



Republic of the Philippines
BULACAN AGRICULTURAL STATE COLLEGE
Office of Bids and Awards Committee
Pinaod, San Ildefonso, Bulacan, Philippines 3010

February 24, 2022

Bid Bulletin No. 1

| | |
|------------------------------|---|
| Name of Project: | 2022-01-INFRA: Upgrading of Five (5) Units of Greenhouses at BASC College of Agriculture Campus and One(1) Unit at DRT Campus to Automated Greenhouses |
| ABC: Php30,000,000.00 | |

This Bid Bulletin No. 1 is issued to modify or amend items in the Bidding Documents for the above cited project. This shall form an integral part of the said Bidding Documents.

I. Section VI. Specifications

The following sections in the Specifications are hereby amended, to wit:

| | From | To |
|------------------------------|---|--|
| Growing System | <p>B. NFT SYSTEM WITH MOVABLE BENCHES FOR LEAFY VEGETABLE</p> <p>NFT system for 200 m2 net area greenhouse Capacity : 3,024 plants at one setting Automatic Fertigation autogrow included NFT stand</p> | <p>B. NFT SYSTEM WITH MOVABLE BENCHES FOR LEAFY VEGETABLE</p> <p>NFT system for 200 m2 net area greenhouse Capacity : 3,024 plants at one setting <u>Automatic Fertigation Controller</u> <u>EC-3 injectors, ph-1 injectors</u> NFT stand</p> |
| Controls and Instrumentation | <p>Climate Control System with Graphic Terminals</p> <p>a. The programmable logic controller (PLC) shall be an embedded I/O design, with I/O expansion capability.</p> <p>Micro850 Programmable Logic Controller</p> <p>Supplier shall provide up to date letter of appointment from Manufacturer as distributor for Philippines to provide sales and after sales services</p> <p>A single chassis shall house CPU, memory, embedded I/O circuitry, communications, I/O expansion slot, and power supply.</p> <p>The PLC shall be designed to operate in an industrial environment with an ambient temperature of -20 °C to 65 °C (-4 °F to 149</p> | <p>Climate Control System with Graphic Terminals</p> <p>a. The programmable logic controller (PLC) shall be an embedded I/O design, with I/O expansion capability.</p> <p><u>Programmable Logic Controller System</u></p> <p>Supplier shall provide up to date letter of appointment from Manufacturer as distributor for Philippines to provide sales and after sales services</p> <p>A single chassis shall house CPU, memory, embedded I/O circuitry, communications, I/O expansion slot, and power supply.</p> <p>The PLC shall be designed to operate in an industrial environment with an</p> |



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| | <p>°F) and with a relative humidity range of 5% to 95%, non-condensing.</p> <p>The PLC shall be designed to operate in a free airflow environment (convection cooling only, no fans or other air moving devices shall be required).</p> <p>The PLC shall be designed and tested to operate in high electrical noise environments.</p> | <p>ambient temperature of -20 °C to 65 °C (-4 °F to 149 °F) and with a relative humidity range of 5% to 95%, non-condensing.</p> <p>The PLC shall be designed to operate in a free airflow environment (convection cooling only, no fans or other air moving devices shall be required).</p> <p>The PLC shall be designed and tested to operate in high electrical noise environments.</p> |
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II. Section VIII. Bill of Quantities

| | From | To |
|-------------|--|---|
| I. | PRELIMINARY AND GENERAL WORKS | No Changes |
| | Mobilization and Demobilization | No Changes |
| | Securing Permits and Licenses | No Changes |
| | Site Survey and Soil Investigation | No Changes |
| | Site Development/ Staging and Disposal Area | No Changes |
| | Temporary Facilities | No Changes |
| | Insurance and Performance Bond | No Changes |
| II. | CIVIL WORKS | No Changes |
| | Clearing, grubbing and grading | No Changes |
| | Excavation Works | No Changes |
| | Concreting/ Reinforcing Bar Works and Formworks | No Changes |
| | Masonry & Plumbing Works | No Changes |
| | Fabricate, install and erect TUNNEL TYPE GREENHOUSE (W10m X L20m X H3.50m) | No Changes |
| III. | Motorized SHADING SCREEN Using Aluminet 40% Shading | No Changes |
| | Motorized Shading Screen using 400W Shading Motor, 40% Shading Aluminet connected to Climate Control | No Changes |
| IV. | GROWING SYSTEM | No Changes |
| | C1. TABLES AND FRAMES FOR ORNAMENTALS | No Changes |
| | Tables for ornamental 1.7m x 2.8m | No Changes |
| | Micro Sprinkler System | No Changes |
| | Irrigation System | No Changes |
| | C2. NFT SYSTEM WITH MOVABLE BENCHES FOR LEAFY VEGETABLE | No Changes |
| | NFT SYSTEM for 200m ² Net Area Greenhouse | No Changes |
| | Capacity: 3,024 Plants at one setting | No Changes |
| | Automatic Fertigation Autogrow - Included | <u>Automatic Fertigation Controller EC-3</u> |



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| | | <u>injectors, ph-1 injectors</u> |
| | NFT Stand | No Changes |
| V. | CONTROLS AND INSTRUMENTATION | No Changes |
| 1 | Climate Control System with Graphic Terminals / HMI (Human Machine Interface) and programmable logic controller (PLC) Specifications: | No Changes |
| A. | The programmable logic controller (PLC) shall be an embedded I/O design, with I/O expansion capability. | No Changes |
| | Micro850 Programmable Logic Controller | <u>Programmable Logic Controller System</u> |
| | Supplier shall provide up to date letter of appointment from Manufacturer as distributor for Philippines to provide sales and after sales services | No Changes |
| | A single chassis shall house CPU, memory, embedded I/O circuitry, communications, I/O expansion slot, and power supply. | No Changes |
| | The PLC shall be designed to operate in an industrial environment with an ambient temperature of -20 °C to 65 °C (-4 °F to 149 °F) and with a relative humidity range of 5% to 95%, non-condensing. | No Changes |
| | The PLC shall be designed to operate in a free airflow environment (convection cooling only, no fans or other air moving devices shall be required). | No Changes |
| | The PLC shall be designed and tested to operate in high electrical noise environments. | No Changes |
| B. | The system shall support up to 5 front expansion modules (input/output, discrete or analog, communication, memory backup, trim pot) and 4 side expansion I/O modules (input/output, discrete or analog) for a total of up to 132 discrete I/O. | No Changes |
| | The plug-in and expansion modules shall be front accessible. | No Changes |
| | Isolation shall be between all internal logic and external circuits. | No Changes |
| | Each discrete input and output point shall have a visual indicator to display ON/OFF status. | No Changes |
| | All user wiring to I/O modules shall be through a heavy-duty terminal strip. Pressure-type screw terminals shall be used to provide fast, secure wire connections. | No Changes |
| 2 | PLC CPU | No Changes |
| A. | The CPU shall be a self-contained unit and will be capable of: | No Changes |
| | Providing system timing and scheduling I/O updates. | No Changes |
| | Controlling all I/O scanning and communications service. | No Changes |
| | Performing internal diagnostic checks and providing visual indication by illuminating a “green” indicator when no fault is detected and a “red” indicator when a fault is detected. | No Changes |
| B. | The CPU’s ports shall include: | No Changes |



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| | One dedicated serial port which supports RS-232-C and RS-485 signals. | No Changes |
| | One RJ-45 port which supports 10/100 Mbps EtherNet/IP. | No Changes |
| | One USB port. | No Changes |
| 3 | Graphic Terminals / HMI (Human Machine Interface) Specifications: | No Changes |
| A. | The operator interface terminal shall have a flat panel display with LED backlight. | No Changes |
| B. | Touch screen operator interface terminals shall have the entire screen available for object usage, and not be limited by specific templates or function keys. | No Changes |
| C. | Keypad-based operator interface terminals shall have function keys that the user can program as required by application specifications. | No Changes |
| D | Shall be PanelView™ 800 Series | No Changes |
| 4 | PROGRAMMING TECHNIQUES–GENERAL | No Changes |
| A. | The PLC and operator interface terminal shall be capable of being configured offline, using Connected Components Workbench (CCW) software. | No Changes |
| B. | CCW software shall: | No Changes |
| | Be available for installation on a PC as a free download. | No Changes |
| | Require at least an Intel Pentium 4, 2.8 GHz, processor with 2 GB RAM and 10 GB free hard disk space. | No Changes |
| | Be supported in Windows 7 SP1, Windows 8 (and 8.1), and Windows Server 2008 (R2) environments. | No Changes |
| | Create applications that can be transferred to the operator interface terminal using a USB flash or microSD storage card. | No Changes |
| VI. | SENSORS | No Changes |
| | Temperature and Relative Humidity | No Changes |
| | Supply voltage: 5 to 28vdc | No Changes |
| | Filter description: 0.2 µm Teflon membrane | No Changes |
| | Housing classification I1/9/2021 ip65 | No Changes |
| | RH Measuring range: 0 to 100% RH (non-condensing) | No Changes |
| | RH Typical Accuracy at -40° to 0°C | No Changes |
| | Air Temperature Sensing Element: 1000 ohm Platinum | No Changes |
| | Air Temperature Measuring range: -40° to +60°C | No Changes |
| VII. | METEOROLOGICAL STATION | No Changes |
| 1 | Solar Radiation Sensor | No Changes |
| | Silicon photovoltaic detector mounted in a cosine-corrected head | No Changes |
| | ISO Certification- Class C (second class) | No Changes |
| | Light Spectrum waveband 360 to 1120 nm (wavelengths where response is 10% of maximum) | No Changes |
| | Absolute Accuracy ±5% for daily total radiation | No Changes |
| | Spectral range 360 to 1120 nm | No Changes |
| | Temperature range -40° to +70°C | No Changes |
| | Sensitivity 0.2 mV/W/m2 | No Changes |
| | Supplier shall provide manufacturer's authorization certificate | No Changes |



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| 2 | Measurement Data Logger | No Changes |
| | Internal Memory: 30MB flash for data storage, 80MB flash for CPU drive / programs, 2MB flash | No Changes |
| | 10/100 Ethernet RJ45 for LAN connection | No Changes |
| | RS-232C for connecting RS-232 modems or serial sensors | No Changes |
| | Battery Terminal Pair (-BAT+) for regulated 12V power input or rechargeable 12V VRLA for UPS mode | No Changes |
| | Charge Terminal Pair (-CHG+) for 16 to 32V from DC power converter or 12 or 24 V solar panel (10W) | No Changes |
| | One Switched 12V Terminal (SW12V) (VX1, VX2) | No Changes |
| | Two Pulse Counting Terminals (P_SW_P_LL) | No Changes |
| | Two Control Terminals (C1,C2) | No Changes |
| | Wireless Local Area Network (WLAN) | No Changes |
| | Supported Standards: IEEE 802.11 b/g/n, IEEE 802.11/d/e/I, 802.1X, WEP, WPA/WPA2 Personal and Enterprise | No Changes |
| VIII. | SUPPLEMENTARY HORTICULTURE LIGHTS | No Changes |
| | voltage input range - 100~277VAC 50/60hz | No Changes |
| | photosynthetic photon flux density - 334.18 micro mol m ² /s | No Changes |
| | Power Rating - 600W | No Changes |
| | Eff: 93.5% (Max) | No Changes |
| | Power factor: >/- 0.95 | No Changes |
| | Water Proof - IP65 | No Changes |
| | dimension -(L*W*H) 1206mm x 600mm *80mm | No Changes |
| IX. | CONTROL BOX | No Changes |
| | The supplier shall provide all required cables and connectors to interface with other control system equipment. | No Changes |
| | The supplier shall ensure that communication media, analog signals, and discrete I/O wiring are properly protected in accordance with manufacturer recommendations. | No Changes |
| X. | COOLING EQUIPMENTS | No Changes |
| | Circulating fans w/ stainless frame 220V 1p,180W,400mm DIA | No Changes |
| | Exhaust fan 50" | No Changes |
| | Cooling pads 2m x 4m x 15cm | No Changes |
| | Fogger motor pump ½ HP | No Changes |
| | Concrete tank 1.5m x 1.5m x 1.5m | No Changes |
| | Control panel w/ back plane | No Changes |
| | 400W air circulator motor | No Changes |

III. Section VII. Drawing

The attached Site Development Plan shall be included in the Section VII of the Bidding Documents.

For the guidance and information of all concerned.



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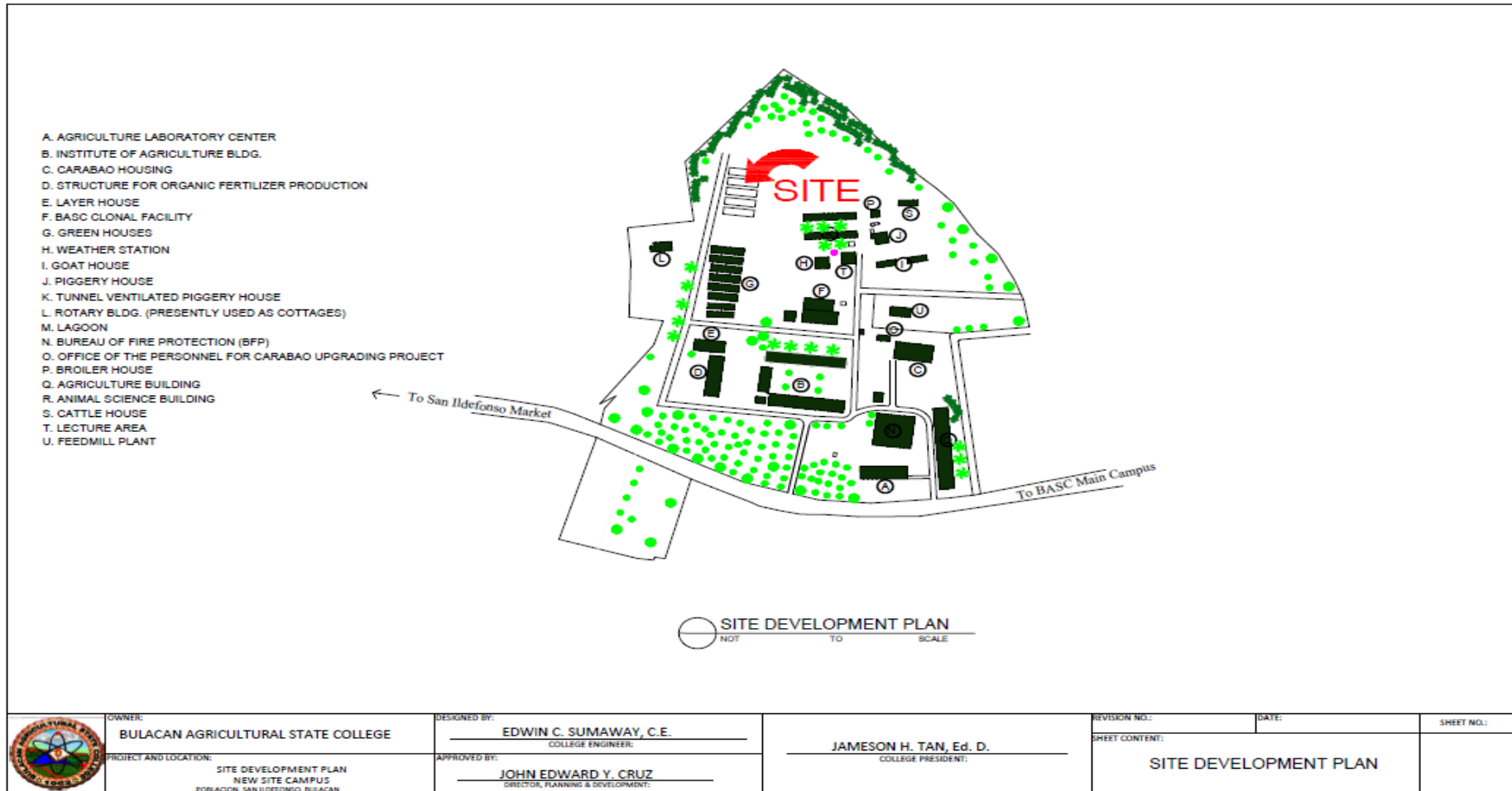
RONALD REAGAN T. ALONZO, Ph.D.
BAC Chairperson



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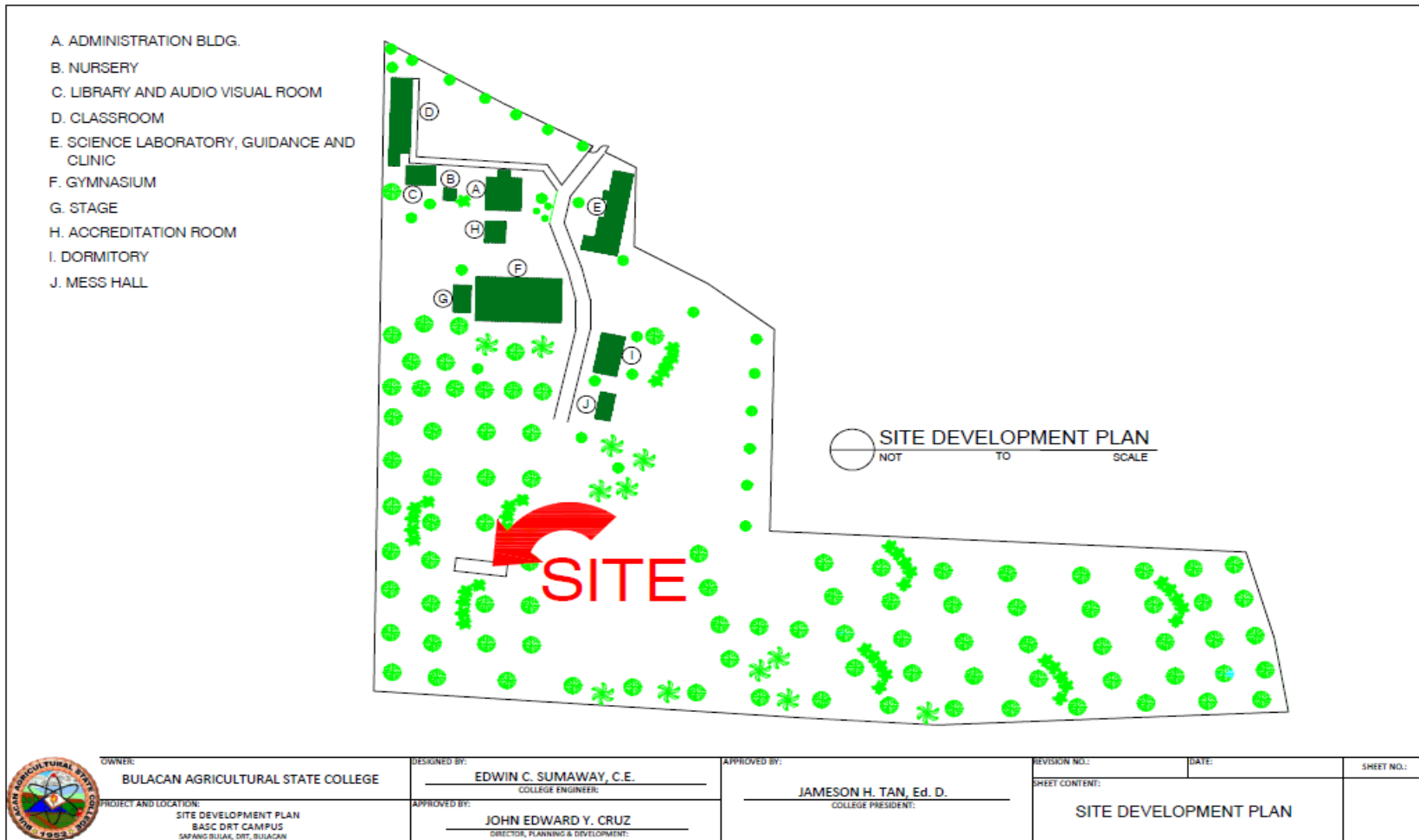
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