TENDER DOCUMENT FOR THE REFURBISHMENT WORK FOR MELEKEOK WASTEWATER TREATMENT PLANT



PALAU PUBLIC UTILITIES CORPORATION

Issued on:

Closed on:

Request For Proposal No. (RFP No.):

Owner:

July 10, 2020

August 10, 2020

RFP-PUCW20-005

Palau Public Utilities Corporation (PPUC)

PO Box 1372, Oldiais Building,

Medalaii, Koror

Republic of Palau 96940

Country:

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1. PREFACE

This Request for Proposals (RFP) for Refurbishment of the Melekeok Wastewater Treatment Plant has been prepared by Palau Public Utilities Corporation (Wastewater Operations). PPUC seeks Proposals from all interested persons or firms with the capability to supply and install all items and services to refurbish the WWTP in Melekeok State in the Republic of Palau, as presented herein

All responses to this RFP shall be presented as a Lump Sum offer.

2. BACKGROUND

The Palau Public Utilities Corporation operates the Melekeok WWTP with the capacity of 225 m³/day (60,000 gal/day) to service a portion of the population of Melekeok. This WWTP was commissioned in about 2008 and uses a Membrane Bioreactor (MBR) system with influent screening, nitrification/denitrification and belt press solids management. A portion of the treated water from the plant is recycled for farming and external use but is not potable and not for human consumption.

The plant has experienced the following failure of processes and equipment at all phases. A brief overview includes:

The influent screen has been removed from service or is not operating. All Pumps (dry and wet) in various units require replacement (effluent, equalization, nitrification and denitrification tanks, etc) as per the OEM. Only one of three air blowers is in operation. The MBR filter panels have recently been installed and additional 500 panels are required for future maintenance purpose as per OEM panel specifications. The Belt Filter Press with unit equipment has not operated for several years, and chemical dosing systems have been disconnected or are not operating. No flow monitoring systems are functioning, and it is doubtful if the Ultra-Violet disinfection system is effective. The WWTP Internal piping systems are generally uPVC. Paint has peeled off and the pipes have become fragile. There are no indicators of contents or flow direction on the pipes. Several inline valves on the pipes have lost handles, and various pipework has been either disconnected or has failed. A control panel is installed but gauges and indicator lights may not be operating correctly. Standby generator has not operated for several years (capacity of 32.5 KVA). Recycle water tank piping and valves are not operating well. The WWTP fence have damages on some sections and is required to replace with existing dimensions. There is no list and supply of manufacturer recommended spare parts for 2 years and 5 years. There are no Operation and Maintenance manuals for installed equipment. Testing and commissioning of the Plant.

3. SCOPE OF WORK

The work required to be completed consists of inspection of all operating systems to determine their operational condition, recommend repair, replacement or alternative processes, and provide cost estimates for the work based on findings.

An itemised list of process equipment is provided in Table 1. This list may not be complete. Advice is provided based on preliminary inspections. Detailed inspection, testing and determination of the status of the equipment is required. It is imperative that the proposals be completed by persons with experience in sewage treatment, and particularly operation of Membrane Bioreactor systems (MBR Technology Package Wastewater Treatment Plant). Electrical and Mechanical skills are required for inspection and testing of process equipment. The work includes, but may not be limited to the following items.

Table 1: Refurbishment works at Melekeok WWTP

#	ITEM	ITEM REQUIREMENTS				
1	Influent screening and disposal system	The Inlet Screw conveyor has not operated for several years and the main control panel has missing components. Repair/replacement of mechanical and electrical parts to achieve performance complying with Original Equipment Manufacturer (OEM) specifications. Specify collection bins for the material removed by the screw conveyor. The bins				
		must allow the screened materials to be transported and disposed of hygienically.				
2	Equalisation tank and mixers	Inspect and test mixers for serviceability. Repair/replacement of mixers as per the OEM specifications. All pipework is to be inspected thoroughly and replace/repair of any failed pipes and valves. Clean and paint of existing roof at inlet works.				
3	Denitrification tanks mixers and pumps	Inspect and test mixers for serviceability. Repair/replacement of mixers as per the OEM specifications. All pipework is to be inspected thoroughly and replace/repair of any failed pipes and valves.				
	MBR system	Supply of MBR filter panels as per OEM specifications include necessary panel fittings. All pipework is to be inspected thoroughly and replace/repair of any failed pipes and valves.				
4		Supply and installation of two flowmeters at MBR tanks outlet pipes and flowmeters at main effluent pipe.				
		Inspect and test blowers for serviceability. Repair/replacement of blowers as per the existing specifications.				
5	Chemical Units (Polyacrylamide mixing tank)	Chemical dosing tank mixers and pumps are to be inspected and tested for serviceability. Repair/replacement of mixers and pumps as per existing capacities. All pipework is to be inspected thoroughly and replace/repair of any broken pipes and failed valves.				
6	Ultra-Violet disinfection system;	Ultra-violet disinfection system has not operated for several years. Replace of entire unit in kind and per existing capacity.				
		Repair/replace of sludge tank mixers as per the existing arrangement. Inspect Belt Press operational performance and repair/replacement of parts and recommission of entire unit.				
7	Solids management systems & Belt Press	Supply and install of suitable sludge collection bins for collection and transportation through vehicle to landfill. Repair/replace of sludge mixing pumps. All pipework is to be inspected thoroughly and replace/repair of any broken pipes				
		and failed valves. Clean and paint existing belt press and storage room (internal & external) and roof.				
0	Recycled Water Storage Tank	Supply and Installation of new level monitoring system. Replace of faulty valves and pipe work within and around the tank which include cleaning, painting, and other works.				
8		Replace of electrical meter box include laying of new cables and necessary fittings. Replace/repair of existing fence and entrance gate. Replace Effluent Pumps. Note: Fibre glass paint with two coats around and above the tank.				
9	Recycled Water System	Repair of recycle water system and reconnect it to existing system. Include repair/replace of pipe, pipe fittings, valves, and other necessary parts.				

#	ITEM REQUIREMENTS					
Replacement of main electrical control panel as per existing specification of control panel labelling/configuration to assist operator for underst regular usage.						
11	Standby Generator	Existing standby Generator has not operated for several years, with the capacity 30 KW/37KVA. Replace and upgrade with new capacity of 40KW/50KVA whinclude automatic transfer switch ATS.				
12	WWTP Boundary	place fence around the treatment plant and install new fence with double gar r heavy trucks and man over gate.				
13	Staff facilities and Lab equipments	Construction of office room for operational staff (about 5 staff) for regular usage/office works. Include furniture and other necessary office equipments. Install new lab equipments and improve existing storage area.				
14	Spare parts	Supply of manufacturer recommended spare parts for 2 years and 5 years for regular operation and maintenance activities.				
15	O&M manual for Process	O&M manuals are required for all individual newly installed equipment for regular maintenance activities.				
16	Testing of the plant	Commissioning and testing of the overall plant include individual units.				

4. ADDITIONAL DETAILS

On completion of the inspection and testing phase, the Contractor will provide the following deliverables:

- 1. An Engineer's cost estimate for repairs, replacements and improvements, to include specifications for the required works and recommendations for further actions.
- 2. Individual specifications and drawings are required for all pumps and other Mechanical and Electrical equipments.

5. PAYMENT TERMS

All payments shall be made on receipt of an original invoice from the Contractor for each work phase, certified by a duly authorized PPUC representative or in accordance with conditions agreed between both parties. Payments shall be made as follows:

- A. Payment terms shall be determined as follows:
 - a. After evaluation per proposal.
 - b. After negotiations with the winning offeror.
 - c. All payments shall be made after receipt of original invoice from contractor for each work phase, certified by a duly authorized PPUC representative.

6. SUBMISSION OF QUOTATIONS

Bidders should include the following items in their Quotations:

- 1. An appreciation of the scope of work demonstrating their understanding of the tasks;
- Names and Curriculum Vitae of the representatives proposed to be engaged to complete the
 assignment. It is a requirement that the person(s) proposed must have skills in the fields of sewage
 process analysis and design, particularly Membrane Bio filter (MBR Technology) processes, electrical
 control systems, power supplies, pumps and mechanical equipment;
- 3. Schedule of works showing proposed timelines for completion of the work; (Bar Chart) and
- 4. A Lump Sum Proposal for provision of the services.

The Bidder will be responsible for all costs including International and/or local travel, and accommodation and travel costs while in Koror.

7. INSTRUCTION TO BIDDERS

7.1 Documents for submission

To prepare a proposal, please use the attached Documents / forms in Appendix A (technical Proposal) & Appendix B (Financial proposal).

7.2 Consulting Firms / Consultant requiring a clarification of the Documents must notify the Client, in writing, not later than ten (10) days before the proposal submission date. Any request for clarification in writing, or by cable, telex or telefax shall be sent to the Client's address indicated below in these Instructions to Bidders.

Attention:

Mr. SOFRONIO B. MAHOR

Chief Procurement Officer Palau Public Utilities Corporation Oldiais Building, Medalaii, Koror PO Box 1372, Republic of Palau 96940

Telephone No.: (680) 488-3870/3872 E-mail Address: ponz@ppuc.com

7.3 At any time before the submission of proposals, the Client may, for any reason, whether at its own initiative or in response to a clarification requested by a participating consulting firm, modify the Documents by amendment. The amendment shall be sent in writing or by cable, telex or telefax to all invited consulting firms and will be binding on them. The Client may at its discretion extend the deadline for the submission of proposals.

7.4 Preparation of Proposal

You are requested to submit a technical and a financial proposal. Your proposal shall be in **English** language only.

7.5 Technical Proposal

In preparing the technical proposal, you are expected to examine all terms and instructions included in the Documents. Failure to provide all requested information shall be at your own risk and may result in rejection of your proposal.

During preparation of the technical proposal, you must give particular attention to the following:

Your technical proposal shall provide the following and any additional information, using the formats attached in **Appendix A:**

- (i) Details of Firm's
- (ii) Firm's past experience
- (iii) Firm's key personnel for this project
- (iv) CVs of Key staff
- (v) Work Plan and time schedule for key staff

The technical proposal shall not include any financial information.

7.6 Financial Proposal

Your financial proposal should be prepared using the formats attached in BOQ.

The financial proposal shall take into account the tax liability and cost of insurance.

Costs must be expressed in USD only.

8. PRE-BID MEETING.

A mandatory pre-bid meeting will be held on July 31, 2020 at 10.00 a.m at the PPUC Main office conference Room, Oldiais Building in Koror. Potential Bidders must advise the Contract Officer that they will attend.

Bidders failing to attend the pre-bid meeting will be disqualified and will not be qualified for the tender.

9. SUBMISSION OF PROPOSAL

You shall submit one original technical proposal and one original financial proposal. Each proposal shall be in a separate envelope. The technical proposal shall be placed in an envelope clearly marked "Technical Proposal," and the financial proposal in one marked "Financial Proposal." These two envelopes, in turn, shall be sealed in an outer envelope bearing the address of Palau Public Utilities Corporation, Oldiais Building, Medalaii, Koror, PO Box 1372, Republic of Palau 96940 and the envelope shall be clearly marked: "Refurbishment works of Melekeok WWTP".

"DO NOT OPEN, EXCEPT IN PRESENCE OF THE TENDER OPENING"

The original of the technical and financial proposal shall be prepared in indelible ink and shall be signed by the authorized Consultant's representative. The representative's authorization shall be confirmed by a written power of attorney accompanying the proposals. All pages of the technical proposal shall be initialed by the person signing the proposal.

The proposal shall contain no interlineations or overwriting except as necessary to correct errors made by the Consultants themselves. Any such corrections shall be initialed by the person signing the proposal.

The proposals shall be valid for the **three (3)** calendar months from the date of its submission. During this period, you shall keep available the professional staff proposed for the assignment. The Client shall make its level best to complete the evaluation report within this period.

The date, time and address for submission of the Technical & Financial Proposal will be Not later than 4:00 PM Palau Time on the Closing date at Palau Public Utilities Corporation, Oldiais Building, Medalaii, Koror, PO Box 1372, Republic of Palau 96940.

10. WITHDRAWAL OF PROPOSAL

Proposals may be withdrawn by written or telegraphic notice received at any time prior to award. Proposals may be withdrawn in person by a proposer or his authorized representative, provided his identity is made known and he signs a receipt for the withdrawal of the offer prior to award.

11. MODIFICATION OF PROPOSAL

Except as otherwise decided by the Client, modifications to proposals must be received not later than the closing date and time specified for receipt of proposals made in response to the request for proposals. Modifications must be made by written or telegraphic notice which clearly identifies the proposals being modified, the nature of the modification, the reference of the request for proposals as well as the closing date and time for receipt of proposals. Modifications must be delivered in writing to the office designated for receipt of proposals with the reason(s) for the modifications.

12. TENDER OPENING

Proposals received by the Client before the closing date and time of their submission shall be opened at Palau Public Utilities Corporation, Oldiais Building, Medalaii, Koror, PO Box 1372, Republic of Palau 96940.

13. EVALUATION OF BIDS

The technical Offer shall be evaluated on a pass or fail basis. The consideration of the evaluation shall be on the basis of; does the Firm have required past experience, does the key staff members listed for the assignment have required qualification for the services to be rendered. All offers that pass the technical evaluation shall then compete on price of their financial offer, bidders who fail the technical evaluation, its financial offer will be returned and will not be included in the financial evaluation.

The evaluation committee shall determine whether the financial proposals are complete and without computational errors. The lowest financial proposal amongst those that pass the technical evaluation shall be favored.

14. TAXES/LICENSES/FEES

- (a) All tenders should be on the basis that all applicable taxes and duties will be applied.
- (b) Compliance with the social security act will be applicable to all successful bidders (resident & non-resident).

Non-resident firms should obtain an official license from the Palau licensing authority, for performing the services under the contract awarded. The non-resident firm's bid must hence allow for all licensing fees as well.

Any expatriate staff entering the country will have to abide by the requirements of the Immigration Department and pay any fees required for entry and for obtaining VISA.

15. CORRUPT OR FRAUDULENT PRACTICES

The Public Utilities Corporation requires that Bidders/Suppliers/Contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the following terms are defined as follows:

- (i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and
- (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Public Utilities Corporation, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

16. APPENDIX A – (TECHNICAL PROPOSAL)

Chief Executive Officer Palau Public Utilities Corporation P.O Box 1372 Koror Republic of Palau

Sir:

SUBJECT: REFURBISHMENT WORKS OF MELEKEOK WASTEWATER TREATMENT PLANT

Regarding Technical Proposal
/We Consultant/Consultancy Firm herewith enclose a Technical Proposal for selection of my/our firm/organization as Consultant for Refurbishment Works of Melekeok WWTP.
Yours faithfully,
Signature
(Authorized Representative) Full Name
Designation
Address
Date

17. SITE IMAGES



Inlet works



Inlet channel with automatic screen



Screen conveyor



Influent screen pumps



Electrical cabling



Control panel



Equalization tank



Sludge Tank



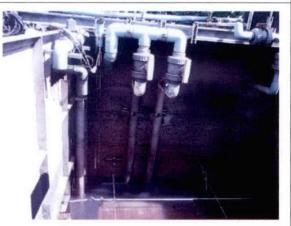
MBR process tank



Inlet/Outlet pipes to MBR tank



Denitrification tank



MBR tank



Chemical Dosing Tank



Flow meter



Pipework outside control room



Air blowers and final effluent pipe



Chemical tanks



Effluent tank and pumps



Sludge and equalization tank pumps



Feed pumps



UV system



Belt Filter press

18. SPECIFICATIONS AND COST ESTIMATE

#	Description of Works	Qty	Unit	PRICE (\$)
1	The inlet micro-strainer has been removed from services	1	lot	
	Repair or replace of Control panel electrical parts and equipments			
	Repair and replace of Screw conveyor mechanical parts			
	Supply and installation of screen collection Bins			
	Repair of pipe and fittings at inlet works.			
2	Equalization tank: Replace of Equalization tank feed pump and mixing pump.	1	lot	
	Install lifting hooks and chains with recommended materials (stainless steel), repair/replace of cover, replace of pipes and valves. Cleaning and removing accumulated sludge solids.			
	Equalization Tank Mixing Pump: (TSURUMI Submersible Pump with Jet Mixer) Model: 50B2.75, -61; Power: 1.0 HP (0.75 kW); Pump Head: 8.0 meter, Capacity: 0.21 m³/min; Voltage: 220V, 3-Phase, 60Hz			
	Equalization Tank Feed Pump (TSURUMI Submersible Pump) Model: 50SF2.75, -63; Disc.: 50mm; Power: 1.0 HP (0.75 kW); Capacity: 0.3 m³/min; Pump Head: 17.6 meter; Voltage: 220V, 3-Phase, 60Hz			
3	Denitrification Tank : replace of mixers/jet pumps and transfer pumps:	1	lot	
	Denitrification Tank Mixing Pump (TSURUMI Submersible Pump with Jet Mixer) Model: 50B2.75, -61; Power: 1.0 HP (0.75 kW); Capacity: 0.21 m³/min; Pump Head: 8.0 meter; Voltage: 220V, 3-Phase, 60Hz.			
	Denitrification Transfer Pump (TSURUMI Submersible Pump) Model: 80U22.2, -62; Power: 3.35 HP (2.2 kW); Capacity: 0.82 m³/min; Pump Head: 17.5 meter; Voltage: 220V, 3-Phase, 60Hz; Stainless steel chains; Brackets and supports.			
4	Membrane Biofilter Tank: Replace/repair pumps, flow meters, and other equipments	1	lot	
	Supply and installation of membrane filter panels for both tank around 500 filter panels. Replace pumps, blowers, and necessary parts and panels.			
	No flow monitoring systems are functioning Burkert Magnetic Flow Meter @ MBR Outlet with 2" connection; Burkert Magnetic Flow Meter @ effluent line with 3" connection; Flow Meter @ Inlet Line PS-1			
	Membrane Unit Blower Type: QA132S4; CRO Root Blower; Capacity: 4.0 m³/min; Speed: 1750 rpm; Power: 7.5 HP; Air Filter, Inlet Air Filter Housing; Blower Muffler			
	Membrane Biofilter Permeate Pump SN#: M43212; Capacity: 185 L/min; Power: 1.0 HP; Pump Head: 6m; Speed; 1750 RPM; Voltage: 220V, 3-Phase, 60Hz			
	Repair/replace of various types of pipes and pipe fittings inside and around MBR tanks.			
5	Chemical Unit: Replace of all mixers, pumps and other equipments	1	lot	
	PAC tank mixers SUS304 shaft + impeller; Speed: 120rpm; Power:0.4 kW			
	Polyacrylamide (PAC) diaphragm Pumps (TECO Diaphragm Pump) Power: 1/4 HP; Voltage: 220V, 3-Phase, 60Hz			

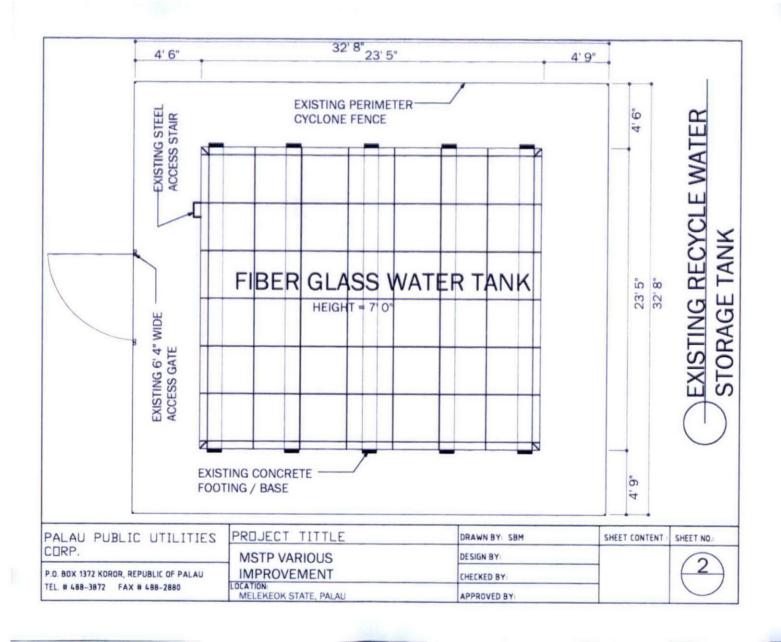
	Polymer mixers			
	SUS304 shaft + impeller; Speed: 120rpm; Power:0.4 kW			
1	Polymer Diaphragm Pumps (TECO Diaphragm Pump)			
	Power: 1/4 HP; Voltage: 220V, 3-Phase, 60Hz			
	Repair/replace of various types of pipes and pipe fittings inside and around chemical			
	unit.	ļ		
6	Ultra-violet disinfection System: Repair/replace of entire unit	1	lot	
	50 mm, capacity 2.6 l/s (225 m3/d), 840W, 0.28 – 2.8 kg.cm2, and Wavelength 254 nm;			
	Inspect and determine the operational status and efficiency of the UV system.			
<u></u>	Replacement of parts and light fittings as necessary.			
	Replace of pipes and pipe fittings.			
7	Belt Filter Press (Solid Management system)	1	lot	
	The Belt Filter press has not operated for several years.			
	Repair or replace of all parts and equipments in belt filter press and following			
	equipments in Belt Press room.			
	Belt press No. 1 off Dual belts SS304, Belt width 500mm Capacity 2.0 m ³ /hr.			
	Polymer Tank No. 1 off @ 1,000 L polyethylene.			
	Polymer Mixer No. 1 off reduction gear 1200 rpm SS304 shaft + impeller, 0.4 Kw.			
ļ	Belt Press Sludge Pump No. 2 off (1 spare), screw pump 50 mm, 0.3 L/s, 1.0 HP.	ĺ		
	Polymer Dosing Pump No. 2 off (1 spare) Diaphragm Pump, Max Q 35 L/s, 0.2 Kw.			
1	Supply and install of suitable sludge collection bins for collection and transportation			
<u> </u>	through vehicle to land fill.			
	Mixing Pump for Sludge Tank: Replace of mixing pump for sludge tank (HCP Pump)			
	Model: F-05A; Power: 0.5 HP (0.4 kW); Capacity: 0.1 m³/min; Pump Head: 8.0 meter;			
	Voltage: 110-120V, 1-Phase, 60Hz			
	Cleaning and painting work at Belt press room inside and outside.			
8	Recycle water storage tank	1	lot	
	Installation of new level monitoring system.		1	
	Replace faulty valves and pipe work within and around the tank include site cleaning and			
	clearing all debris from the refurbishment works, painting, and other necessary works.			
1	Replace of electrical meter box include laying of new cables.			
	Clean and paint (fibre glass paint) with two coats around and above the tank.			
	Replace/repair of existing fence and entrance gate include fence removal and disposal.			
	Installation of new roof for the tank include all necessary parts.			-
	Refer attached drawings for dimension/specifications.			
	Effluent Pump:			
	Repair/replace of effluent pump (Grundfos Multi-Stage Centrifugal Pump)			
ļ	Type: CRI10-09; Power: 5.50kW; Hmax: 133m; Qmax: 12.1 m³/hr.			
9	Recycled Water System: Repair of entire system	1	lot	
	Repair of recycle water system and reconnect it to existing system, which include			
ļ	repair/replace of pipe, pipe fittings, valves, and other necessary parts.	_		
10	Control Panel: replace main control unit	1	lot	
	Replacement of main electrical control panel as per existing specifications. Analyse of			
	control panel labelling/configuration to assist operator for understanding and regular			
	usage.			
11	Standby Generator	1	iot	

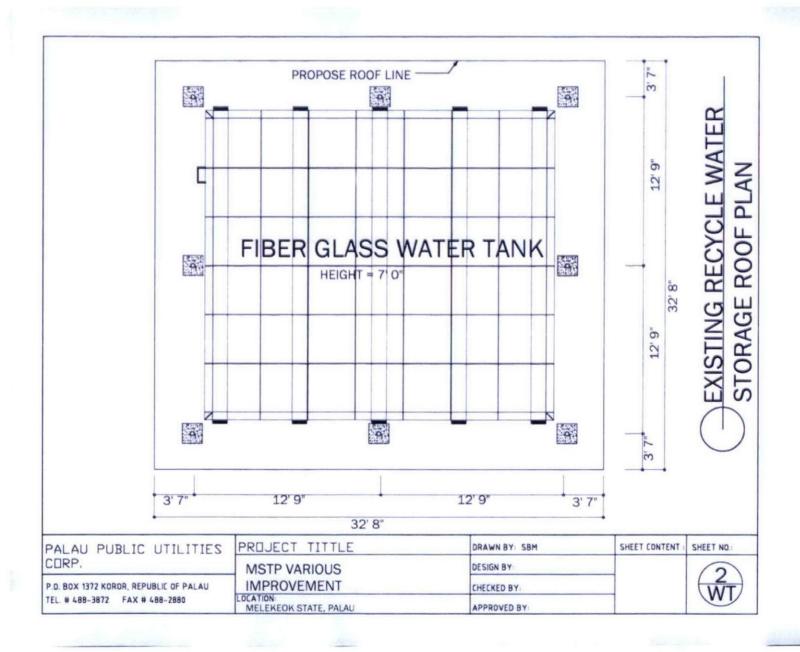
	Commissioning and testing of the overall plant with individual units.			
16	O&M manuals are required for all individual newly installed equipment for regular maintenance activities. Testing of the plant	1	lot	
15	O&M Manuals	1	lot	
	Supply of manufacturer recommended spare parts for 2 years and 5 years for regular operation and maintenance activities. Most spare parts for pumps, mixers, gauges, control panel electrical parts, etc.			
14	Spare Parts	1	lot	
	Construction of office room for operational staff (about 5 staff) for regular usage/office works. Include furniture and other necessary office equipments. Install new lab equipments and improve existing storage area. Refer attached drawings for dimensions/specifications.			
13	Staff Facilities and Lab equipments	1	lot	
	Replace fence around the treatment plant and install new fence with double gate for heavy trucks and man over gate. Refer attached drawings for dimension/specifications.			
12	WWTP boundary			
	Existing standby Generator has not operated for several years with capacity of 30 KW/37KVA. Replace and upgrade with new capacity of 40 KW/50KVA which include automatic transfer switch ATS.			

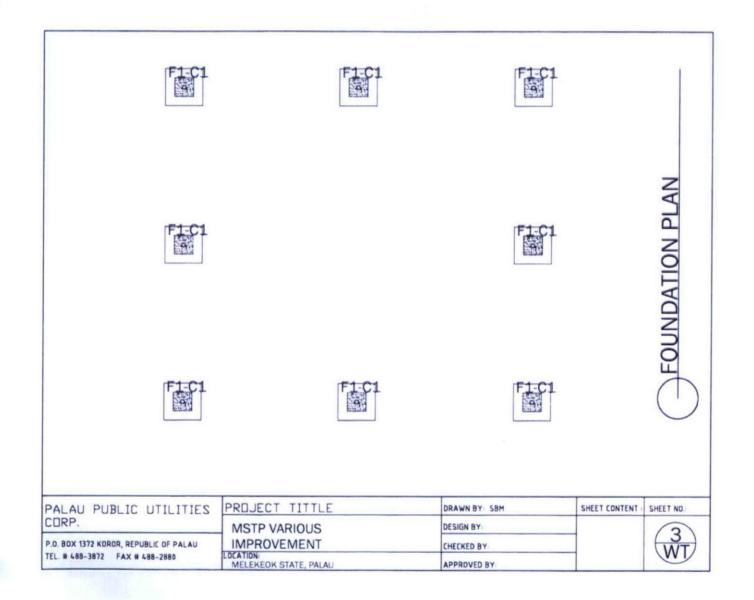
Note: Please once again compile all equipment specifications onsite before quote.

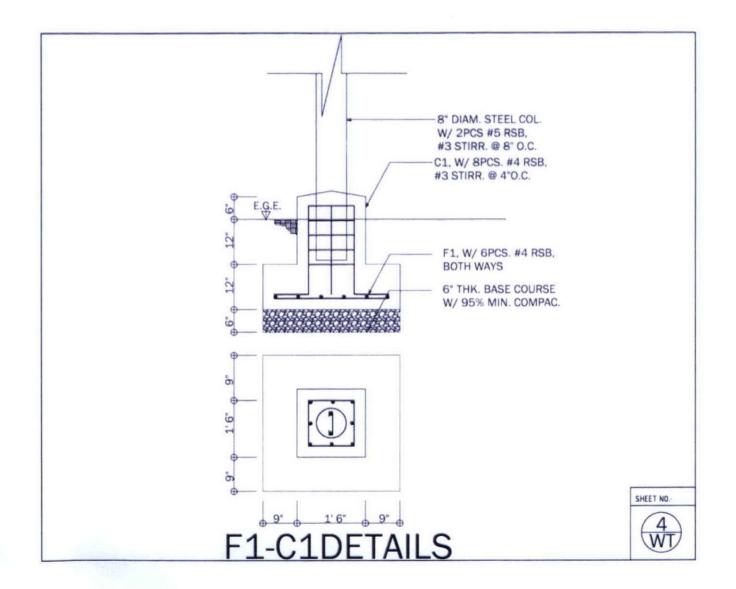
DRAWINGS

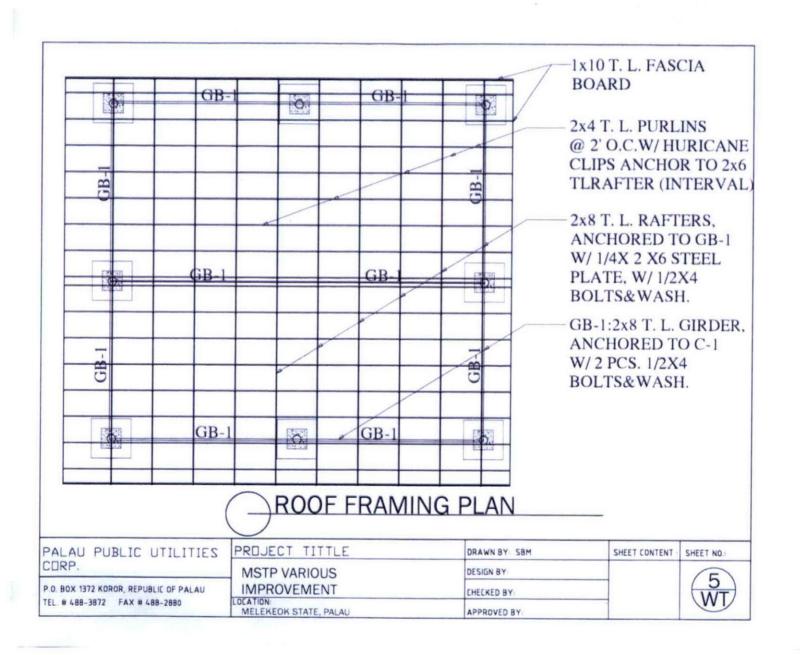
ROOF FOR RECYCLE WATER TANK

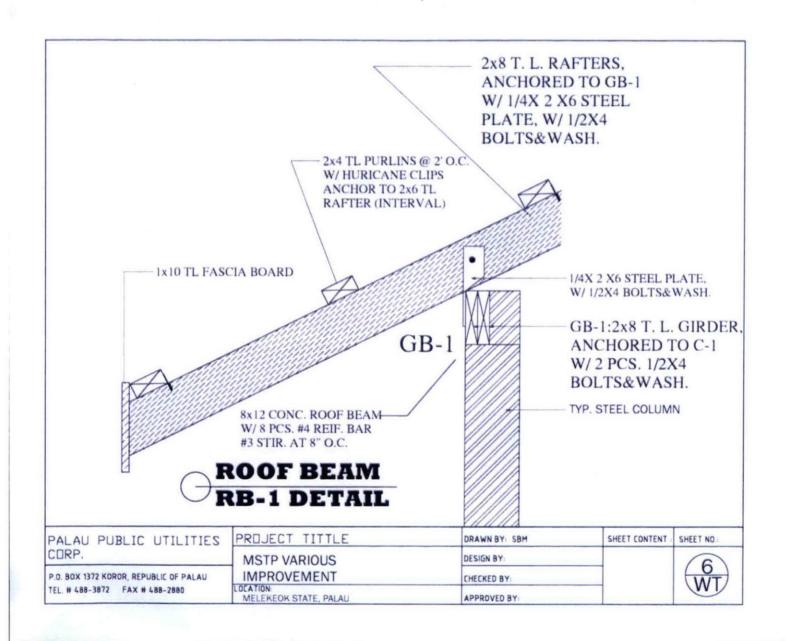


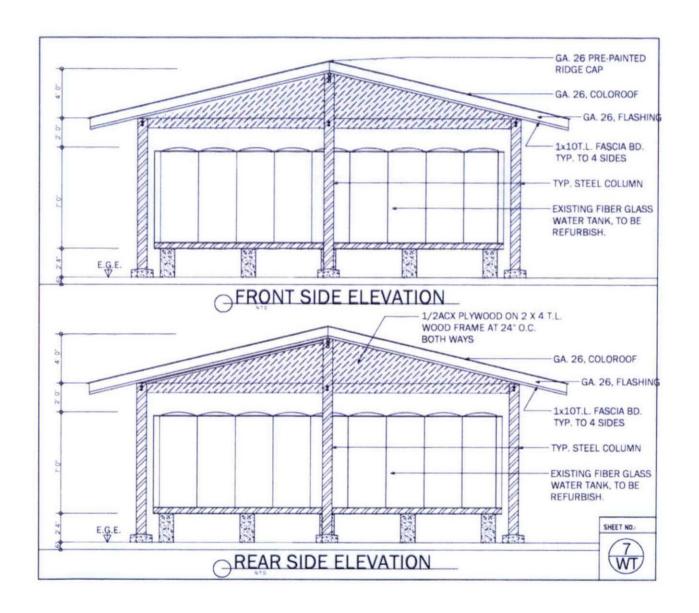


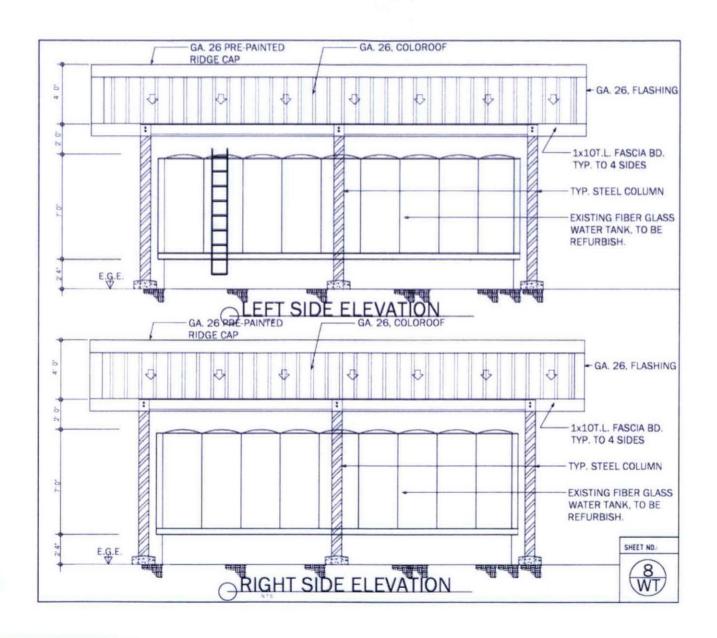






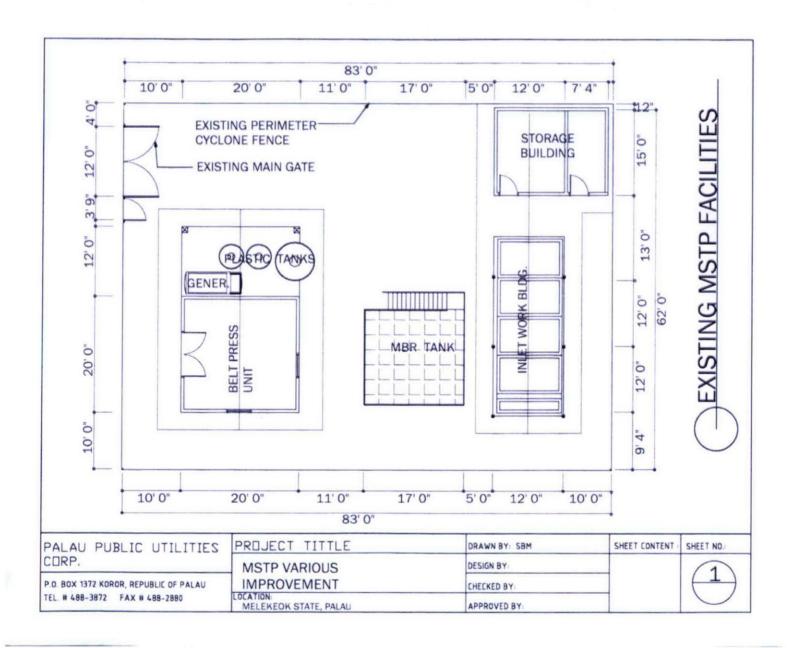


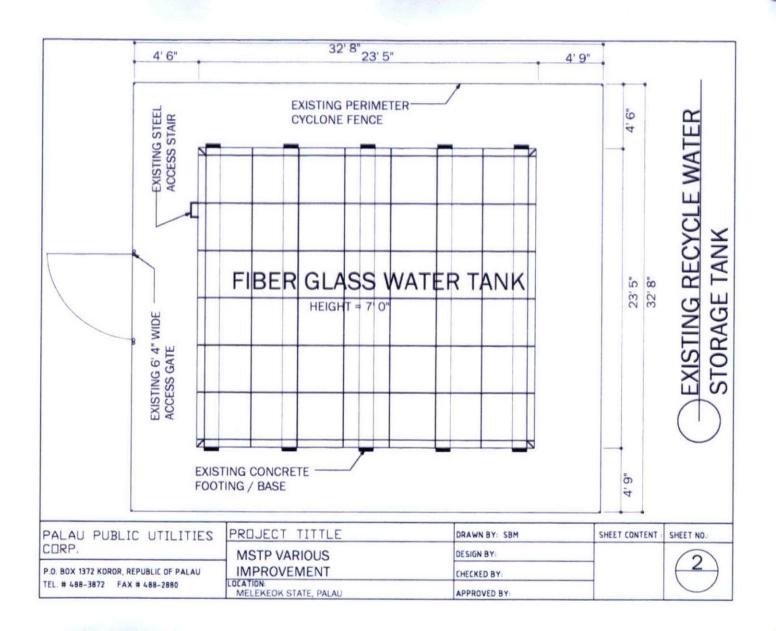


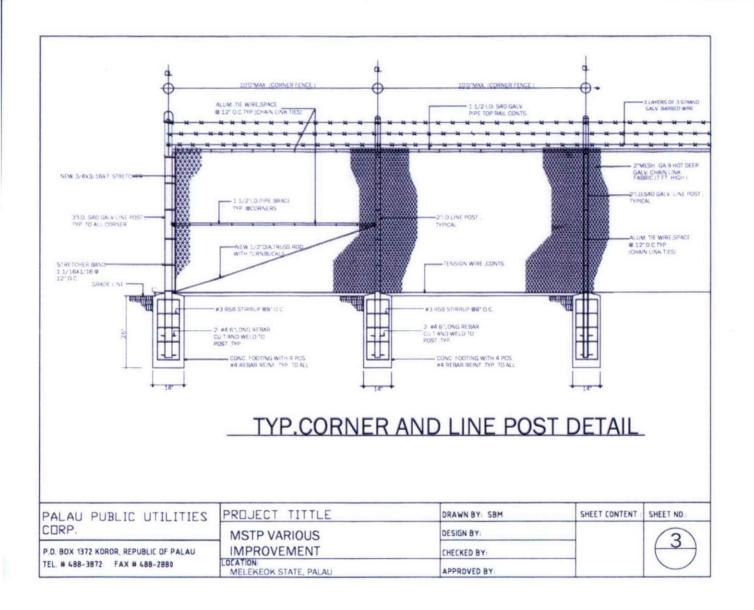


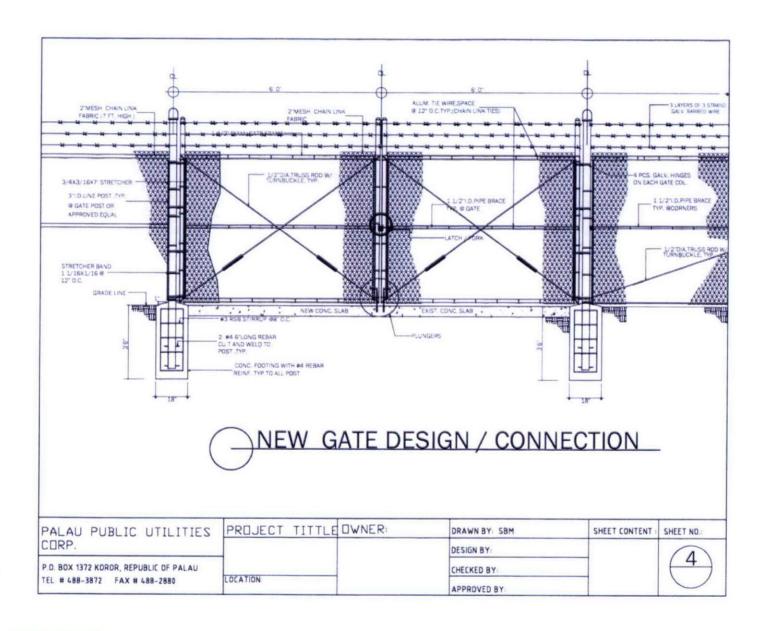
DRAWINGS

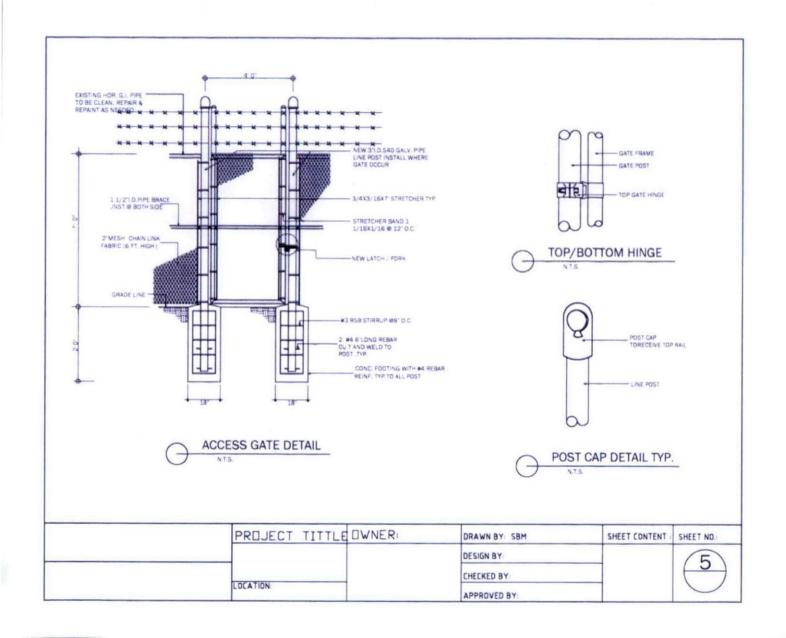
FENCING FOR WASTEWATER TREATMENT PLANT & RECYCLE WATER TANK











DRAWINGS

STAFF OFFICE FACILITIES AT WASTEWATER TREATMENT PLANT

