



25 September 2018

**ASTI - BIDS AND AWARDS COMMITTEE**

**SUPPLEMENTAL BULLETIN NO. BAC-2018-09-036**

**Supply and Delivery of ASTI-Designed Datalogger and Other Items**

The ASTI Bids and Awards Committee (BAC) issues this supplemental bid bulletin to clarify, modify or amend items in the Bidding Documents and to reply to queries raised by the potential bidders through letters/emails for the information of all bidders for the procurement of:

Item: Supply and Delivery of ASTI-Designed Datalogger and Other Items  
 Approved Budget for the Contract (ABC): PhP18,903,755.00  
 Invitation to Bid No.: 18-08-2073  
 Purchase Request No.: GAA-18-08-6227  
 Published Date (PhilGEPS): 11 September 2018

**A. AMENDMENT TO BIDDING DOCUMENTS**

REFERENCE	AMENDMENT/CHANGE/CLARIFICATION	
Section VII. Technical Specifications	FROM:	TO:
	<p><b>1 ASTI-DESIGNED DATALOGGER</b></p> <p><b>G. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>At least two (2) years warranty of parts and services.</li> <li>Must be licensed by DOST-ASTI.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>	<p><b>1 ASTI-DESIGNED DATALOGGER</b></p> <p><b>G. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li><b>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user, as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> <li><b>At least two (2) years warranty of parts and services.</b></li> <li><b>Must be delivered to DOST-ASTI.</b></li> </ol>
	<p><b>2 CONTROLLER BOX ASSEMBLY</b></p> <p><b>A. Assembly of Controller Box for UAAWS</b></p> <p><b>2. One (1) Pc. Solar Charge Controller Regulator</b></p> <p><b>MECHANICAL SPECIFICATIONS:</b></p> <ul style="list-style-type: none"> <li>Wire Size #16 AWG</li> <li>ABS Plastic Case: Epoxy encapsulated</li> <li>Weight: 3 oz (0.09 kg)</li> <li>Dimensions: 2.5" x 2.0" x 1.4"/63.5 x 50.8 x 35.56 mm</li> </ul> <p><b>ELECTRICAL SPECIFICATIONS:</b></p> <ul style="list-style-type: none"> <li>Rated Solar Input: 4.5 Amps</li> <li>Max. Input (5min.): 5.5 Amps</li> <li>System Voltage: 12V</li> <li>Max. Solar Voltage: 30V</li> <li>Regulation Voltage: 14.1V</li> <li>Accuracy: 60 mV</li> <li>Self-Consumption: 6 mA</li> <li>Temp. Compensation: 28 mV/ degree Celsius</li> <li>Reverse Current Leakage: &lt;10 micro Amps</li> <li>Operating Temperature: 40 to 85 degrees Celsius</li> </ul>	<p><b>2 CONTROLLER BOX ASSEMBLY</b></p> <p><b>A. Assembly of Controller Box for UAAWS</b></p> <p><del><b>2. One (1) Pc. Solar Charge Controller Regulator</b></del></p> <p><del><b>MECHANICAL SPECIFICATIONS:</b></del></p> <ul style="list-style-type: none"> <li><del>Wire Size #16 AWG</del></li> <li><del>ABS Plastic Case: Epoxy encapsulated</del></li> <li><del>Weight: 3 oz (0.09 kg)</del></li> <li><del>Dimensions: 2.5" x 2.0" x 1.4"/63.5 x 50.8 x 35.56 mm</del></li> </ul> <p><del><b>ELECTRICAL SPECIFICATIONS:</b></del></p> <ul style="list-style-type: none"> <li><del>Rated Solar Input: 4.5 Amps</del></li> <li><del>Max. Input (5min.): 5.5 Amps</del></li> <li><del>System Voltage: 12V</del></li> <li><del>Max. Solar Voltage: 30V</del></li> <li><del>Regulation Voltage: 14.1V</del></li> <li><del>Accuracy: 60 mV</del></li> <li><del>Self-Consumption: 6 mA</del></li> <li><del>Temp. Compensation: 28 mV/ degree Celsius</del></li> <li><del>Reverse Current Leakage: &lt;10 micro Amps</del></li> <li><del>Operating Temperature: 40 to 85 degrees Celsius</del></li> </ul>

REFERENCE	AMENDMENT/CHANGE/CLARIFICATION	
Section VII. Technical Specifications	<p><b>FROM:</b></p> <p><b>8. Nine (9) Sets Cable Assemblies</b></p> <ul style="list-style-type: none"> <li>- One (1) Pc arQ Data Interface</li> <li>- One (1) Pc arQ Power Interface</li> <li>- One (1) Pc Soil Sensor Cable Interface</li> <li>- One (1) Pc Solar Panel Interface</li> <li>- One (1) Pc Sunshine Duration Sensor Connector</li> <li>- One (1) Pc Weather Sensor Connector</li> <li>- One (1) Pc Rain Gauge Sensor Cable Interface</li> <li>- One (1) Set Battery Connectors</li> <li>- One (1) Set Grounding Kit</li> </ul> <p>Note: End user will provide a technical drawing and specifications on Item 8's nine sub-items.</p> <p><b>10 One (1) ASTI-Designed Datalogger</b></p> <p>10.5 Connectors</p> <p>10.5.1 Water Lever – Qty: One (1) Pc.</p> <ul style="list-style-type: none"> <li>- Binder USA</li> <li>- Receptacle PART No. 09343111604</li> </ul> <p>10.5.2 Rain Gauge – Qty: One (1) Pc.</p> <ul style="list-style-type: none"> <li>- Binder USA</li> <li>- Receptacle PART No. 0934038603</li> </ul> <p><b>11 Lead Acid Battery</b></p> <p>11.1 Valve Regulated Lead-Acid Battery (Heavy Duty)</p> <p>11.2 Voltage: 12V</p> <p>11.3 Capacity: 17AH</p> <p>11.4 Dimension: 180x77x168 (LxWxH)</p> <p>11.5 Product Features:</p> <ul style="list-style-type: none"> <li>- Excellent cycling capability</li> <li>- Very high energy density</li> <li>- High rate discharge capability</li> <li>- Lowest self-discharge rate</li> <li>- Approved for shipping as nonhazardous, non-spillable</li> <li>- Operates in any position</li> <li>- Low internal resistance</li> </ul> <p>11.6 Manufacturer of the battery must have the ISO/TS16949 Calibration</p> <p><b>12. Two (2) Pcs. Padlock with Spare Keys</b></p> <ul style="list-style-type: none"> <li>- Outdoor use, stainless</li> <li>- Must be compatible with Sub-Item No. 1 (Enclosure)</li> </ul> <p><b>B. Notes</b></p> <p>2. Items 1 to 11 under Item A should be assembled according to End-user's drawing.</p>	<p><b>TO:</b></p> <p><b>8. Eight (8) Sets Cable Assemblies</b></p> <ul style="list-style-type: none"> <li>- One (1) Pc arQ Data Interface</li> <li>- One (1) Pc arQ Power Interface</li> <li><del>One (1) Pc Soil Sensor Cable Interface</del></li> <li>- One (1) Pc Solar Panel Interface</li> <li>- One (1) Pc Weather Sensor Connector</li> <li>- One (1) Pc Rain Gauge Sensor Cable Interface</li> <li>- One (1) Pc Ultrasonic Sensor Cable Interface</li> <li>- One (1) Set Battery Connectors</li> <li>- One (1) Set Grounding Kit</li> </ul> <p>Note: End user will provide a technical drawing and specifications on Item 8's nine sub-items.</p> <p><b>10 One (1) ASTI-Designed Datalogger</b></p> <p>10.5 Connectors</p> <p>10.5.1 Water Lever – Qty: One (1) Pc.</p> <ul style="list-style-type: none"> <li><del>Binder USA</del></li> <li>- Receptacle PART No. 09343111604</li> </ul> <p>10.5.2 Rain Gauge – Qty: One (1) Pc.</p> <ul style="list-style-type: none"> <li><del>Binder USA</del></li> <li>- Receptacle PART No. 0934038603</li> </ul> <p><del><b>11 Lead Acid Battery</b></del></p> <p><del>11.1 Valve Regulated Lead-Acid Battery (Heavy Duty)</del></p> <p><del>11.2 Voltage: 12V</del></p> <p><del>11.3 Capacity: 17AH</del></p> <p><del>11.4 Dimension: 180x77x168 (LxWxH)</del></p> <p><del>11.5 Product Features:</del></p> <ul style="list-style-type: none"> <li><del>Excellent cycling capability</del></li> <li><del>Very high energy density</del></li> <li><del>High rate discharge capability</del></li> <li><del>Lowest self-discharge rate</del></li> <li><del>Approved for shipping as nonhazardous, non-spillable</del></li> <li><del>Operates in any position</del></li> <li><del>Low internal resistance</del></li> </ul> <p><del>11.6 Manufacturer of the battery must have the ISO/TS16949 Calibration</del></p> <p><b>12. Two (2) Pcs. One (1) Pc. Padlock with Spare Keys</b></p> <ul style="list-style-type: none"> <li>- Outdoor use, stainless</li> <li>- Must be compatible with Sub-Item No. 1 (Enclosure)</li> </ul> <p><b>B. Notes</b></p> <p>G. Items 1 to 44 9 under Item A should be assembled according to End-user's drawing.</p> <p><i>*Please revise numbering, in all documents to be submitted, if necessary.</i></p>

REFERENCE	AMENDMENT/CHANGE/CLARIFICATION	
Section VII. Technical Specifications	FROM:	TO:
	<p><b>3 SOLAR PANEL</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>Supplier must provide detailed mechanical drawing and data sheet of the connectors for approval by the End-user prior to delivery.</li> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>At least two (2) years warranty.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>	<p><b>3 SOLAR PANEL</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>Supplier must provide detailed mechanical drawing and data sheet of the connectors for approval by the End-user prior to delivery.</li> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post qualification.</li> <li><b>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> <li>Supplier must provide product brochures.</li> <li>At least two (2) years warranty.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>
	<p><b>4 CHOGORI 4 PIN (PLUG AND RECEPTACLE)</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>	<p><b>4 CHOGORI 4 PIN (PLUG AND RECEPTACLE)</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li><b>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> <li>Supplier must provide product brochures.</li> <li>At least two (2) years warranty.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>
	<p><b>5 CHOGORI 8 PIN (PLUG AND RECEPTACLE)</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>	<p><b>5 CHOGORI 8 PIN (PLUG AND RECEPTACLE)</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li><b>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> <li>Supplier must provide product brochures.</li> <li>At least two (2) years warranty.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>
	<p><b>6 ARQ POWER CABLE</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> </ol>	<p><b>6 ARQ POWER CABLE</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li><b>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> </ol>

REFERENCE	AMENDMENT/CHANGE/CLARIFICATION	
Section VII. Technical Specifications	FROM:	TO:
	<p><b>7 RF CABLE ASSEMBLY - SMA JACK-TO-MMCX</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>	<p><b>7 RMF CABLE ASSEMBLY - SMA JACK-TO-MMCX</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user, as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</li> <li>Supplier must provide product brochures.</li> <li>At least two (2) years warranty.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>
	<p><b>8 PRESSURE SENSOR BAORDS</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> </ol>	<p><b>8 PRESSURE SENSOR BOARDS</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</li> </ol>
	<p><b>9 ASTI-DESIGNED POWER BOARDS</b></p> <p><b>A. General</b></p> <p>Power Board 1 and 2 (Qty: Power Board 1 - 50 Pcs., Power Board 2 - 50 Pcs.)</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> </ol>	<p><b>9 ASTI-DESIGNED POWER BOARDS</b></p> <p><b>A. General</b></p> <p>Power Board 1 and 2 (Qty: Power Board 1 - 150 Pcs., Power Board 2 - 250 Pcs.)</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</li> </ol>
	<p><b>10 EMBEDDED MODULE</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>	<p><b>10 EMBEDDED MODULE</b></p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</li> <li>Supplier must provide product brochures.</li> <li>Must be delivered to DOST-ASTI.</li> </ol>

REFERENCE	AMENDMENT/CHANGE/CLARIFICATION	
Section VII. Technical Specifications	FROM:	TO:
	<p>11 MICROCONTROLLER KIT WITH RADIO TRANSCEIVER</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>1. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>2. LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>3. Must be delivered to DOST-ASTI.</li> </ol>	<p>11 MICROCONTROLLER KIT WITH RADIO TRANSCEIVER</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>1. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>2. <b>Two (2) samples of actual unit must be provided by the LCB/SCB within five (5) calendar days after the Opening of Bids for approval by the End-user, as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> <li>3. Supplier must provide product brochures.</li> <li>4. Must be delivered to DOST-ASTI.</li> </ol>
	<p>12 ELECTRONIC ENCLOSURE</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>1. Supplier must provide detailed mechanical drawing and data sheet of the connectors for approval by the End-user prior to delivery.</li> <li>2. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>3. LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>4. Must be delivered to DOST-ASTI.</li> </ol>	<p>12 ELECTRONIC ENCLOSURE</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>1. Supplier must provide detailed mechanical drawing and data sheet of the connectors for approval by the End-user prior to delivery.</li> <li>2. <b>Two (2) samples of actual unit must be provided by the LCB/SCB within seven (7) calendar days after the Opening of Bids for approval by the End-user as part of the post qualification and prior to award. If approved by the End-user, one (1) sample will be retained for reference of the units to be delivered, which will form part of the full delivery.</b></li> <li>3. Supplier must provide product brochures.</li> <li>4. Must be delivered to DOST-ASTI.</li> </ol>
	<p>13 SMA TO U.FL CABLE ASSEMBLY</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>1. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>2. LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>3. Must be delivered to DOST-ASTI.</li> </ol>	<p>13 SMA TO U.FL CABLE ASSEMBLY</p> <p><b>B. Notes</b></p> <ol style="list-style-type: none"> <li>1. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>2. Supplier must provide product brochure. <del>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</del></li> <li>3. Must be delivered to DOST-ASTI.</li> </ol>
	<p>14 SCREW IN VENT</p> <ol style="list-style-type: none"> <li>1. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>2. LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</li> <li>3. Must be delivered to DOST-ASTI.</li> </ol>	<p>14 SCREW IN VENT</p> <ol style="list-style-type: none"> <li>1. End-user may request for a demonstration with the Least Calculated Bid (LCB) / Single Calculated Bid (SCB) during post-qualification.</li> <li>2. Supplier must provide product brochure. <del>LCB / SCB must provide two (2) samples of actual unit for approval by the End-user as part of the post-qualification and prior to award. If approved by End-user, one (1) sample will be retained for reference of the units to be delivered.</del></li> <li>3. Must be delivered to DOST-ASTI.</li> </ol>


**B. RESPONSE TO QUERIES**

<b>QUERY/ISSUE</b>	<b>BAC/END-USER RESPONSE/CLARIFICATION</b>
Delivery date extension, if possible.	There will be no delivery extensions.

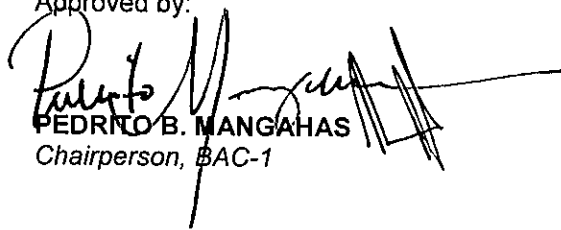
Please be guided accordingly.

---

Prepared by:

  
**KATHERINE B. RAMOS**  
*Head, BAC Secretariat*

Approved by:

  
**PEDRITO B. MANGAHAS**  
*Chairperson, BAC-1*