices and use of eco-friendly materials.
 - v. Site Sustainability. Requires the adoption of planning, design, construction and operation practices that minimize the adverse impact of buildings on ecosystems and water resources.
 - vi. Indoor Environmental Quality. Requires the adoption of efficient design and operation practices that take into consideration the building environment to improve occupant health, productivity and safety.

VII. SCOPE OF WORKS

The scope of works for the project shall involve the following activities:

- a) Preliminary Investigations. These shall include, among others, information on soil, geotechnical, hydrologic, hydraulic, seismic, traffic, and environmental conditions that shall be used to define project design of the building and to set the basis for the financial proposal of the prospective bidders.
- b) Preliminary Survey and Mapping. These shall determine boundaries and provide stationing along control lines to establish feature and design criteria location and identify existing and future right-of-way limits and construction easements associated with the project.
- c) Preparation of Detailed Engineering Design and Estimate. Upon award of the design and build contract, the winning bidder shall be responsible for the preparation and submission of all necessary detailed engineering investigations, surveys and designs as stated hereunder. DA – RFOI has the right to require other documents as it may deemed necessary.
 - 1) Survey Plan and Returns
 - 2) Site Investigation Report
 - 3) Soils and Foundation Investigation Report
 - 4) Construction Materials Investigation Report
 - 5) Technical Specifications

A food-secure Philippines
with prosperous farmers and fisherfolk





Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Regional Field Office No. 1
Aguila Road, Sevilla, San Fernando City, La Union
Telephone Nos. (072) 242 1045/1046



- 6) Bill of Quantities and Cost Estimates
- 7) Program of Work
- 8) Proposed Construction Schedule (and estimated Cash Flow)
- 9) Site or Right-of-Way Plans including Schedule of Acquisition (if applicable)
- 10) Design Report
- 11) Environmental Impact Statement for critical project as defined by the Department of Environment and Natural Resources (DENR)
- 12) Construction Safety and Health Program

VIII. Construction and Completion Stage. Implementation of the project shall be governed by applicable provisions of R.A 9184 and its revised IRR. The Contractor shall be responsible for obtaining all necessary information as risks, contingencies and other circumstances which may affect the works and shall prepare and submit all necessary documents specified by DA – RFO I to meet all regulatory approvals as specified in the contract documents. The Contractor shall submit a detailed program of work within fourteen (14) calendar days after the issuance of the Notice to Proceed for approval by DA – RFO I that shall include, among others:

- 1) The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and construction;
- 2) Periods for review of specific outputs and any other submissions and approvals;
- 3) Sequence of timing for inspections and tests as specified in the contract documents;
- 4) General description of the design and construction methods to be adopted; Number and names of personnel to be assigned for each stage of the work; List of equipment required on site for each major stage of the work; and Description of the quality control system to be utilized for the project.

Any errors, omissions, inconsistencies, inadequacies or failure submitted by the contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the contractor's cost. If the Contractor wishes to modify any design or document which has been previously submitted, reviewed and approved, the contractor shall notify DA – RFO I within a reasonable period of time and shall shoulder the cost of such changes.

IX. PROCUREMENT PROCESS

Following the procedures and requirements for a design and build scheme, the following additional requirements shall be included in the Technical Proposal:

- a) Preliminary Conceptual Design Plans.
 - i. At least four (4) perspective views of the building;
 - ii. Floor plans;
 - iii. Four (4) elevations;
 - iv. Two (2) sections
 - v. A 3D visual presentation of the building including a walk-through animation of the interior and exterior views.
- b) Value engineering analysis of design and construction method.

A food-secure Philippines
with prosperous farmers and fisherfolk





Republic of the Philippines
DEPARTMENT OF AGRICULTURE
Regional Field Office No. 1
Aguila Road, Sevilla, San Fernando City, La Union
Telephone Nos. (072) 242 1045/1046



- X. **SPACE REQUIREMENTS.** The space requirements shown in the table below shall be incorporated in the space planning:

Structure Components	Area (m2)
Dome Cold Storage	180
2-Loading Dock	30
Pre-Cooling Room	30
Washing/Rinsing Area	30
Sorting Area	42
Palletizing Area	42
Office Area	24
Toilets for male, female and person with disability	16

XI. **GENERAL CONDITIONS**

- There shall be sufficient materials, equipment and manpower on site;
- Proper protocol on local government units related to COVID-19 pandemic shall be observed and;
- Proper sanitation and used of personal protective equipment should be observed at the construction site.

Prepared by:

Recommending Approval:


DENNIS I. TACTAG, ABE
RAED Chief


ERLINDA F. MANIPON
OIC-RTD for Operation

APPROVED:


NESTOR D. DOMENDEN, CESO IV
OIC-Regional Executive Director

A food-secure Philippines
with prosperous farmers and fisherfolk

