



Republic of the Philippines
CITY GOVERNMENT OF SAN CARLOS
Province of Negros Occidental

**BIDS AND AWARDS COMMITTEE
(BAC)**

BIDDING DOCUMENTS

PURCHASE REQUEST NO. 4-23-11-1932

APPROVED BUDGET OF THE CONTRACT (ABC): P 31,100,000.00

**FOR THE PROCUREMENT OF REHABILITATION AND UPGRADING OF WATER
TREATMENT PLANT (DESIGN AND BUILD SCHEME)**

WITH TERMS OF REFERENCE (TOR) AND PROJECT PLAN

(First Envelope: Eligibility and Technical Components)

SUBMITTED BY : _____
ADDRESS : _____
CONTACT NO. : _____
EMAIL ADDRESS : _____

DATE OF SUBMISSION

INSTRUCTIONS TO BIDDERS

1. Please submit sets of documents completely in two separate envelopes:
The *First Envelope (Original, Copy 1 and Copy 2)* containing Eligibility & Technical Documents
The *Second Envelope (Original, Copy 1 and Copy 2)* containing Financial Documents.
2. Check that all annexes are in accordance with the prescribed format and submit in chronological order. Non-compliance is ground for disqualification.
3. Submit your complete bid documents on or before the time of the opening of bids mentioned below.
4. Electronic submission and receipt of bids is not available pending compliance with GPPB Resolutions.

Compliance of the above is for mutual advantage, i.e. to facilitate a complete and thorough evaluation of your bid documents.

SCHEDULES

Schedule/Place of Pre bid Conference:

January 11, 2024 @ 8:30 A.M
BAC Secretarial Office
2F City Hall Building

Schedule/Place of Bid Opening:

January 23, 2024 @ 1:30 P.M
BAC Secretarial Office
2F City Hall Building

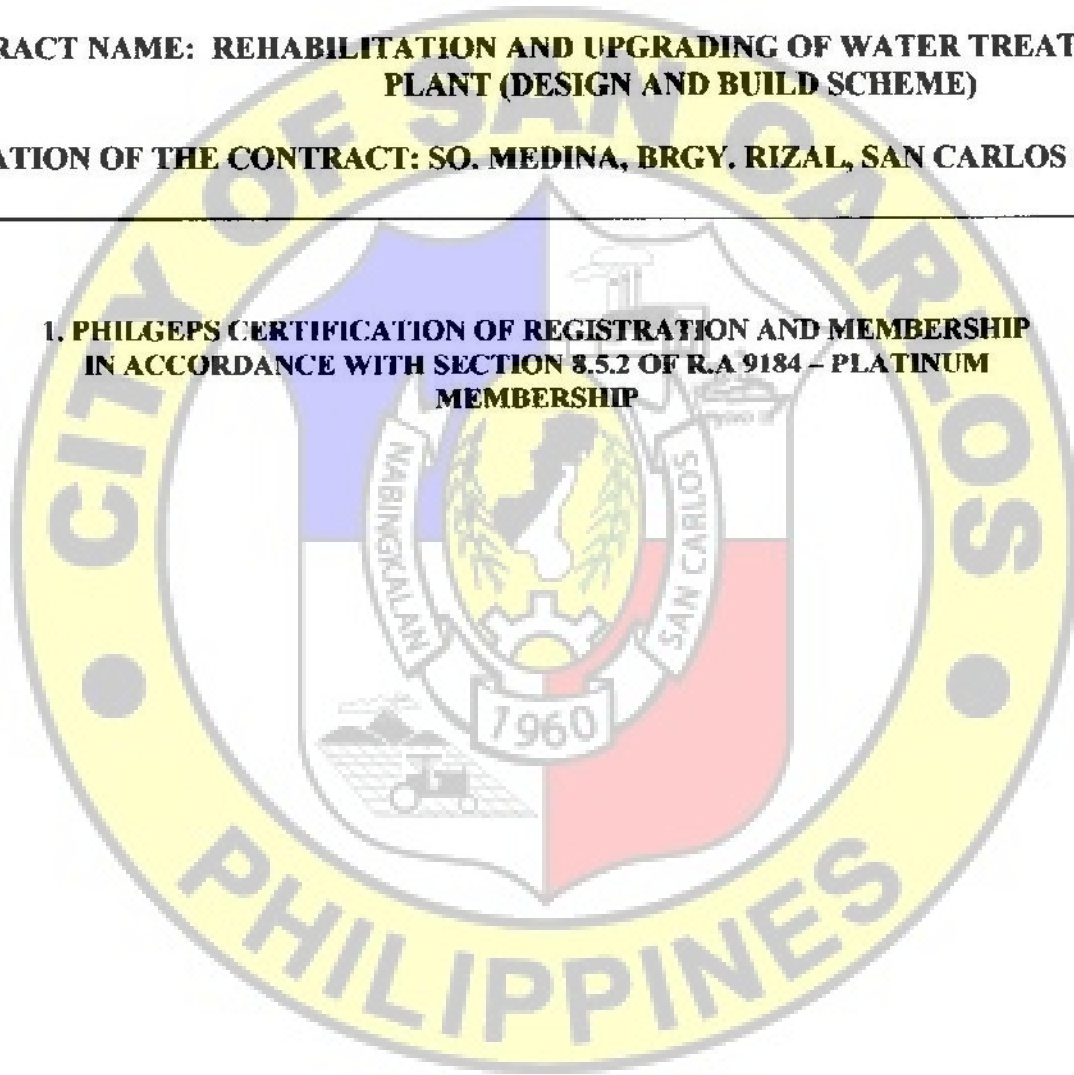
Nonrefundable fee of Bidding Documents @ P 31,100.00

**Republic of the Philippines
City Government of San Carlos
Province of Negros Occidental**

**CONTRACT NAME: REHABILITATION AND UPGRADING OF WATER TREATMENT
PLANT (DESIGN AND BUILD SCHEME)**

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

**1. PHILGEPS CERTIFICATION OF REGISTRATION AND MEMBERSHIP
IN ACCORDANCE WITH SECTION 8.5.2 OF R.A 9184 - PLATINUM
MEMBERSHIP**

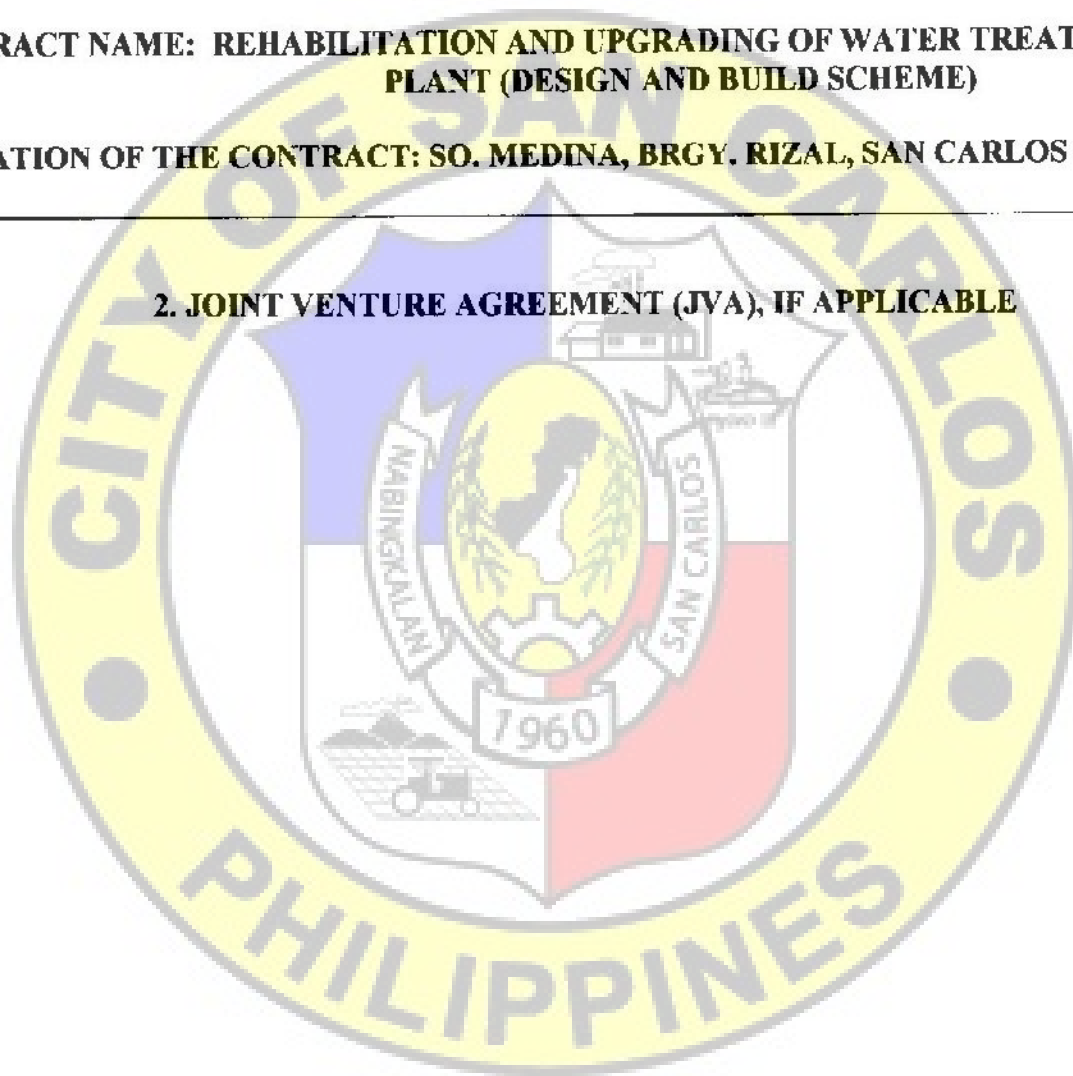


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2. JOINT VENTURE AGREEMENT (JVA), IF APPLICABLE

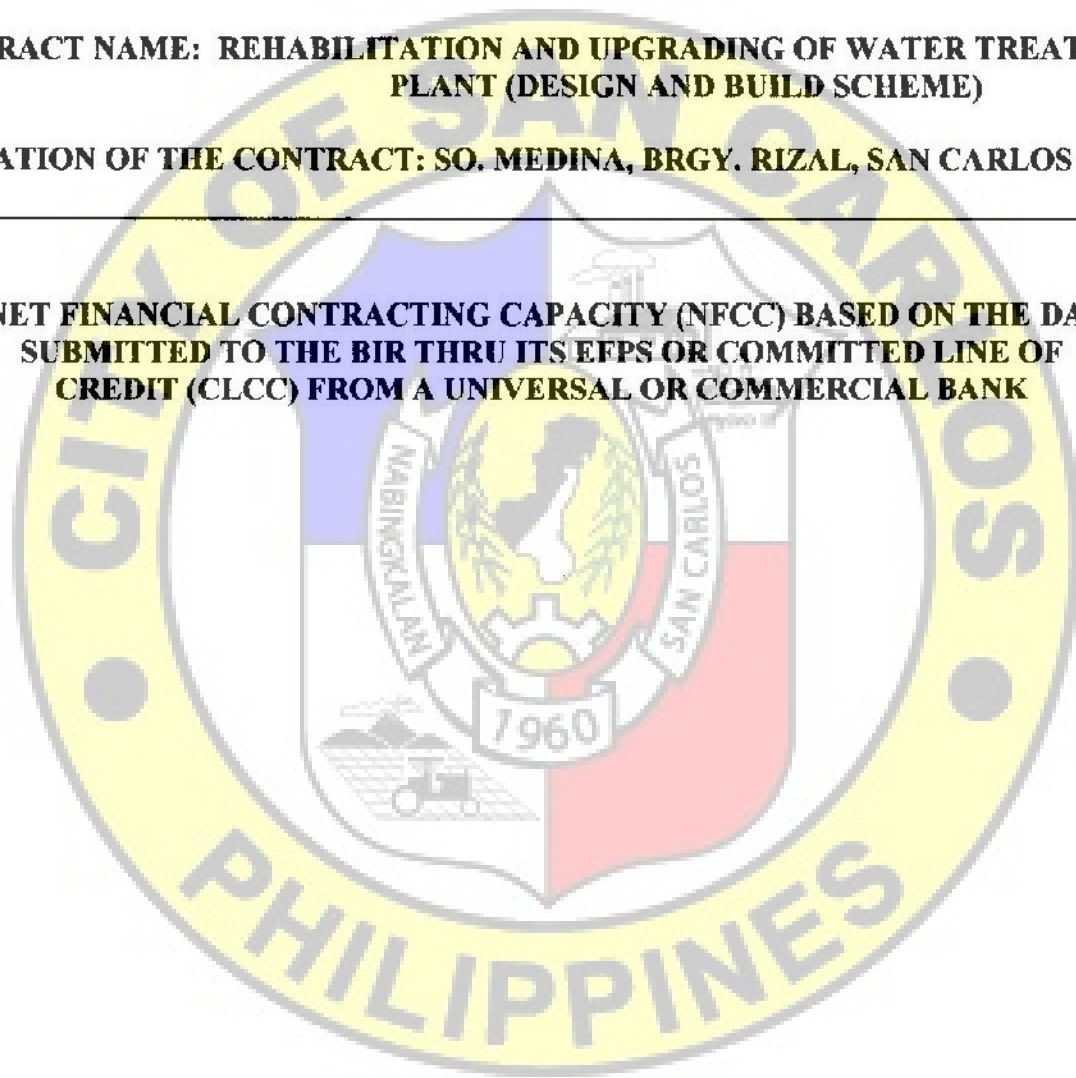


**Republic of the Philippines
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PLANT (DESIGN AND BUILD SCHEME)**

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

**3. NET FINANCIAL CONTRACTING CAPACITY (NFCC) BASED ON THE DATA
SUBMITTED TO THE BIR THRU ITS EFPS OR COMMITTED LINE OF
CREDIT (CLCC) FROM A UNIVERSAL OR COMMERCIAL BANK**



**Republic of the Philippines
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LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

**4. DULY NOTARIZED STATEMENT OF ALL ON - GOING GOVERNMENT
AND PRIVATE CONTRACTS**



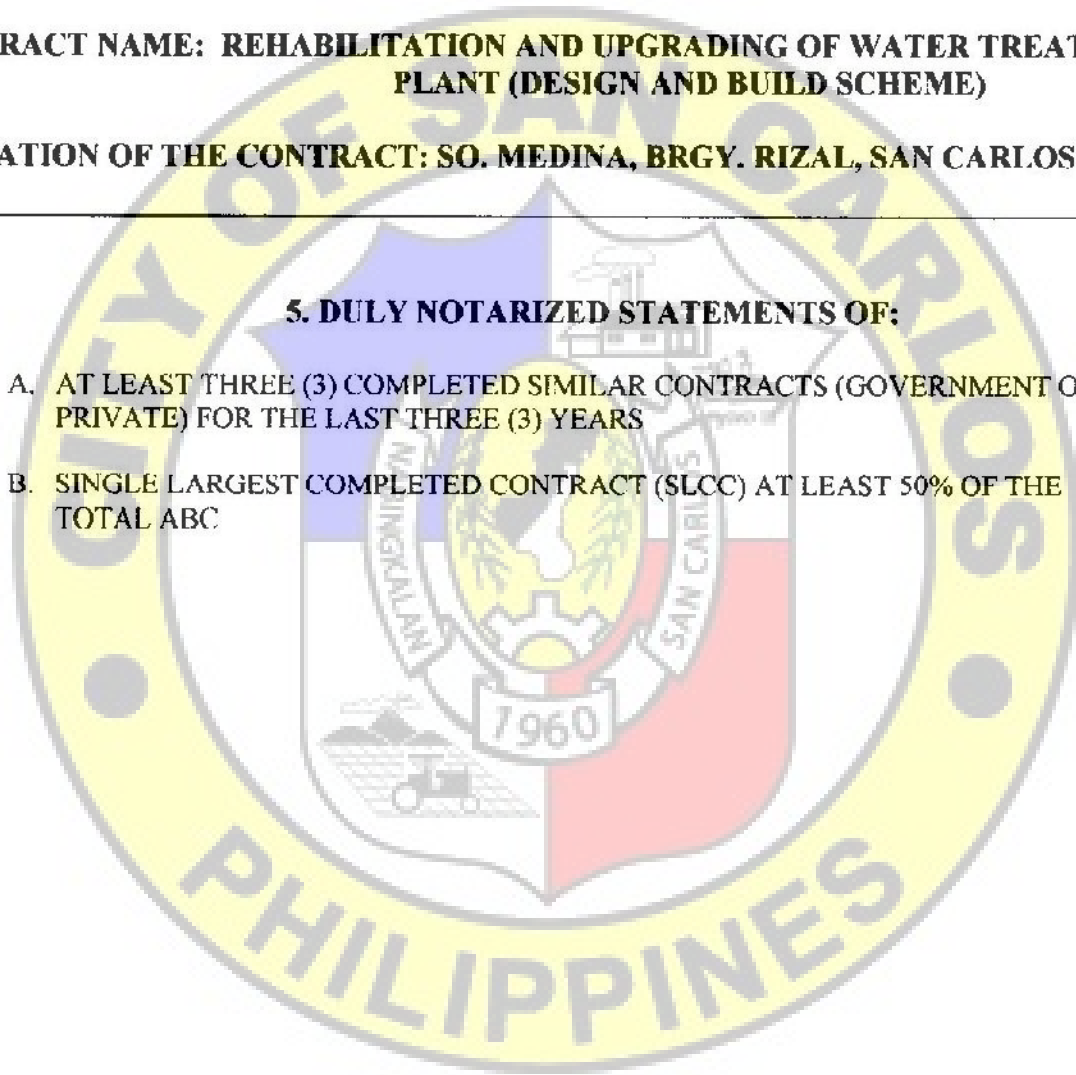
**Republic of the Philippines
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**CONTRACT NAME: REHABILITATION AND UPGRADING OF WATER TREATMENT
PLANT (DESIGN AND BUILD SCHEME)**

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

5. DULY NOTARIZED STATEMENTS OF:

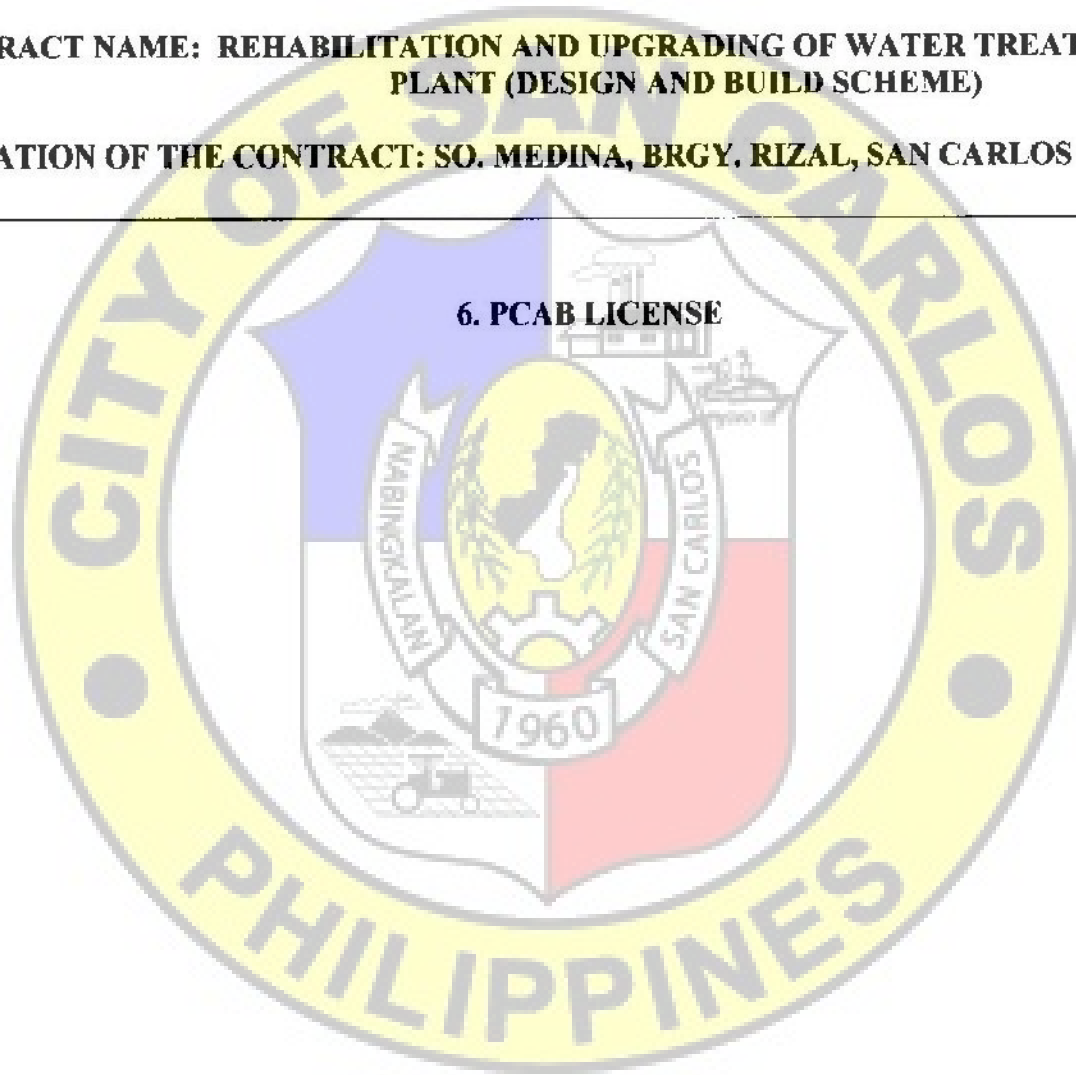
- A. AT LEAST THREE (3) COMPLETED SIMILAR CONTRACTS (GOVERNMENT OR PRIVATE) FOR THE LAST THREE (3) YEARS
- B. SINGLE LARGEST COMPLETED CONTRACT (SLCC) AT LEAST 50% OF THE TOTAL ABC



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6. PCAB LICENSE

Republic of the Philippines
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CONTRACT NAME: REHABILITATION AND UPGRADING OF WATER TREATMENT PLANT (DESIGN AND BUILD SCHEME)

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

7. PROJECT REQUIREMENTS:

- A. ORGANIZATIONAL CHART FOR THE CONTRACT TO BE BID
- B. LIST OF CONTRACTOR'S PERSONNEL TO BE ASSIGNED TO THE CONTRACT TO BE BID WITH THEIR COMPLETE QUALIFICATION AND EXPERIENCE DATA
- C. LIST OF CONTRACTOR'S EQUIPMENT (Owned, Leased and/or Under Purchase Agreements, Supported By Certification of Availability of Equipment from the Equipment Lessor/Vendor for the Duration of the Project) TO BE ASSIGNED TO THE CONTRACT TO BE BID, WITH THEIR COMPLETE QUALIFICATION AND EXPERIENCE DATA.
- D. DULY NOTARIZED AFFIDAVIT OF SITE INSPECTION (Please see Form Below)
- E. PERT CPM or Gantt Chart with S-Curve

Name of the Procuring Entity

Contract Reference Number
Name of the Contract
Location of the Contract

Standard Form Number: SF-INFR-51
Revised on: August 11, 2004

AFFIDAVIT OF SITE INSPECTION

I, _____ (Representative of the Bidder) _____, of legal age, _____ civil status _____, Filipino and residing at _____ (Address of the Representative) _____, under oath, hereby depose and say:

1. That I am the _____ (Position in the Bidder) _____ of the _____ (Name of the Bidder) _____, with office at _____ (Address of the Bidder) _____;
2. That I have inspected the site for _____ (Name of the Contract) _____, located at _____ (Location of the Contract) _____;
3. That I am making this statement as part of the requirement for the Technical Proposal of the _____ (Name of the Bidder) _____ for _____ (Name of the Contract) _____.

IN FAITH WHEREOF, I hereby affix my signature this _____ day of _____, 20____ at _____, Philippines.

AFFIANT

SUBSCRIBED AND SWORN TO before me this _____, day of _____, 20____, affiant Exhibiting to me his/her Community Tax Certificate No. _____ issued on _____ at _____, Philippines.

(Notary Public)

Until _____
PTR No. _____
Date _____
Place _____
TIN _____

Document No. _____
Page No. _____
Book No. _____
Series of _____

Republic of the Philippines
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City Government of San Carlos
Province of Negros Occidental

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LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

8. BID SECURITY

- a) Cash or cashier's / Manager's Check issued by a Universal or Commercial Bank in favor of City Treasurer of San Carlos City. : Two percent (2%) of the ABC (See above)
- Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank. Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank. : Two percent (2%) of the ABC (See above)
- b) Bank. : Two percent (2%) of the ABC (See above)
- c) Surety Bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security. : Five percent (5%) of the ABC (See above)
- d) Any combination of the foregoing : Proportionate to share form with respect
- e) Bid Securing Declaration (Please see Form Below)

REPUBLIC OF THE PHILIPPINES)
CITY OF SAN CARLOS, NEGROS OCCIDENTAL) S.S.

BID SECURING DECLARATION

Project Identification No. / Purchase Request (PR) No. : 4-23-11-1932

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA No. 9184, without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
 - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
 - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
 - c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of *[month]* *[year]* at *[place of execution]*.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]
Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

Republic of the Philippines
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CONTRACT NAME: REHABILITATION AND UPGRADING OF WATER TREATMENT
PLANT (DESIGN AND BUILD SCHEME)

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

9. OMNIBUS SWORN STATEMENT

for

Purchase Request (PR) No. 4-23-11-1932

REPUBLIC OF THE PHILIPPINES)
CITY OF SAN CARLOS, NEGROS OCCIDENTAL.) S.S

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*

[If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

[If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*

[If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

[If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;**

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*

[If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a partnership or cooperative:] None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
 - a. Carefully examining all of the Bidding Documents;
 - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
 - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
 - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]
Affiant

[Jurat]

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Republic of the Philippines
CITY GOVERNMENT OF SAN CARLOS
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**BIDS AND AWARDS COMMITTEE
(BAC)**

BIDDING DOCUMENTS

FOR

PURCHASE REQUEST NO. 4-23-11-1932

APPROVED BUDGET OF THE CONTRACT (ABC): P 31,100,000.00

**FOR THE PROCUREMENT OF REHABILITATION AND UPGRADING OF WATER
TREATMENT PLANT (DESIGN AND BUILD SCHEME)**

WITH TERMS OF REFERENCE (TOR) AND PROJECT PLAN

(Second Envelope: Financial Component)

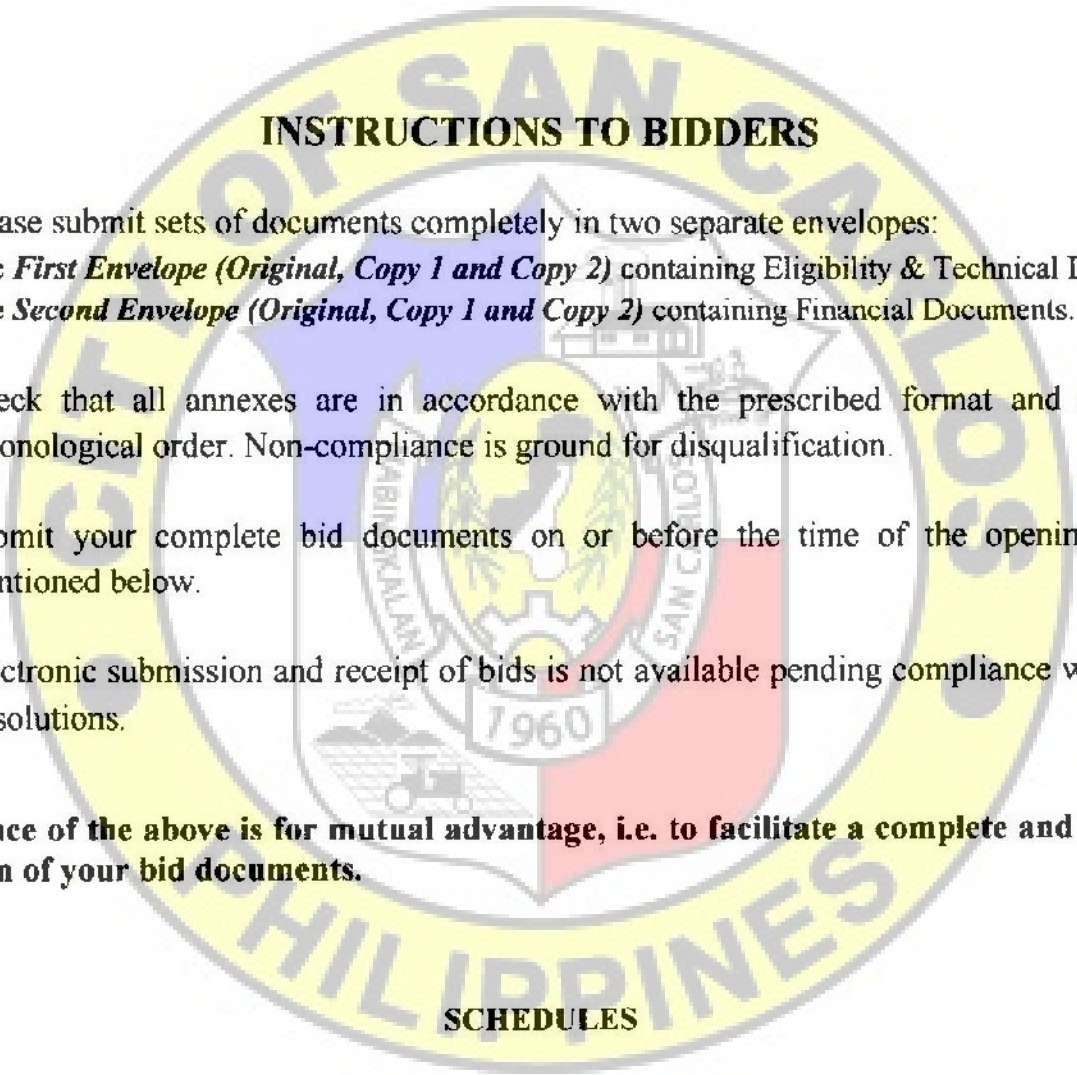
SUBMITTED BY : _____

ADDRESS : _____

CONTACT NO. : _____

EMAIL AD : _____

DATE OF SUBMISSION



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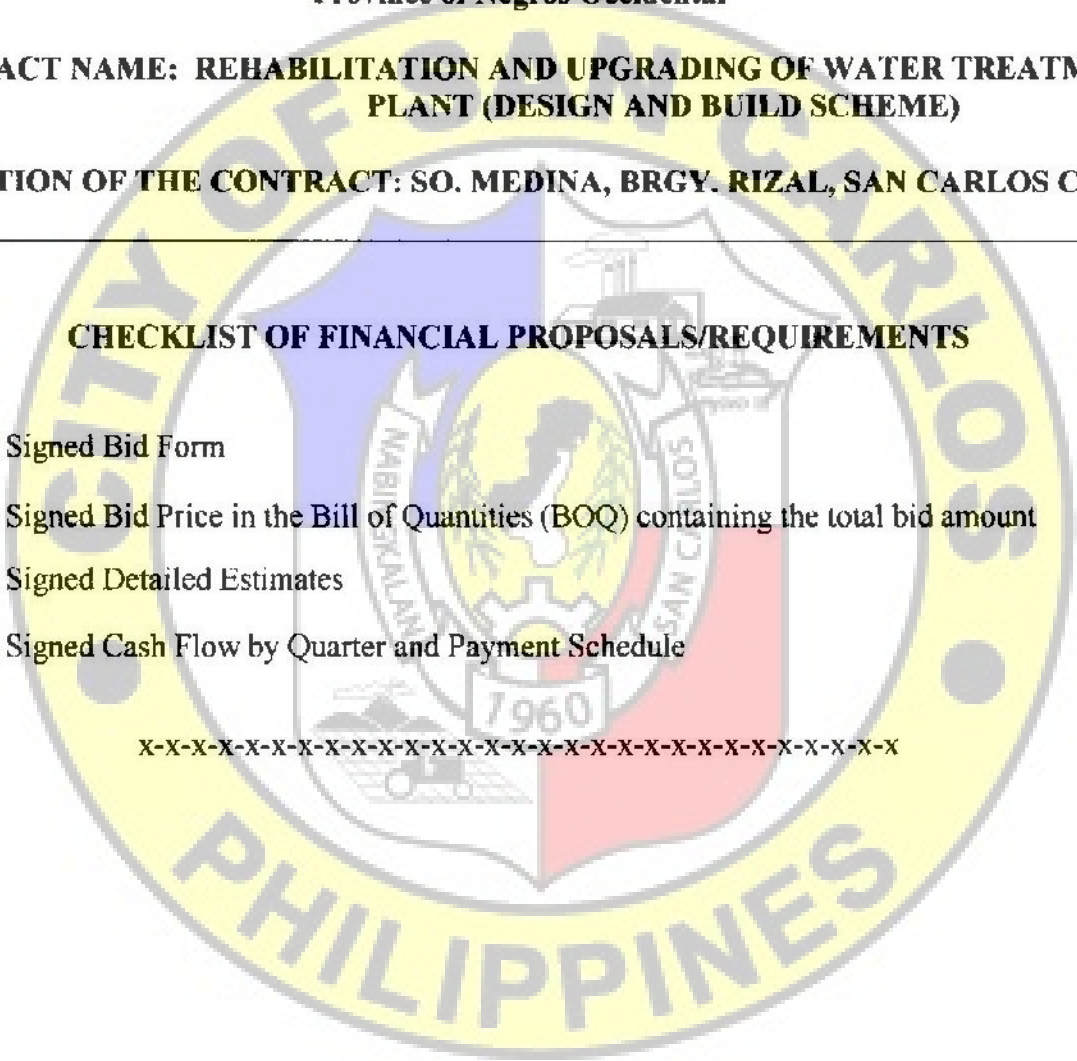
**CONTRACT NAME: REHABILITATION AND UPGRADING OF WATER TREATMENT
PLANT (DESIGN AND BUILD SCHEME)**

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

CHECKLIST OF FINANCIAL PROPOSALS/REQUIREMENTS

1. Duly Signed Bid Form
2. Duly Signed Bid Price in the Bill of Quantities (BOQ) containing the total bid amount
3. Duly Signed Detailed Estimates
4. Duly Signed Cash Flow by Quarter and Payment Schedule

X-X



**CONTRACT NAME: REHABILITATION AND UPGRADING OF WATER TREATMENT
PLANT (DESIGN AND BUILD SCHEME)**

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

I. DULY SIGNED BID FORM

Date : _____

Project Identification / Purchase Request No. : 4-23-11-1932

To: *[name and address of Procuring Entity]*

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project *[insert name of contract]*;
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;
- d. The discounts offered and the methodology for their application are: *[insert information]*;
- e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines¹ for this purpose;
- h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the *[Name of Project]* of the *[Name of the Procuring Entity]*.
- l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

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LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

**DULY SIGNED BID PRICE IN THE BILL OF QUANTITIES (BOQ) CONTAINING THE
TOTAL BID AMOUNT**

(Columns (1), (2) and (3) are to be filled up by the Procuring Entity)			(Columns (4) and (5) are to be filled up by the Bidder)		
	Description	Unit	Quantity	Unit Price (Pesos)	Amount (Pesos)
1	Dosing System with Accessories and Electrical Controls				
	<p>pH Adjustor (NaOH):</p> <p>Dosing Pump – 1 unit -Type: Compression type -Capacity: 120 ml/min. -Discharge Pressure:1.0 MPa -Power: 200 W, 220 V, 3 Phase, 60hz.</p> <p>Chemical Drum – 1 unit -Capacity: 200 liters -Tank Size: 0.578 Ø x 0.902 ht. – meters -Tank Material: MDPE</p>	Set	1		
	<p>Coagulant (PAC):</p> <p>Dosing Pump - 1 unit -Type: Viscosity type -Capacity:2000 ml/min. -Discharge Pressure:1.0 MPa -Power: 200 W, 220 V, 3 Phase, 60hz.</p> <p>Chemical Drum – 1 unit -Capacity: 200 liters -Tank Size: 0.578 Ø x 0.902 ht. – meters -Tank Material: MDPE</p>	Set	1		
	<p>Flocculant (Polymer):</p> <p>Dosing Pump – 1 unit -Type: Compression type -Capacity:1000 ml/min. -Discharge Pressure:1.0 MPa -Power: 200 W, 220 V, 3 Phase, 60hz.</p> <p>Chemical Drum – 1 unit -Capacity: 200 liters -Tank Size: 0.578 Ø x 0.902 ht. – meters -Tank Material: MDPE</p>	Set	1		

	<p>Chemical Mixing</p> <p>Motor Specification -3sets -Type: Vertical Gera Motor Output -Speed: 30-60 RPM -Power: 0.75 kW, 220 V, 3 phase, 60 hz.</p> <p>Mixing Tank- 3 units -Capacity: 370 liters -Size: 0.762 Ø x 0.850 ht. - meters</p>	Set	1		
2	<p>Flocculation Tank (w/ foundation, pipes and fittings)</p> <p>-Capacity: 20.65 m³ -Tank Size: 1.90 Ø x 7.28 ht. – meters -Materials: 6.4 mm thk. M.S. Plate; Epoxy Coated Pipe size: 8" Ø Manhole: 0.60 Ø - meters</p>	Set	1		
3	<p>Clarifier Tank (w/ foundation, pipes and fittings)</p> <p>-Tank Size: 0.246 x 3.812 x 5.888 – meters -Materials: 6.4 mm thk. MS Plate; Epoxy Coated -Type: Inclined Plate Lamella Clarifier -Angle of Inclination: 60° -Pipe Size: 8" Ø</p>	Set	1		
4	Portable Monitoring Devices	Lot	1		
5	Chemical during testing	Lot	1		
6	Labor Cost (installation/commissioning)	Lot	1		
7	Engineering Studies	Lot	1		
11	Water intake pump (use existing controls)	pcs	2		
12	MMF booster pump with electrical controls	pcs	2		
13	Multi-Media Filter Tanks Rehabilitation	pcs	4		

14	Shipment and Mobilization	lot	1	
15	Temporary Facility	lot	1	
16	Health and Safety	lot	1	
17	Professional Fees and Operations Manual	lot	1	
18	Accommodation	lot	1	
				In words: PHP
TOTAL BID COST				
				In figures: PHP

Submitted by:

Name of the Representative of the Bidder

Date: _____

Position

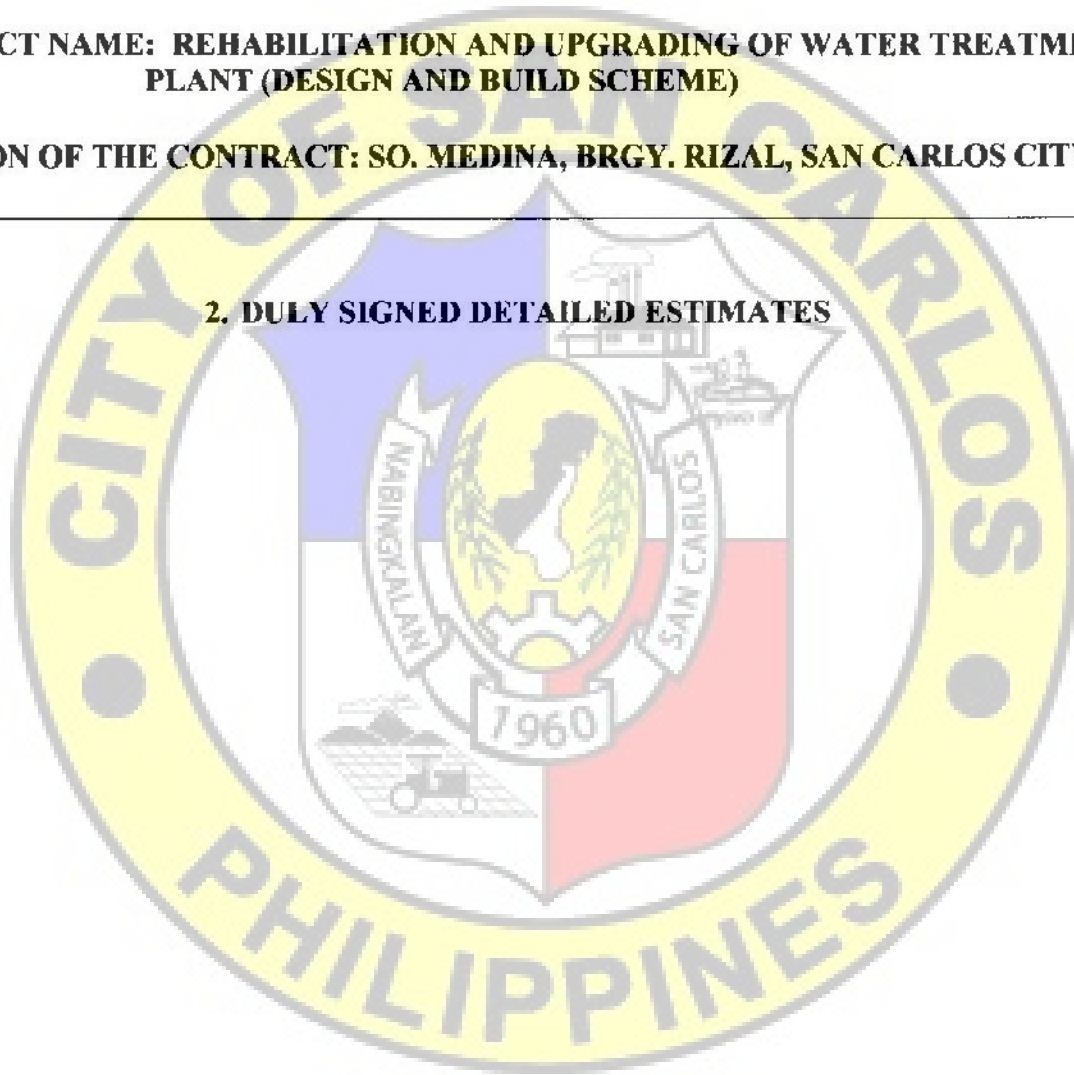
Name of the Bidder Company

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PLANT (DESIGN AND BUILD SCHEME)**

LOCATION OF THE CONTRACT: SO. MEDINA, BRGY. RIZAL, SAN CARLOS CITY

2. DULY SIGNED DETAILED ESTIMATES

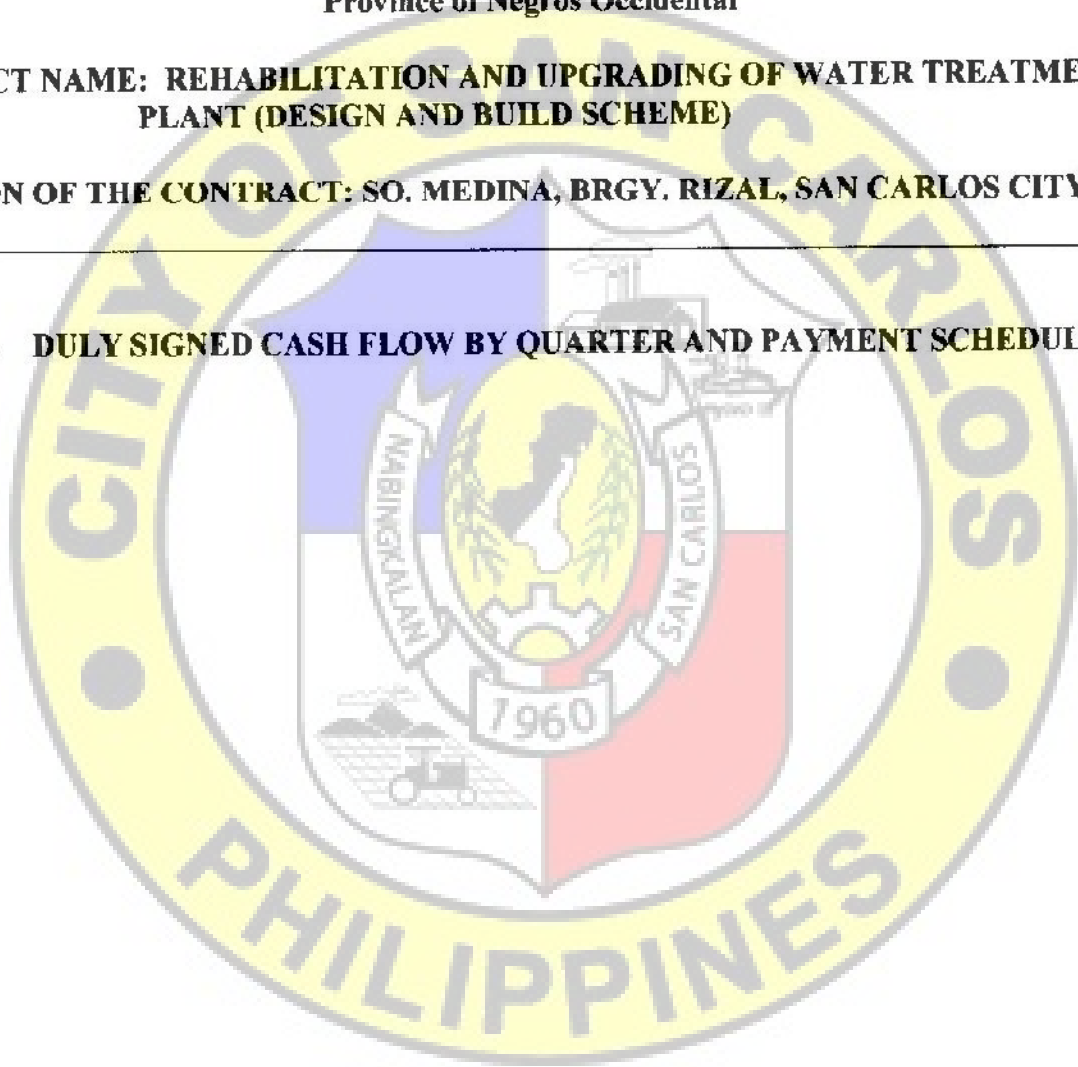


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3. DULY SIGNED CASH FLOW BY QUARTER AND PAYMENT SCHEDULE





**TERMS OF REFERENCE FOR THE
UPGRADING OF WATER TREATMENT PLANT
(DESIGN AND BUILD SCHEME)**



Prepared by:


JERIC F. VILLARINO

Engineer III

Recommended by:


ENGR. EDWARD C. SANCHEZ

City Gov't Dept. Head I

Approved:


HON. RENATO Y. GUSTILO

City Mayor



I. PROJECT DESCRIPTION

This project involves the upgrading of the existing water treatment plant with a production capacity of 5.0 MLD to handle and process raw water with turbidity of 6000 NTU, which is located at Eco-Translink Hwy, Medina, Brgy. Rizal, San Carlos City, the Ando-on river being the water source. The injection point where water will be conveyed is a 200 mm diameter pipeline located within the Medina water treatment facility. The intended beneficiary of this water treatment plant is the City Waterworks Department's concessionaire.

II. CONCEPTUAL DESIGN

The project concept is to upgrade and retrofit the existing Medina Water Treatment Plant (WTP) and its intake as source of water to guarantee the potability of the water supply to the different barangays of City of San Carlos using the surface water from Ando-on River. The raw water from the river will be pumped to the Water Treatment Plant (WTP) to undergo series of processes to remove sediments, microbes and other impurities to ensure that the water reaching each barangay or interconnection points complies with the quality set forth in the 2017 Philippine National Standards for Drinking Water (PNSDW). (Kindly see attached image of conceptual design).

III. THE CONTRACTOR

Conduct Inspection of site and issue duly signed Affidavit of Site Inspection as part of the bidding requirement.



IV. PROJECT REQUIREMENTS

a. Pumping Capacity

The Surface Water Abstraction Facility with a capacity of 5.0 MLD that can withstand high water undulation at the designated abstraction point. The Abstraction Facility consists of the following:

A. Pump & Motor

a) Intake Pump

Flowrate – 6,000 cubic meter per day

Head – 24 meters

Power – 37 kW, 440 V, 3 Phase, 60 Hz

b) Booster Pump

Flowrate – 6000 cubic meter per day

Head – 30 meters

Pipe size – 6 inches' diameter

Power – 30 kW, 440 V, 3 Phase, 60 Hz

c) Spare units of 6.0 MLD pumping equipment

B. Pipe and fittings

C. Electrical Systems and Control

b. Turbidity Equipments

The 5.0 MLD Water Treatment Plant that can handle and process incoming raw water with turbidity levels up to 6,000 NTU. Regardless of the quality of the raw water, the product water turbidity shall not exceed 5 NTU. It shall consist of the following:

A. Tanks and Pipe Lay-out

a) Flocculation Tank

Volume – 20.64 cubic meter

Tank size – 1.90 diameter x 7.28 ht meters



Pipe size – 8 inches diameter

b) Clarifier Tank

Tank size – 9.246 x 3.812 x 5.888 meters

Pipe size – 8 inches diameter

B. Rehabilitation of existing 4 Multi-media Filter (MMF)

C. Chemical Feeding & Disinfection Facilities

D. Flow meter (online), Turbidity meter, pH meter, Residual Chlorine

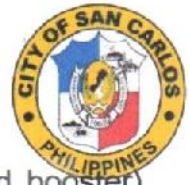
E. Electrical System & Controls

c. Water Quality

The treatment plant shall produce treated water effluent conforming to the 2017 PNSDW, thus will undergo testing and commissioning and shall be supplied with necessary chemicals and technical training including water analysis for seven (7) weeks probation.

d. Electrical Power Supply and Control System Requirements

1. The electrical power supply and control system shall include but not limited to the main and branch circuit overcurrent protective devices, motor controllers including all protective and monitoring relay systems required for the complete operation of the plant and all necessary wiring, conduits and grounding systems. Electrical power and control system shall be wired so that the various items of plant equipment can be operated manually to achieve the intended sequence of operation.
2. Factory wired plant components shall be interconnected so as to be an integral part of the plant.
3. Provide surge protection to prevent damage to electric motors and all other electrical and electronic components during fluctuation of voltage, during resumption of power supply after a power interruption and from the effects of lightning.



4. The WTP battery limit (excluding intake, product pumping and booster) should not be more than 0.3 kwh/m³, Power to Treated Water Ratio within the plant.

e. General Requirements

All processes and facilities shall be designed to meet the performance requirements of the proposed WTP. The inter-connectivity between existing plant, support services and structures must be an integrated approach to meet operational performance, flexibility, maintenance and reliability criteria.

1. Design Report, Construction and Shop Drawings

a. The Design Report shall contain all engineering design details related to the Project including electrical and mechanical design, structural design and Bill of Materials. All design calculations shall be orderly compiled and submitted to the Procuring Entity as an integral part of the Design Report.

b. The drawings shall show the complete assembly and construction details of the plant with all the equipment and appurtenant components. The layout shall indicate the relative location of the plant with respect to the boundary of the lot.

2. Operation & Maintenance Manuals and List of Spare Parts

Prepare and submit draft Operation and Maintenance Manual with lists of Spare Parts for the plant including all equipment, thirty (30) calendar days before the Intended Completion Date. Submit the completed Operation and Maintenance Manual within two weeks of receiving review comments in the form of two digital copies on CD and four hard copies using the latest versions of Word and AutoCAD with supplementary drawing and image files in PDF format.

Manuals shall be in metric, A4 in size with three ring binders with durable hard covers.



Drawings shall be in metric, A3 size covers and held together using three removable brass male/female screws. All drawings shall be in A3 size.

The Operation and Maintenance Manuals shall:

- i. Cover all aspects of the works
- ii. General description (location, site lay-out, design criteria, etc.)
- iii. Provide 'General Principles of Operation' for the plant. The General Principles of Operation shall be prepared by the contractor and should include the necessary information for operators to effectively operate and maintain the works.
- iv. Incorporate safety, environmental and quality issues.
- v. Have detailed indexes and cross referencing.
- vi. Spare parts list (illustrations and schedules)

V. SCOPE OF WORKS

The necessary works for the upgrading of the existing Water Treatment Plant including rehabilitation of existing water filtration shall include but not be limited to the following:

1. Upgrade the Water Treatment Plant (WTP) to be able to treat raw water with a turbidity of up to 6,000 NTU. The WTP shall include but not limited to raw water pump, flocculation tank, clarifier, chlorination, chemical dosing equipment and rehabilitation of existing 4 units MMF. The WTP shall be able to produce an effluent that meets the parameters prescribed in the 2017 Philippine National Standards for Drinking Water (PNSDW).
2. Upgrade and construct of associated civil works including site development for WTP facilities. The civil works shall include but not be limited to foundation works, formworks, concreting, and painting works.



3. Design, supply and install all mechanical and electrical components for the proposed upgrading of the WTP, instrumentation, control equipment and accessories that may be deemed necessary for the efficient and ease of operation of the WTP.
4. The WTP will also be equipped with an on-line monitoring for flowrate and other parameters such as: turbidity, pH, residual chlorine is equipped with portable monitoring devices.
5. Provide appropriate electromagnetic (if applicable) flow metering devices for inflow and outflow measurements.
6. Design and construct of support facilities such as chemical mixing facilities and chemical injection to the pipe line.
7. Commissioning and performance testing of the WTP for one (1) month upon issuance of mechanical completion.

VI. PROJECT DURATION

The Project must be completed within two hundred (200) working days from receipt of Notice to Proceed.

VII. MANPOWER REQUIREMENT

The Contractor must demonstrate that it has designed and constructed similar water treatment facilities and has the personnel for the key positions that meet the following requirements:



Item	Position	Total Work Experience (years)	Similar Work Experience (years)
1	Project Manager	10	5
D E S I G N			
2	Sanitary Engineer	10	2
3	Professional Mechanical Engineer	10	3
4	Professional Electrical Engineer	10	3
5	Structural Engineer	5	3
B U I L D			
8	Project Engineer	5	3
9	Civil Engineer	5	3
10	Mechanical Engineer	5	3
11	Electrical Engineer	5	3
12	Safety Engineer	5	2

The contractor shall provide details of the proposed personnel and their experience records.



VIII. LIST OF EQUIPMENTS

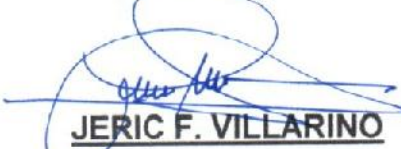
The Contractor must demonstrate that it will have access to the key equipment listed hereafter:

Item	Equipment Type and Characteristics
1	Dump Truck
2	Backhoe
3	Roller Compactor
4	Concrete Mixer
5	Jackhammer with Compressor
6	Concrete Vibrator
7	Bar Cutter
8	Welding Machine
9	Boom Truck

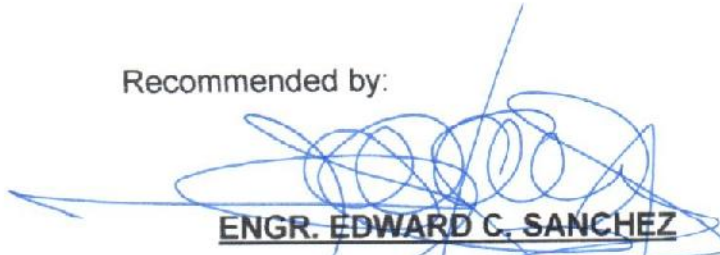
IX. WARRANTY

Warranty shall be for a period of one (1) year from the turn-over of the completed whole project.

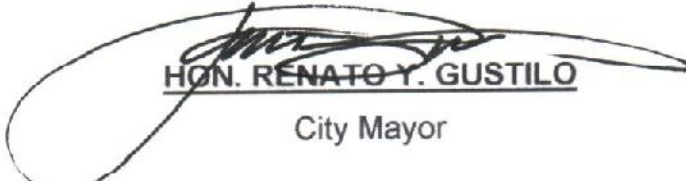
Prepared by:


JERIC F. VILLARINO
Engineer III

Recommended by:

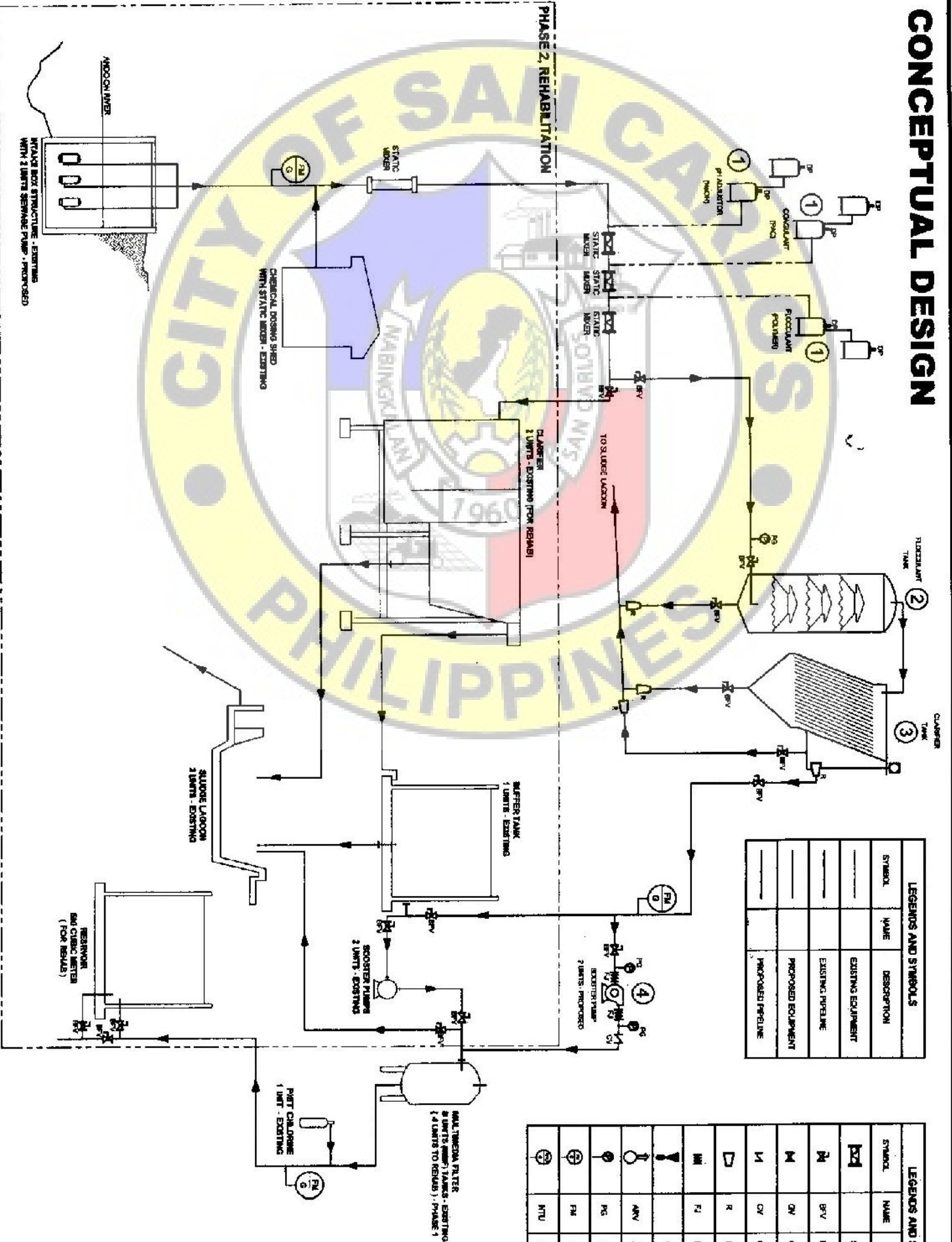

ENGR. EDWARD C. SANCHEZ
City Gov't. Dept. Head I

Approved by:


HON. RENATO Y. GUSTILO
City Mayor

CONCEPTUAL DESIGN

PHASE 2, REHABILITATION



LEGENDS AND SYMBOLS			
SYMBOL	NAME	DESCRIPTION	
		EXISTING EQUIPMENT	
		EXISTING PIPELINE	
		PROPOSED EQUIPMENT	
		PROPOSED PIPELINE	

LEGENDS AND SYMBOLS			
SYMBOL	NAME	DESCRIPTION	
SM	SM	STATIC MIXER	
BRV	BRV	BUTTERFLY VALVE	
GV	GV	GATE VALVE	
CV	CV	CHECK VALVE	
R	R	REDUCER	
FJ	FJ	FLEXIBLE JOINT	
BUL	BUL	BATTERY LIMIT	
AVV	AVV	AIR RELEASE VALVE	
PG	PG	PRESSURE GAUGE	
FM	FM	FLOW METER	
NTU	NTU	TURBIDITY METER	