



CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 12-FY2018

RELATIVE TO APPROVAL OF CHANGE ORDER NO. 4 FOR THE NORTHERN AND SOUTHERN GUAM RESERVOIR DESIGN SERVICES

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA is currently working on critical reservoir projects under the 2011 Court Order (“CO”) Paragraph 29 – Storage Tank/Reservoir Repair, Replacement, and Relocation Program; and

WHEREAS, The CCU approved via Resolution No. 20-FY2015 (Exhibit A) for GWA management to enter into contract with TG Engineers, P.C. to provide design services for the Northern and Southern Guam Reservoirs, as well as Resolution No. 56-FY2016 (Exhibit B) that approved a Change Order to TG Engineers, P.C. for additional design services that totaled Three Million Eighty-Seven Thousand Thirty-Two Dollars (\$3,087,032.00); and

WHEREAS, GWA issued Change Order No. 1 to No. 3 to TG Engineers, P.C. for additional services that were not identified in the original scope of work but subsequently required due to the following:

- (1) land acquisition for various project sites;
- (2) design for several additions and revisions to the pipe system to complete the pressure zone realignment which includes surveying and environmental service for Santa Rita and Santa Rosa Reservoirs;

- 1 (3) design for the new Unified Facilities Criteria (“UFC”) structural code requirements
2 for Ugum, Santa Rosa, Santa Rita, and Sinifa Reservoirs, and Inarajan Booster Pump
3 Station that was not in effect at the time of contract execution;
- 4 (4) additional land acquisition support for the Government of Guam Chamorro Land
5 Trust (CLTC) property, additional Archaeological and Unexploded Ordinances
6 (UXO) monitoring, and design to include the new GWA-AAFB tank interconnection
7 system for the Santa Rosa Reservoir;
- 8 (5) design for new Booster Pump Station and a new Pressure Reducing Valve (PRV) to
9 be added into the system in the vicinity of Agfayan Subdivision in Inarajan as part of
10 the Pressure Zone Realignment plan;
- 11 (6) percolation tests to be included at each project site location for drainage basins,
- 12 (7) design to incorporate the Siemens controls from the existing Ugum plant to be
13 extended to the new Ugum Reservoir and facilities; and

14
15 **WHEREAS**, in the ongoing design and analysis of the reservoirs and the water system
16 served by the noted reservoirs, further design services listed below were identified as being
17 above and beyond original scope requirements but necessary to move forward with improving
18 the functionality of the water system:

- 19 (1) Santa Rosa: design of new 4,120 LF of 12-inch pipe along Route No. 1 in Yigo;
- 20 (2) Santa Rosa: Identification and survey of easements for agreements with DoD;
- 21 (3) Agfayan Booster Pump Station: design of pressure reducing valve near original bps
22 site;
- 23 (4) Agfayan Booster Pump Station: Investigate 4 lots as new alternatives for the new
24 booster pump station location;
- 25 (5) Ugum Reservoir: Investigate a new alternative for the reservoir location. The new
26 alternative involves consolidating 2 lots adjacent and south of the existing plant to
27 provide the site needed for the new reservoir and facilities;
- 28 (6) Ugum Reservoir: Existing water treatment plant drainage will be corrected in the new
29 design and plans;
- 30 (7) Santa Rita: Incorporate roadway repair in the design. New design to replace existing
31 culvert;

1 (8) Sinifa: Prepare construction easements and construction support documents for 2 lots;
2 and

3
4 **WHEREAS**, GWA engineering and TG Engineers, P.C. negotiated the price for the
5 above services to be provided in the amount of Five Hundred Thirty-Seven Thousand Eight
6 Hundred Eighty Dollars and Twenty-Five Cents (\$537,880.25) (See Exhibit C); and

7
8 **WHEREAS**, GWA management is seeking CCU approval of additional funding in the
9 amount of Five Hundred Thirty-Seven Thousand Eight Hundred Eighty Dollars and Twenty-Five
10 Cents (\$537,880.25); and

11
12 **WHEREAS**, the approval of the Five Hundred Thirty-Seven Thousand Eight Hundred
13 Eighty Dollars and Twenty-Five Cents (\$537,880.25), along with the prior authorized contract
14 value of Three Million Eighty-Seven Thousand Thirty-Two Dollars (\$3,087,032.00) will bring
15 the total authorized funding for the design contract with TG Engineers, P.C. to Three Million Six
16 Hundred Twenty-Four Thousand Nine Hundred Twelve Dollars and Twenty-Five Cents
17 (\$3,624,912.25); and

18
19 **WHEREAS**, funding for this change order will be from the Bond Funds under the line
20 item "PW 09-11 Water System Reservoirs 2005 Improvements"; and

21
22 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
23 does hereby approve the following:


- 24
- 25 1. The recitals set forth above hereby constitute the findings of the CCU.
 - 26 2. The CCU finds that the terms of the fee proposal submitted by TG Engineers,
27 P.C. are fair and reasonable (Exhibit C).
 - 28 3. The CCU authorizes GWA management to execute Change Order No. 4 in the
29 amount of Five Hundred Thirty-Seven Thousand Eight Hundred Eighty
30 Dollars and Twenty-Five Cents (\$537,880.25).
 - 31 4. The CCU hereby further approves increasing the total authorized funding for
32 the design contract with TG Engineers, P.C. to Three Million Six Hundred

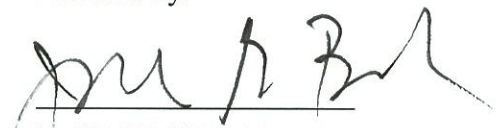
1 Twenty-Four Thousand Nine Hundred Twelve Dollars and Twenty-Five Cents
2 (\$3,624,912.25).

- 3 5. The CCU hereby further authorizes the funding source to be from bond funds
4 under the CIP line Item PW 09-11 "Water System Reservoirs 2005
5 Improvements".
6

7 **RESOLVED**, that the Chairman certified and the Board Secretary attests to the adoption
8 of this Resolution.

9
10 **DULY AND REGULARLY ADOPTED** this 23rd day of January 2018.

11
12 Certified by:
13 
14 **JOSEPH T. DUENAS**
15 Chairperson
16

17
18 Attested by:
19 
20 **J. GEORGE BAMBA**
21 Secretary
22

23
24
25 **SECRETARY'S CERTIFICATE**

26 I, J. George Bamba, Board Secretary of the Consolidated Commission on Utilities as
27 evidenced by my signature above do hereby certify as follows:

28 The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular
29 meeting by the members of the Guam Consolidated Commission on Utilities, duly and
30 legally held at a place properly noticed and advertised at which meeting a quorum was
31 present and the members who were present voted as follows:

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Exhibit A (1 of 4)

GUAM CONSOLIDATED COMMISSION ON UTILITIES RESOLUTION NO. 20 – FY2015

RELATIVE TO CONTRACT APPROVAL FOR THE NORTHERN AND SOUTHERN GUAM RESERVOIRS DESIGN SERVICES

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WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA is currently working on critical reservoir projects under the 2011 Court Order (“CO”) Paragraph 29 – Storage Tank/Reservoir Repair, Replacement, and Relocation Program; and

WHEREAS, GWA has advertised the Request For Proposals (RFP-09-ENG-2014) soliciting statement of qualifications from experienced and qualified engineering firms for the preparation of design plans and specifications for the Northern and Southern Guam Reservoirs; and

WHEREAS, the Northern and Southern Guam Reservoir design project includes site investigations and system evaluations at the Santa Rita, Santa Rosa, Inarajan, Sinifa, and Ugum reservoir sites, development of design plans and specifications for various sized concrete reservoirs ranging from 0.2 MG to 2.0 MG nominal capacities, booster station upgrades, instrumentation and control upgrades, control valves upgrades, pipe upgrades, and other general site upgrades; and

WHEREAS, RFP packages were downloaded by forty five (45) interested parties, from which GWA received proposal submittals from ten (10) firms before the RFP submittal deadline; and

Exhibit A (2 of 4)

1 **WHEREAS**, the GWA A-E Selection committee reviewed and evaluated the ten (10)
2 proposals (see EXHIBIT A – Evaluation Score) and generated a short list of the top four (4)
3 firms with a recommendation to award a contract to the firm TG Engineers, P.C. and any
4 successor at interest thereto (see EXHIBIT B – Evaluation Summary and GM Determination);
5 and

6
7 **WHEREAS**, TG Engineers, P.C. and GWA negotiated the price for the services to be
8 provided in the amount of Two Million Five Hundred Thirty Two Thousand Five Hundred
9 Eighty Dollars (\$2,532,580.00) (see EXHIBIT C – Fee Proposal); and

10
11 **WHEREAS**, GWA management seeks approval of the fee proposal amount of Two
12 Million Five Hundred Thirty Two Thousand Five Hundred Eighty Dollars (\$2,532,580.00),
13 plus a ten percent (10%) contingency of Two Hundred Fifty Three Thousand Two Hundred
14 Fifty Eight Dollars (\$253,258.00) to bring the total authorized funding amount to a maximum
15 of Two Million Seven Hundred Eighty Five Thousand Eight Hundred Thirty Eight Dollars
16 (\$2,785,838.00); and

17
18 **WHEREAS**, funding for this project will be from the 2010 and 2013 Bond Funds
19 under the line items CIP PW 09-11 Water System Reservoirs 2005 Improvements and CIP PW
20 11-02 Ugum Water Treatment Plant Reservoir Replacement; and

21
22 **WHEREAS**, GWA management recommends that a contract be entered into with TG
23 Engineers, P.C. in the aforementioned base contract amount.

24
25 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
26 does hereby approve the following:

- 27
28 1. The recitals set forth above hereby constitute the findings of the CCU.
29 2. The CCU finds that the terms of the fee proposal submitted by TG
30 Engineers, P.C. is fair and reasonable.
31
32

Exhibit A (3 of 4)

- 1 3. The CCU finds that the terms of the conditions set by GWA relative to
2 commencement of subsequent work activities are fair and reasonable and
3 serve as a measure of Quality Assurance/Quality Control (QA/QC).
- 4 4. The CCU hereby authorizes the management of GWA to enter into a
5 contract with TG Engineers, P.C., in the amount of Two Million Five
6 Hundred Thirty Two Thousand Five Hundred Eighty Dollars
7 (\$2,532,580.00).
- 8 5. The CCU hereby further approves the total funding amount for this project
9 of Two Million Five Hundred Thirty Two Thousand Five Hundred Eighty
10 Dollars (\$2,532,580.00), plus a ten percent (10%) contingency of Two
11 Hundred Fifty Three Thousand Two Hundred Fifty Eight Dollars
12 (\$253,258.00) to bring the total authorized funding amount to a maximum of
13 Two Million Seven Hundred Eighty Five Thousand Eight Hundred Thirty
14 Eight Dollars (\$2,785,838.00).

15
16 **RESOLVED**, that the Chairman certified and the Board Secretary attests to the
17 adoption of this Resolution.

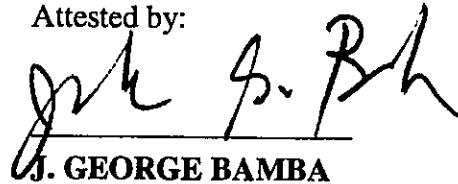
18
19 **DULY AND REGULARLY ADOPTED**, this 24th day of March 2015.

20
21 Certified by:

22 

23 **JOSEPH T. DUENAS**
24 Chairperson

21 Attested by:

22 

23 **J. GEORGE BAMBA**
24 Secretary

25
26 I, J. George Bamba, Board Secretary of the Consolidated Commission on Utilities as
27 evidenced by my signature above do hereby certify as follows:

28 /

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Exhibit A (4 of 4)

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: 5

NAYS: 0

ABSTENTIONS: 0

ABSENT: 0

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GUAM CONSOLIDATED COMMISSION ON UTILITIES

RESOLUTION NO. 56-FY2016

**RELATIVE TO APPROVAL OF CHANGE ORDER NO. 2 FOR THE NORTHERN
AND SOUTHERN GUAM RESERVOIR DESIGN SERVICES**

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA is currently working on critical reservoir projects under the 2011 Court Order (“CO”) Paragraph 29 – Storage Tank/Reservoir Repair, Replacement, and Relocation Program; and

WHEREAS, Resolution No. 20-FY2015 (See Exhibit A) authorized GWA management to enter into a contract with TG Engineers, P.C. in the amount of Two Million Five Hundred Thirty Two Thousand Five Hundred Eighty Dollars (\$2,532,580.00) to provide design services for the Northern and Southern Guam Reservoirs, which includes:

- (1) site investigations and system evaluations at Santa Rosa, Santa Rita, Sinifa, Inarajan, and Ugum reservoir sites, and
- (2) development of design plans and specifications for various sized concrete reservoirs ranging from 1.0 MG to 2.0 MG nominal capacities, instrumentation and control upgrades, control valves upgrades, pipe upgrades, new booster station, and other general site and system upgrades; and

WHEREAS, Resolution No. 20-FY2015 further authorized on top of the contract amount a ten percent (10%) contingency of Two Hundred Fifty Three Thousand Two Hundred Fifty Eight Dollars (\$253,258.00) bringing the total authorized funding to a maximum of Two

1 Million Seven Hundred Eighty Five Thousand Eight Hundred Thirty Eight Dollars
2 (\$2,785,838.00); and
3

4 **WHEREAS**, GWA issued Change Order No. 1 to TG Engineers, P.C. for additional
5 services that were required due to needs for land acquisition for various project sites using the
6 approved contingency funding in the amount of Fifty One Thousand Three Hundred Forty One
7 Dollars and Fifty Cents (\$51,341.50) in which the total value of the Contract was increased to
8 Two Million Five Hundred Eighty Three Thousand Nine Hundred Twenty One Dollars and
9 Fifty Cents (\$2,583,921.50); and
10

11 **WHEREAS**, in the course of the design and analysis of the reservoirs and the water
12 system served by the noted reservoirs additional design services listed below was identified as
13 being necessary to meet new building code requirement and to improve the functionality of the
14 water systems (See Exhibit B – Scope of Work and Fees):
15

- 16 (1) design for several additions and revisions to the pipe system to complete the pressure
17 zone realignment which includes surveying and environmental services for Santa Rita
18 and Santa Rosa Reservoirs,
- 19 (2) design for the new UFC structural code requirements for Ugum, Santa Rosa, Santa Rita
20 and Sinifa Reservoirs; and Inarajan Booster Pump Station,
- 21 (3) additional land acquisition support for the Government of Guam Chamorro Land Trust
22 Commission (CLTC) property, additional Archaeological and Unexploded Ordinance
23 (UXO) monitoring, and design to include the new GWA-AAFB tank interconnection
24 system for the Santa Rosa Reservoir,
- 25 (4) design for new Booster Pump Station and a new Pressure Reducing Valve (PRV) to be
26 added into the system in the vicinity of Agfayan Subdivision in Inarajan as part of the
27 pressure zone realignment plan,
- 28 (5) percolation tests to be included at each project site location for drainage basins,
- 29 (6) design to incorporate the Siemens controls from the existing Ugum plant to be extended
30 to the new Ugum Reservoir and facilities; and
31
32

1 **WHEREAS**, GWA engineering and TG Engineers, P.C. negotiated the price for the
2 services to be provided in the amount of Five Hundred Three Thousand One Hundred Ten
3 Dollars and Fifty Cents (\$503,110.50); and
4

5 **WHEREAS**, GWA Management is seeking CCU approval of additional funding in
6 the amount of Three Hundred One Thousand One Hundred Ninety Four Dollars (\$301,194.00)
7 which is the balance needed above the remaining contingency that will fund Change Order No.
8 2; and
9

10 **WHEREAS**, GWA Management further seeks CCU approval of the total authorized
11 funding for the design contract with TG Engineers, P.C. to Three Million Eighty Seven
12 Thousand Thirty Two Dollars (\$3,087,032.00); and
13

14 **WHEREAS**, funding for this project will be from 2013 and/or 2015 Bond Funds under
15 CIP line item PW 09-11 Water System Reservoirs 2005 Improvements; and
16

17 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
18 does hereby approve and authorize the following:
19

- 20 1. The recitals set forth above hereby constitute the findings of the CCU.
- 21 2. The CCU finds that the terms of the fee proposal submitted by TG
22 Engineers, P.C. are fair and reasonable.
- 23 3. The CCU finds that the terms of the conditions set by GWA relative to
24 commencement of subsequent work activities are fair and reasonable and
25 serve as a measure of Quality Assurance/Quality Control (QA/QC).
- 26 4. The CCU hereby authorizes GWA management to execute Change Order No.
27 2 in the amount of Five Hundred Three Thousand One Hundred Ten Dollars
28 and Fifty Cents (\$503,110.50) (Exhibit B).
- 29 5. The CCU further approves increasing the total authorized funding for the
30 design contract with TG Engineers, P.C to Three Million Eighty Seven
31 Thousand Thirty Two Dollars (\$3,087,032.00);
32

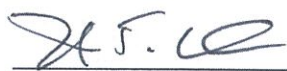
6. Funding source will be CIP PW 09-11 Water System Reservoir 2005 Improvements.

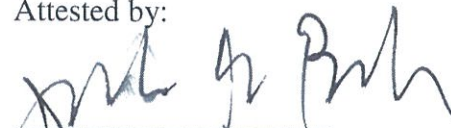
RESOLVED, that the Chairman certified and the Board Secretary attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED, this 23rd day of August, 2016.

Certified by:

Attested by:





JOSEPH T. DUENAS
Chairperson

J. GEORGE BAMBA
Secretary

I, J. George Bamba, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES:	<u>4</u>
NAYS:	<u>0</u>
ABSTENTIONS:	<u>0</u>
ABSENT:	<u>1</u>



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///

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TG ENGINEERS, PC

November 8, 2017

Mr. Miguel Bordallo, PE
General Manager
Guam Waterworks Authority
Gloria B. Nelson Public Service Building, Room 202
688 Route 15
Mangilao, Guam 96913

ATTN: Mr. Brett Railey, PE, Project Manager

**RE: PW 09-11 Northern and Southern Guam Reservoirs: GWA Project No. W14-007-BND,
Change Order No. 4 – Fee Proposal**

Hafa adai Brett,

TG Engineers, PC (TGE) is pleased to submit our updated Scope of Work and Fee Proposal for the reservoir project Change Order No. 4. We are submitting the proposal file in pdf format by email.

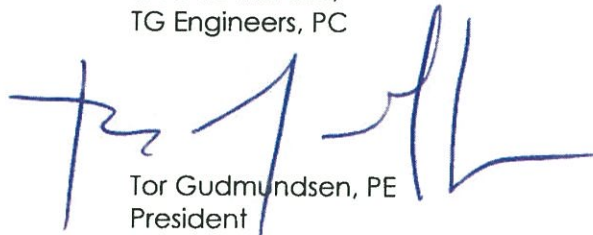
Note we have followed the format from the original project proposal and created the general part of the Scope of Work and then have Attachments A – H with the specific scope for each tank and pump station project.

Based on the last review meeting, held with you and Mr. Garrett Yeoh, we have updated the proposal accordingly. The new task which is added is the new road and utility infrastructure that will be required for the Agfayan 4-alternate sites that will be investigated.

We look forward to your favorable review and reaching an agreement on the Scope and Fee. Let us know if we will schedule a final review meeting.

Please call Teena Barnes or myself directly at 647-0808 with any questions.

Si Yu'os Ma'ase,
TG Engineers, PC

A handwritten signature in blue ink, appearing to read 'Tor Gudmundsen', is written over the typed name and title.

Tor Gudmundsen, PE
President

GWA SOW & FEE
11/8/2017

Attachments:

Scope of Work

Dated 11/08/17, 15-pages

Fee Proposal Spreadsheets

Dated 11/08/17, 9-pages

DESIGN OF NORTHERN AND SOUTHERN GUAM RESERVOIRS, PROJECT NO. 2
CHANGE ORDER NO. 4 – SCOPE OF WORK

1. INTRODUCTION

TG Engineers, PC (TGE) is under contract with the Guam Waterworks Authority (GWA) for the Design of Northern and Southern Guam Reservoirs. The work completed to date varies for each site and is listed as follows.

- Ugum – Basis of Design Report
- Santa Rita – 90% Design Submittal
- Santa Rosa – 100% Design Submittal (Dod Intertie at 60%)
- Sinifa – 90% Design Submittal
- Inarajan Reservoir – Cancelled
- Agfayan Booster Pump Station – New Facility
- Inarajan Booster Pump Station – BOD complete and pending the Agfayan BOD to combine projects

Change Orders 1.0 – 3.0 have been processed and include the following.

- Change Order No. 1 – processed for land acquisition support services. No schedule changes.
- Change Order No. 2 – processed for additional engineering services. Schedule extended 387-days to 4/14/2017.
- Change Order No. 3 – processed for a time extension. Schedule extended 630-days to 1/04/2019.

Change Order No. 4 is proposed with the Scope of Work as follows.

2. SCOPE OF SERVICES

2.1 GENERAL DESCRIPTION OF SERVICES

A. Project Management Services

Team members will join Bi-weekly progress meetings for the 21-month time extension, ending 1/04/2019.

B. Pressure Zone Re-alignment

The Brown & Caldwell Report, Pressure Zone Realignment and Pressure Improvement Report, June 2017 includes several additions and revisions to the pipe system to complete the pressure zone re-alignment within the project areas. The changes are described as follows.

B1 – Santa Rosa (note scope for Details 1 & 2 are included in CO#2)

- 1) Detail 4 - Install an 8-inch valve on the existing line approx. 500-ft NW of Chalan Bernadita and construct 1-jumper line to connect existing 8-inch lines at the Chalan

TG Engineers, PC

Bernadita / Route 9 intersection. The work is located in public ROW or utility easement areas.

- 2) Detail 5 – install an 8-inch valve on the existing 8-inch line along Route 9, near Chalan Bada.
- 3) Details 6 & 7 – Construct approx. 4,120-lf of 12-inch pipe along Route 1 in Yigo.

B2 – Agfayan BPS

- 1) Install 1-PRV at an appropriate site near the original 3-BPS site alternatives, as determined by the design team.

B3 – General

- 1) Team members have completed multiple reviews of the ongoing revisions by B&C to the PZR documents.

2.2 UGUM RESERVOIR SITE

Investigate a new alternative for the new reservoir location. The new alternative involves consolidating 2-lots adjacent and south of the existing plant to provide the site needed for the new reservoir and facilities. The 2-lots are Lot 3 & Lot 4, Block 4, Tract 3521.

2.3 UGUM EXISTING WATER TREATMENT PLANT & TANK

The existing plant site drainage will be corrected with a new design and plans.

2.4 SANTA ROSA RESERVOIR SITE – Dod Intertie

Easements were developed for use by GWA to reach operational agreements with Dod. There were 3-easement exhibits created as follows.

- Temporary Construction Easement
- GWA Access Easement
- Dod Access Easement

2.5 SANTA RITA RESERVOIR SITE

Review the access road flood damage and repair plans.

Confirm the road repair design interface with the road reconstruction plans

2.6 AGFAYAN BOOSTER PUMP STATION SITE

Investigate 4-lots as new alternatives for the new booster pump station location. The lots are along an existing Right-of-Way (ROW) and will require a new road, piping, electrical service and appurtenances. The estimated ROW length is 2,000-ft for the utility infrastructure required, this is approx. 1,000-ft of new road and utility infrastructure and another 1,000-ft of new pipeline in an existing paved road.

Refer to the following maps.

- LM Checked No. 086 FY92, sheet 1 of 3

TG Engineers, PC

- LM Checked No. 485 FY97, sheet 1 of 3

2.7 SINIFA RESERVOIR SITE

Provide Temporary Construction Easements and construction support documents on 2-lots as follows.

- Lot 2, Block 2, Tract 24404
- Lot 3, Block 2, Tract 24404

3 – 10. No change.

ATTACHMENTS:

- A. Ugum Reservoir Site
- B. Existing Ugum Water Plant Site Drainage
- C. Santa Rosa 2-PZR Sites
- D. Santa Rosa PZR Pipeline
- E. Sinifa Reservoir Site
- F. Agfayan BPS, 4-Alt Sites
- G. Project Management

Attachment A – Ugum Reservoir Site**A. Preliminary Design**

1. Define design objective, design criteria, and methodology that shall be used to prepare the design. Identify all relevant codes, standards, environmental regulations, and all applicable local and federal laws that will be incorporated in the design.
2. Create a draft Property Map and Concept Site Plan for analysis. Combine the mapping of the 2-new lots to develop the consolidated lot site. This will be consolidated with the existing plant site.
3. Complete an Abbreviated Appraisal Report for the preliminary property value.
4. Complete the Construction Cost Estimate based on the Concept Site Plan developed.
5. Update the BOD Report for the combined lot development plan.
6. Open discussions with the property owner about the proposed land use, access for investigations and the acquisition process.
7. Provide surveying services, consisting of property boundary and topographic field survey and preparation of topographical mapping. These services include preparation of topographical and boundary mapping of the tank site including existing facilities above ground within the project area and adjacent sites which may be impacted. The consultant shall make all necessary research for determination of land ownership.

The boundary survey and mapping scope will be expanded to include consolidation of the 2-new lots with the existing plant site. The topographic survey and mapping scope is expanded to include the 2nd parcel of the 2-new parcels.

8. Other services are included in the existing scope.

B. Design

1. Develop updated Basis of Design Report.

The updated Basis of Design Report at a minimum shall address the following:

- a. Site Geometry and Access
- b. Site Grading & Drainage
- c. Site Piping
- d. Site Utilities

Attachment B – Existing Ugum Water Plant Site Drainage

A. Preliminary Design

1. Define design objective, design criteria, and methodology that shall be used to prepare the design. Identify all relevant codes, standards, environmental regulations, and all applicable local and federal laws that will be incorporated in the design.
2. Provide surveying services, consisting of the topographic field survey and preparation of topographical mapping. These services include preparation of the topographical mapping of the plant site, including existing facilities above ground within the project area and adjacent sites which may be impacted.
3. Complete Concept Drainage system design. It is proposed to channel stormwater to a new basin or percolation facility on Lot 3, Block 4, Tract 3521.
4. Complete the Construction Cost Estimate based on the Concept Drainage Plan developed.

B. Design

1. Complete the Drainage Design and prep construction documents. The design will be developed through 30%, 60%, 90% and 100% design stages and submittals made for review and acceptance by GWA before continuing to the next submittal.
2. The Construction Document package will include the following at each design submittal

30% - Plans, Basis of Design and Draft Drainage Calculations

60% - Plans, Final Drainage Calculations, Specification TOC and Estimate.

90% - Plans, Specifications, Estimate and Construction Schedule.

100% - Plans, Specifications, Estimate and Construction Schedule.

Attachment C – Santa Rosa, 2-PZR Sites

A. Site List (2-sites)

1. Detail 4 - Install an 8-inch valve on the existing line approx. 500-ft NW of Chalan Bernadita and construct 1-jumper line to connect existing 8-inch lines at the Chalan Bernadita / Route 9 intersection. The work is located in public ROW or utility easement areas.
2. Detail 5 – install an 8-inch valve on the existing 8-inch line along Route 9, near Chalan Bada. The work is located in public ROW or utility easement areas.
3. Preliminary Design
 - a. Perform site investigation to determine existing condition and system configuration, in accordance with existing contract scope terms.
 - b. Provide surveying services, consisting of property boundary and topographic field survey and preparation of topographical mapping. These services include preparation of topographical and boundary mapping of the 2-facility sites including existing facilities above ground within the project area and adjacent sites which may be impacted. The consultant shall make all necessary research for determination of land ownership.
 - c. Provide environmental services to determine any adverse impact of the project on cultural resources and to make recommendations regarding their historical properties. This shall include a technical report, which defines background research, field methodology, results of survey and mitigation recommendations. The archaeological party will conduct cultural resource inventory and evaluation of historic resources that might be affected by this project. This will require preparing and submitting an inventory survey plan, conducting inventory survey, and reporting to the Department of Parks and Recreation/Guam Historic Preservation Office and all other required agencies (which may include Department of Agriculture, Guam Environmental Protection Agency, U.S. Fish and Wildlife Services, and etc.) regarding the project and recommendations as to eligibility and effect from the undertaking.

B. Design

1. Develop the Basis of Design Report.
 - a. Incorporate the UFC code and added facilities and issue an addendum to the BOD with the project design submittals.
2. Prepare construction drawings, specifications, cost estimates, construction schedule, supporting design calculations, list of required permits, and all other documents necessary for project construction.

TG Engineers, PC

3. Design Services:

a. Civil Engineering:

- i. Site work at each facility site shall include demolition plans, site layout plans, grading, drainage, erosion control measures, underground utility plans, utility profiles, vault plans and sections, details.

Attachment D – Santa Rosa PZR Pipeline

A. Site List (1-site)

1. Details 6 & 7 – Construct approx. 4,120-lf of 12-inch pipe along Route 1 in Yigo.
2. Preliminary Design
 - a. Perform site investigation to determine existing condition and system configuration, in accordance with existing contract scope terms.
 - b. Provide surveying services, consisting of property boundary and topographic field survey and preparation of topographical mapping. These services include preparation of topographical and boundary mapping of the pipe line alignment including existing facilities above ground within the project area and adjacent sites which may be impacted. The consultant shall make all necessary research for determination of land ownership.
 - c. Provide environmental services to determine any adverse impact of the project on cultural resources and to make recommendations regarding their historical properties. This shall include a technical report, which defines background research, field methodology, results of survey and mitigation recommendations. The archaeological party will conduct cultural resource inventory and evaluation of historic resources that might be affected by this project. This will require preparing and submitting an inventory survey plan, conducting inventory survey, and reporting to the Department of Parks and Recreation/Guam Historic Preservation Office and all other required agencies (which may include Department of Agriculture, Guam Environmental Protection Agency, U.S. Fish and Wildlife Services, and etc.) regarding the project and recommendations as to eligibility and effect from the undertaking.
3. Perform geotechnical investigations to assess the stability of the sub-grade and develop a soils report, including field exploration and laboratory tests and seismic investigations. The geotechnical investigations will assess the general conditions of the project site and provide design recommendations for the proposed pipeline and ancillary facilities including the following:
 - a. Characterization of earth materials and ground water level
 - b. Determination of bearing pressure and settlement
 - c. Lateral earth pressures – static and seismic
 - d. Assessment of liquefaction potential

B. Design

1. Develop Basis of Design Report.
2. Prepare construction drawings, specifications, cost estimates, construction schedule, supporting design calculations, list of required permits, and all other documents necessary for project construction.

3. Design Services:

a. Civil Engineering:

- i. The 4,120-lf pipeline will include demolition plans, plan and profiles, erosion control measures, underground utility plans, utility profiles, vault plans and sections, details.

Attachment E – Sinifa Reservoir Site

A. Preliminary Design

1. The TGE team will obtain Temporary Construction Easements (TCE) from the private property owners for construction access at the new tank site. The TCE exhibit sketches will be created and issued for the following lots.
 - Lot 2, Block 2, Tract 24404
 - Lot 3, Block 2, Tract 24404

B. Lewis Property

1. Create the TCE Exhibit Drawing
2. Create the Perpetual Easement Exhibit Drawing
3. Complete the engineering design for the new driveway including geometry, grading and drainage.
4. Complete construction documents with a cost estimate for comparison of alternatives.

C. Paulino Property

1. Create the TCE Exhibit Drawing
2. Complete the concept retaining wall design and cost estimate for comparison of alternatives.

Attachment F – Agfayan BPS 4-Site Alternatives Review

A. The 4-lots include the following.

- Lots 28 & 29, Subdivision Survey Map of TRACT 3734, Land for the Landless Project (Formerly Lot 8-3), LM Checked No. 086 FY92, sheet 1 of 3
- Lots 61-R2 and 106, Real Estate Requirement (Access Easement for Ija Subdivision) Lots 60, 61 and 64-1 thru 64-R11, LM Checked No. 485 FY97, sheet 1 of 3

B. Preliminary Design

1. Define design objective, design criteria, and methodology that shall be used to prepare the design. Identify all relevant codes, standards, environmental regulations, and all applicable local and federal laws that will be incorporated in the design.
2. Create 4-draft Property Maps and 4-Concept Site Plans for analysis.
3. Complete the 4-Abbreviated Appraisal Reports for the preliminary property values.
4. Complete the 4-Construction Cost Estimates based on the Concept Site Plans developed.
5. Update the BOD Report with the 4-alternative Site Plans.
6. Open discussions with the property owners about the proposed land use, access for investigations and the acquisition process.

C. Design

1. Develop updated Basis of Design Report.

The updated Basis of Design Report at the minimum shall address the following:

- a. Site Geometry
- b. Site Grading & Drainage
- c. Site Piping
- d. Site Utilities

Attachment G – Agfayan BPS 4-Site Alternatives-Road & Offsite Utilities

A. Description of Road & Offsite Utilities

The lots being considered are the following.

- Lots 28 & 29, Subdivision Survey Map of TRACT 3734, Land for the Landless Project (Formerly Lot 8-3), LM Checked No. 086 FY92, sheet 1 of 3
- Lots 61-R2 and 106, Real Estate Requirement (Access Easement for Ija Subdivision) Lots 60, 61 and 64-1 thru 64-R11, LM Checked No. 485 FY97, sheet 1 of 3

Based on reviews of the mapping, we understand the new infrastructure as follows.

Part 1 – Approx. 1,400-ft of new road through the jungle along an existing coral road / trail. This section will have new road construction and new water pipeline.

Part 2 – Approx 1,000-ft of existing paved roads through part of Inarajan Village. This section will have a new waterline constructed in the existing paved roads and connect to the waterline in Route 4 in the Inarajan Village area.

Part 3 – Approx 500-ft of existing paved road in the Ija Subdivision. This section will have a new waterline constructed and the existing OH power line extended to the pump station site.

B. Preliminary Design

1. Define design objective, design criteria, and methodology that shall be used to prepare the design. Identify all relevant codes, standards, environmental regulations, and all applicable local and federal laws that will be incorporated in the design.
1. Perform site investigation to determine existing condition and system configuration, consisting of the following:
 - a. Existing site conditions and facilities
 - b. Proposed site improvement
 - c. Preliminary site layout
 - d. Research existing property map
 - e. Demolition requirements
 - f. Grading requirements
 - g. Drainage requirements
 - h. Piping and valving requirements
 - i. Operational requirements
 - j. Fire flow requirements
 - k. Electrical power supply
 - l. Construction access
 - m. Construction sequencing

2. Provide surveying services, consisting of ROW boundary and topographic field survey and preparation of topographical mapping. These services include preparation of topographical and boundary mapping of the roads including existing facilities above ground within the project area and adjacent sites which may be impacted. The consultant shall make all necessary research for determination of land ownership.
3. Provide environmental services to determine any adverse impact of the project on cultural resources and to make recommendations regarding their historical properties. This shall include a technical report, which defines background research, field methodology, results of survey and mitigation recommendations. The archaeological party will conduct cultural resource inventory and evaluation of historic resources that might be affected by this project. This will require preparing and submitting an inventory survey plan, conducting inventory survey, and reporting to the Department of Parks and Recreation/Guam Historic Preservation Office and all other required agencies (which may include Department of Agriculture, Guam Environmental Protection Agency, U.S. Fish and Wildlife Services, and etc.) regarding the project and recommendations as to eligibility and effect from the undertaking.
4. Perform geotechnical investigations to assess the stability of the sub-grade and develop a soils report, including field exploration and laboratory tests, corrosion, and seismic investigations. The geotechnical investigations will assess the general conditions of the project site and provide design recommendations for the proposed pump station and ancillary facilities including the following:
 - a. Characterization of earth materials and ground water level
 - b. Development of seismic design criteria for the pump station building per updated codes
 - c. Determination of bearing pressure and settlement
 - d. Lateral earth pressures – static and seismic
 - e. Assessment of liquefaction potential
 - f. Foundation design of the proposed pump station building and ancillary structures
 - g. Earthwork requirements

C. Design

1. Develop updated Basis of Design Report.

The updated Basis of Design Report at the minimum shall address the following:

- a. Site Geometry
- b. Site Grading & Drainage
- c. Site Piping
- d. Site Utilities

2. Prepare construction drawings, specifications, cost estimates, construction schedule, supporting design calculations, list of required permits, and all other documents necessary for project construction.
 - a. The design plans for the offsite road and utility infrastructure will include the necessary piping, valving, fittings, and appurtenances to connect to the existing water system as indicated in the Basis of Design Report. The plan will also include necessary erosion control measures such as erosion control seeding, silt fencing, protection of stockpiled materials, and other necessary measures to mitigate the impact of erosion and sedimentation.
 - b. Based on the Basis of Design report approved by GWA, the design consultant will prepare and submit the following:
 1. Multidiscipline plans to the 60%, 90%, and 100% completion levels. (60% will consist of an Over-the-Shoulder review with GWA.)
 2. Specifications at 60%, 90%, and 100% completion levels, which will include front end documents and technical specifications applicable to the indicated completion levels.
 3. Construction cost estimate update at 60% Completion level. This estimate will be a Class 3 estimate in accordance with the AACE International Cost Estimate Classification System. All costs will be in current dollars and escalated to the estimated midpoint of construction.
 4. Final construction cost estimate based on quantity takeoffs and the requirements of the 100% design plans and specifications. This estimate will be a Class 2 estimate in accordance with the AACE International Cost Estimate Classification System. All costs will be in current dollars and escalated to the estimated midpoint of construction.
 5. The design consultant shall coordinate with the relevant agencies such as Guam Environmental Protection Agency, Department of Public Works, and other relevant agencies at the 30%, 60%, 90%, and 100% submittals. This includes submitting design documents (full size plans and specifications at each phase) and maintaining communication throughout the duration of the project and incorporating any relevant regulation requirements in the design.
3. Design Services:
 - a. Civil Engineering:
 - i. Site work for the road and utility infrastructure shall include demolition plans, site layout plans, grading, paving, fencing, drainage, erosion control measures, retaining walls, underground utility plans, utility profiles, vault plans and sections, details. Demolition plans will be provided as required.
 - b. Electrical Power/Lighting Engineering:
 - i. Electrical standard details, one-line diagrams, electrical site plans, lighting plans and details

Attachment H – Project Management

- A. Project Management – prep and complete bi-weekly Progress Meetings for 21-months.
 - 1. Issue meeting minutes with ACTION items listed within 5-working days after the meeting and work to resolve any ACTION items prior to the next meeting.
 - 2. The meeting minutes will be expanded to include any new items at the beginning of each meeting.

- B. GWA - B&C PZR Report Reviews
 - 1. TGE has completed multiple reviews and provided comments on the B&C PZR report relative to the project site areas.

A UGUM RESERVOIR SITE		TOTAL
Engineering Services	\$	18,890.00
Survey Services	\$	16,715.00
Subconsultants	\$	8,021.00
Direct Expenses	\$	267.25
TOTAL - UGUM RESERVOIR SITE		\$ 43,893.25

B EXISTING UGUM WATER PLANT SITE DRAINAGE		TOTAL
Engineering Services	\$	21,100.00
Survey Services	\$	14,775.00
Subconsultants	\$	4,011.00
Direct Expenses	\$	559.50
TOTAL - EXISTING UGUM WATER PLANT SITE DRAINAGE		\$ 40,445.50

C SANTA ROSA 2-PZR SITES		TOTAL
Engineering Services	\$	18,660.00
Survey Services	\$	12,005.00
Subconsultants	\$	8,594.00
Direct Expenses	\$	245.00
TOTAL - SANTA ROSA 2-PZR SITES		\$ 39,504.00

D SANTA ROSA PZR PIPELINE		TOTAL
Engineering Services	\$	29,655.00
Survey Services	\$	20,000.00
Subconsultants	\$	18,907.00
Engineering Services	\$	573.00
TOTAL - SANTA ROSA PZR PIPELINE		\$ 69,135.00

E SINIFA RESERVOIR SITE		TOTAL
Engineering Services	\$	6,745.00
Survey Services	\$	4,635.00
Subconsultants	\$	-
Direct Expenses	\$	101.50
TOTAL - SINIFA RESERVOIR SITE		\$ 11,481.50

F AGFAYAN BPS 4-ALTERNATIVE SITE REVIEW		TOTAL
Engineering Services	\$	25,960.00
Survey Services	\$	21,900.00
Subconsultants	\$	29,793.00
Direct Expenses	\$	531.00
TOTAL - AGFAYAN BPS 4-ALTERNATIVE SITE REVIEW		\$ 78,184.00

G AGFAYAN BPS 4-ALTERNATIVE SITES ROAD		TOTAL
Engineering Services	\$	66,645.00
Survey Services	\$	33,585.00
Subconsultants	\$	40,105.00
Direct Expenses	\$	1,641.00
TOTAL - AGFAYAN BPS 4-ALTERNATIVE SITES ROAD		\$ 141,976.00

H PROJECT MANAGEMENT		TOTAL
Engineering Services	\$	88,990.00
Survey Services	\$	-
Subconsultants	\$	24,063.00
Direct Expenses	\$	208.00
TOTAL - PROJECT MANAGEMENT		\$ 113,261.00

TOTAL FEE - CHANGE ORDER NO. 4	\$	537,880.25
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DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Stf Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST
ENGINEERING SERVICES									
A./B. Site List/Preliminary Design									
1. Coordinate Property Boundary & Topographic Survey Maps		1.0		5.0					
2. Develop Concept Site Plan		1.0		8.0		8.0	32.0		
3. Coordinate Abbreviated Appraisal Report		4.0							
4. Develop Construction Cost Estimate		2.0		2.0					
5. Open Discussions with Landowner		2.0				16.0			
C. Design									
1. Develop Basis of Design Report		2.0	5.0	20.0		20.0	40.0		
Subtotal Hours	0.0	12.0	5.0	35.0	0.0	44.0	72.0	0.0	
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00	
Subtotal Direct Labor	\$0.00	\$2,040.00	\$825.00	\$4,725.00	\$0.00	\$3,740.00	\$7,560.00	\$0.00	\$18,890.00

DESIGN TASK	PLS	Survey Tech	Field Crew	CAD	TOTAL COST
SURVEY SERVICES					
1.0 Site Surveys					
Property Research	1.0	5.0			
Control Survey	1.0		8.0		
Boundary Survey	1.0		24.0	20.0	
Consolidation 3-lots	1.0		8.0	16.0	
Topographic Survey & Map	2.0		24.0	40.0	
2.0 Land Acquisition					
Subtotal Hours	6.0	5.0	64.0	76.0	0.0
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00
Subtotal Direct Labor	\$870.00	\$425.00	\$8,960.00	\$6,460.00	\$0.00

SUBCONSULTANTS				TOTAL COST
Subconsultant	Total Fee	% This Task	Task Fee	
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00	0%	\$0.00	
2.0 Wixon & Associates, LLC (Electrical)	\$0.00	0%	\$0.00	
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$0.00	0%	\$0.00	
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$0.00	0%	\$0.00	
5.0 PCR Environmental, LLC (Environmental)	\$0.00	0%	\$0.00	
6.0 Rider Levett Bucknall (Cost Estimating)	\$3,500.00	100%	\$3,500.00	
7.0 Cornerstone Valuation Guam, Inc. (Appraisal)	\$3,500.00	100%	\$3,500.00	
Subtotal - Subconsultants			\$7,000.00	
TGE Sub Admin Fee (10%)			\$700.00	
GRT (4.17%)			\$321.00	\$8,021.00

DIRECT EXPENSES						TOTAL COST
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal	
Drawings (Full Size - 24x36)				\$1.00	\$0.00	
Drawings (Tabloid Size - 11x17)	25	5	125	\$0.50	\$62.50	
Documents (Letter Size - 8.5x11)	25	5	125	\$0.15	\$18.75	
CD				\$1.00	\$0.00	
Subtotal - Reproduction					\$81.25	
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal		
Survey Field Crews	7	1	\$25.00	\$175.00		
3.0 Miscellaneous	0	0	\$0.00	\$0.00		
Subtotal - Task A Direct Expenses					\$256.25	
GRT (4.17%)					\$11.00	\$267.25

TOTAL - UGUM RESERVOIR SITE \$43,893.25

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Stf Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST
ENGINEERING SERVICES									
A./B. Site List/Preliminary Design									
1. Review TGE Drainage Report			1.0	2.0					
2. Site Review				16.0		16.0			
3. Drainage Concept Development - Submittal - Approval		2.0	5.0	16.0					
4. Drainage System Cost Estimate									
C. Design									
1. Drainage Design with PS&E (90% / 100%)		2.0	16.0	24.0		40.0	40.0		
Subtotal Hours	0.0	4.0	22.0	58.0	0.0	56.0	40.0	0.0	
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00	
Subtotal Direct Labor	\$0.00	\$680.00	\$3,630.00	\$7,830.00	\$0.00	\$4,760.00	\$4,200.00	\$0.00	\$21,100.00

DESIGN TASK	PLS	Survey Tech	Field Crew	CAD	TOTAL COST
SURVEY SERVICES					
1.0 Site Surveys					
Property Research	1.0	5.0			
Control Survey			8.0		
Boundary Survey			16.0	20.0	
Topographic Survey & Map	1.0		40.0	40.0	
2.0 Land Acquisition					
Subtotal Hours	2.0	5.0	64.0	60.0	0.0
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00
Subtotal Direct Labor	\$290.00	\$425.00	\$8,960.00	\$5,100.00	\$0.00
					\$14,775.00

SUBCONSULTANTS				TOTAL COST
Subconsultant	Total Fee	% This Task	Task Fee	
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00	0%	\$0.00	
2.0 Wixon & Associates, LLC (Electrical)	\$0.00	0%	\$0.00	
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$0.00	0%	\$0.00	
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$0.00	0%	\$0.00	
5.0 PCR Environmental, LLC (Environmental)	\$0.00	0%	\$0.00	
6.0 Rider Levett Bucknall (Cost Estimating)	\$3,500.00	100%	\$3,500.00	
7.0 Cornerstone Valuation Guam, Inc. (Appraisal)	\$0.00	0%	\$0.00	
Subtotal - Subconsultants			\$3,500.00	
TGE Sub Admin Fee (10%)			\$350.00	
GRT (4.17%)			\$161.00	\$4,011.00

DIRECT EXPENSES							TOTAL COST
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal		
Drawings (Full Size - 24x36)				\$1.00	\$0.00		
Drawings (Tabloid Size - 11x17)	15	15	225	\$0.50	\$112.50		
Documents (Letter Size - 8.5x11)	100	15	1500	\$0.15	\$225.00		
CD				\$1.00	\$0.00		
Subtotal - Reproduction					\$337.50		
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal			
Survey Field Crews	8	1	\$25.00	\$200.00			
3.0 Miscellaneous							
	0	0	\$0.00	\$0.00			
Subtotal - Task A Direct Expenses					\$537.50		
GRT (4.17%)					\$22.00		\$559.50

TOTAL - EXISTING UGUM WATER PLANT SITE DRAINAGE \$40,445.50

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Stt Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST
ENGINEERING SERVICES									
A./B. Site List/Preliminary Design									
1. Detail 4 - Install 8-inch Valve		1.0		1.0		2.0			
2. Detail 4 - Construct 1-Jumper				1.0		3.0			
3. Detail 5 - Install 8-inch Valve		1.0		1.0		3.0			
C. Design									
1. Develop Basis of Design Report		1.0		5.0					
2. Prepare construction drawings, specifications, cost estimates, construction schedule, supporting design calculations, list of required permits, etc.		1.0		40.0		40.0	40.0		
3. Design Services									
a. Civil Engineering		1.0		10.0		20.0			
Subtotal Hours	0.0	5.0	0.0	58.0	0.0	68.0	40.0	0.0	
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00	
Subtotal Direct Labor	\$0.00	\$850.00	\$0.00	\$7,830.00	\$0.00	\$5,780.00	\$4,200.00	\$0.00	\$18,660.00
SURVEY SERVICES									
1.0 Site Surveys									
Property Research		5.0							
Control Survey			24.0						
Boundary Survey			16.0	20.0					
Topographic Survey & Map			16.0	24.0					
2.0 Land Acquisition									
Subtotal Hours	0.0	5.0	56.0	44.0	0.0	0.0	0.0	0.0	
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00	\$0.00	\$0.00	\$0.00	
Subtotal Direct Labor	\$0.00	\$425.00	\$7,840.00	\$3,740.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12,005.00
SUBCONSULTANTS									
Subconsultant	Total Fee	% This Task	Task Fee						
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00	0%	\$0.00						
2.0 Wixon & Associates, LLC (Electrical)	\$0.00	0%	\$0.00						
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$5,000.00	100%	\$5,000.00						
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$0.00	0%	\$0.00						
5.0 PCR Environmental, LLC (Environmental)	\$0.00	0%	\$0.00						
6.0 Rider Levett Bucknall (Cost Estimating)	\$2,500.00	100%	\$2,500.00						
7.0 Cornerstone Valuation Guam, Inc. (Appraisal)	\$0.00	0%	\$0.00						
Subtotal - Subconsultants			\$7,500.00						
TGE Sub Admin Fee (10%)			\$750.00						
GRT (4.17%)			\$344.00						
				\$8,594.00					
DIRECT EXPENSES									
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal				
Drawings (Full Size - 24x36)				\$1.00	\$0.00				
Drawings (Tabloid Size - 11x17)	5	15	75	\$0.50	\$37.50				
Documents (Letter Size - 8.5x11)	10	15	150	\$0.15	\$22.50				
CD				\$1.00	\$0.00				
Subtotal - Reproduction					\$60.00				
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal					
Survey Field Crews	7	1	\$25.00	\$175.00					
3.0 Miscellaneous	0	0	\$0.00	\$0.00					
Subtotal - Task A Direct Expenses				\$235.00					
GRT (4.17%)				\$10.00					
					\$245.00				
TOTAL - SANTA ROSA 2-PZR SITES								\$39,504.00	

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Sif Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST
ENGINEERING SERVICES									
A./B. Site List/Preliminary Design									
4. Detail 6 & 7 - Install 4,120lf of 12-inch pipe, Rt 1 in Yigo		1.0	5.0	5.0		10.0	20.0		
C. Design									
1. Develop Basis of Design Report			2.0	5.0					
2. Prepare construction drawings, specifications, cost estimates, construction schedule, supporting design calculations, list of required permits, etc.		2.0		50.0		50.0	50.0		
3. Design Services									
a. Civil Engineering		2.0		40.0		20.0			
Subtotal Hours	0.0	5.0	7.0	100.0	0.0	80.0	70.0	0.0	
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00	
Subtotal Direct Labor	\$0.00	\$850.00	\$1,155.00	\$13,500.00	\$0.00	\$6,800.00	\$7,350.00	\$0.00	\$29,655.00
DESIGN TASK	PLS	Survey Tech	Field Crew	CAD	TOTAL COST				
SURVEY SERVICES									
1.0 Site Surveys									
Property Research		24.0							
Control Survey			24.0						
Boundary Survey			40.0	20.0					
Topographic Survey & Map			40.0	20.0					
2.0 Land Acquisition									
Subtotal Hours	0.0	24.0	104.0	40.0	0.0	0.0	0.0	0.0	
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00	\$0.00	\$0.00	\$0.00	
Subtotal Direct Labor	\$0.00	\$2,040.00	\$14,560.00	\$3,400.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20,000.00
SUBCONSULTANTS									
Subconsultant	Total Fee	% This Task	Task Fee						
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00	0%	\$0.00						
2.0 Wixon & Associates, LLC (Electrical)	\$0.00	0%	\$0.00						
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$5,500.00	100%	\$5,500.00						
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$6,500.00	100%	\$6,500.00						
5.0 PCR Environmental, LLC (Environmental)	\$0.00	0%	\$0.00						
6.0 Rider Levett Bucknall (Cost Estimating)	\$4,500.00	100%	\$4,500.00						
7.0 Cornerstone Valuation Guam, Inc. (Appraisal)	\$0.00	0%	\$0.00						
Subtotal - Subconsultants					\$16,500.00				
TGE Sub Admin Fee (10%)					\$1,650.00				
GRT (4.17%)					\$757.00				
					\$18,907.00				
DIRECT EXPENSES									
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal				
Drawings (Full Size - 24x36)				\$1.00	\$0.00				
Drawings (Tabloid Size - 11x17)	15	15	225	\$0.50	\$112.50				
Documents (Letter Size - 8.5x11)	50	15	750	\$0.15	\$112.50				
CD				\$1.00	\$0.00				
Subtotal - Reproduction					\$225.00				
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal					
Survey Field Crews	13	1	\$25.00	\$325.00					
3.0 Miscellaneous	0	0	\$0.00	\$0.00					
Subtotal - Task A Direct Expenses					\$550.00				
GRT (4.17%)					\$23.00				
					\$573.00				
TOTAL - SANTA ROSA PZR PIPELINE								\$69,135.00	

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Stf Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST
ENGINEERING SERVICES									
A./B. Site List/Preliminary Design									
Lot 2, Block 2, Tract 24404									
1. Owner Negotiations		1.0		1.0					
2. D/W Design				5.0			10.0		
3. Cost Estimate / Alternative Comparisons		1.0		2.0		10.0			
4. TCE Exhibit Sketch				1.0		2.0	5.0		
5. Perpetual Easement Exhibit Sketch		1.0		1.0		2.0	5.0		
Lot 3, Block 2, Tract 24404									
1. Cost Estimate / Alternative Comparisons		1.0		2.0		10.0			
2. TCE Exhibit Sketch				1.0		2.0			
Subtotal Hours	0.0	4.0	0.0	13.0	0.0	26.0	20.0	0.0	
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00	
Subtotal Direct Labor	\$0.00	\$680.00	\$0.00	\$1,755.00	\$0.00	\$2,210.00	\$2,100.00	\$0.00	\$6,745.00
SURVEY SERVICES									
1.0 Site Surveys	PLS	Survey Tech	Field Crew	CAD					TOTAL COST
Property Research		5.0							
Control Survey			8.0						
Boundary Survey		1.0	8.0	4.0					
Topographic Survey & Map		1.0	8.0	4.0					
2.0 Land Acquisition									
Subtotal Hours	0.0	7.0	24.0	8.0	0.0	0.0	0.0	0.0	
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00	\$0.00	\$0.00	\$0.00	
Subtotal Direct Labor	\$0.00	\$595.00	\$3,360.00	\$680.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,635.00
SUBCONSULTANTS									
Subconsultant	Total Fee		% This Task		Task Fee				
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00		0%		\$0.00				
2.0 Wixon & Associates, LLC (Electrical)	\$0.00		0%		\$0.00				
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$0.00		0%		\$0.00				
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$0.00		0%		\$0.00				
5.0 PCR Environmental, LLC (Environmental)	\$0.00		0%		\$0.00				
6.0 Rider Levett Bucknall (Cost Estimating)	\$0.00		0%		\$0.00				
7.0 Cornerstone Valuation Guam, Inc. (Appraisal)	\$0.00		0%		\$0.00				
Subtotal - Subconsultants						\$0.00			
TGE Sub Admin Fee (10%)						\$0.00			
GRT (4.17%)						\$0.00			
							\$0.00		
DIRECT EXPENSES									
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal				
Drawings (Full Size - 24x36)				\$1.00	\$0.00				
Drawings (Tabloid Size - 11x17)	3	10	30	\$0.50	\$15.00				
Documents (Letter Size - 8.5x11)	5	10	50	\$0.15	\$7.50				
CD				\$1.00	\$0.00				
Subtotal - Reproduction					\$22.50				
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal					
Survey Field Crews	3	1	\$25.00	\$75.00					
3.0 Miscellaneous	0	0	\$0.00	\$0.00					
Subtotal - Task A Direct Expenses				\$97.50					
GRT (4.17%)				\$4.00					
					\$101.50				
TOTAL - SINIFA RESERVOIR SITE							\$11,481.50		

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Sr Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST	
ENGINEERING SERVICES										
A./B. Site List/Preliminary Design										
1. Coordinate Property Boundary & Topographic Survey Maps (4-lots)			2.0			10.0	16.0			
2. Develop Concept Site Plans (4-lots)		2.0		8.0		40.0	40.0			
3. Develop Road and Utility Service Concepts / Cost Estimate		1.0		8.0		10.0	10.0			
3. Coordinate Abbreviated Appraisal Report (4-lots)		5.0								
4. Develop Construction Cost Estimate (4-lots)		4.0				4.0				
5. Open Discussions with Landowners		4.0				8.0				
6. Install PRV				2.0		5.0	2.0			
C. Design										
1. Develop Basis of Design Report			2.0	20.0		10.0	5.0			
2. PRV Construction Documents		2.0		5.0		10.0	5.0			
Subtotal Hours	0.0	18.0	4.0	43.0	0.0	97.0	78.0	0.0		
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00		
Subtotal Direct Labor	\$0.00	\$3,060.00	\$660.00	\$5,805.00	\$0.00	\$8,245.00	\$8,190.00	\$0.00	\$25,960.00	
DESIGN TASK	PLS	Survey Tech	Field Crew	CAD						TOTAL COST
SURVEY SERVICES										
1.0 Site Surveys										
Property Research		20.0								
Control Survey			40.0							
Boundary Survey			40.0	20.0						
Topographic Survey & Map			40.0	20.0						
2.0 Land Acquisition										
Subtotal Hours	0.0	20.0	120.0	40.0	0.0	0.0	0.0	0.0		
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00	\$0.00	\$0.00	\$0.00		
Subtotal Direct Labor	\$0.00	\$1,700.00	\$16,800.00	\$3,400.00	\$0.00	\$0.00	\$0.00	\$0.00	\$21,900.00	
SUBCONSULTANTS										
Subconsultant	Total Fee		% This Task		Task Fee					
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00		0%		\$0.00					
2.0 Wixon & Associates, LLC (Electrical)	\$0.00		0%		\$0.00					
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$0.00		0%		\$0.00					
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$0.00		0%		\$0.00					
5.0 PCR Environmental, LLC (Environmental)	\$0.00		0%		\$0.00					
6.0 Rider Levett Bucknall (Cost Estimating)	\$14,000.00		100%		\$14,000.00					
7.0 Cornerstone Valuation Guam, Inc. (Appraisal)	\$12,000.00		100%		\$12,000.00					
Subtotal - Subconsultants					\$26,000.00					
TGE Sub Admin Fee (10%)					\$2,600.00					
GRT (4.17%)					\$1,193.00					
										\$29,793.00
DIRECT EXPENSES										
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal					
Drawings (Full Size - 24x36)				\$1.00	\$0.00					
Drawings (Tabloid Size - 11x17)	12	10	120	\$0.50	\$60.00					
Documents (Letter Size - 8.5x11)	50	10	500	\$0.15	\$75.00					
CD				\$1.00	\$0.00					
Subtotal - Reproduction					\$135.00					
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal						
Survey Field Crews	15	1	\$25.00	\$375.00						
3.0 Miscellaneous	0	0	\$0.00	\$0.00						
Subtotal - Task A Direct Expenses				\$510.00						
GRT (4.17%)				\$21.00						
										\$531.00
TOTAL - AGFAYAN BPS 4- ALTERNATIVE SITE REVIEW										\$78,184.00

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Stf Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST
ENGINEERING SERVICES									
A./B. Site List/Preliminary Design									
1. Coordinate Property Boundary & Topographic Survey Maps (4-lots)			4.0					4.0	
2. Develop 2,000-ft Road and Utility Service Concepts / Cost Estimate			2.0		4.0			24.0	24.0
3. Coordinate Geotechnical Investigation			4.0					4.0	
4. Develop 2,900-lf Road & Utility Concepts			1.0		10.0			10.0	40.0
C. Design									
1. Develop Basis of Design Report					4.0		10.0		5.0
2. Road Engineering & Plans		4.0			20.0			40.0	40.0
3. Water line Engineering & Plans		2.0			40.0			60.0	40.0
4. Coordinate OH Power Engineering & Plans		4.0			10.0				5.0
5. Develop Technical Specifications					10.0			20.0	
6. Develop Cost Estimate & Schedules					5.0			20.0	
7. Design & 60%, 90% and 100% Submittals									
Subtotal Hours	0.0	33.0	0.0	127.0	0.0	252.0	214.0	0.0	
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00	
Subtotal Direct Labor	\$0.00	\$5,610.00	\$0.00	\$17,145.00	\$0.00	\$21,420.00	\$22,470.00	\$0.00	\$66,645.00

DESIGN TASK	PLS	Survey Tech	Field Crew	CAD	TOTAL COST
SURVEY SERVICES					
1.0 Site Surveys					
Property Research		40.0			
Control Survey		5.0	24.0	10.0	
Boundary Survey		10.0	60.0	10.0	
Topographic Survey & Map		10.0	80.0	40.0	
2.0 Land Acquisition					
Subtotal Hours	0.0	65.0	164.0	60.0	0.0
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00
Subtotal Direct Labor	\$0.00	\$5,525.00	\$22,960.00	\$5,100.00	\$0.00

Subconsultant	Total Fee	% This Task	Task Fee	TOTAL COST
SUBCONSULTANTS				
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$0.00	0%	\$0.00	
2.0 Wixon & Associates, LLC (Electrical)	\$8,000.00	100%	\$8,000.00	
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$12,500.00	100%	\$12,500.00	
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$10,000.00	100%	\$10,000.00	
5.0 PCR Environmental, LLC (Environmental)	\$0.00	0%	\$0.00	
6.0 Rider Levett Bucknall (Cost Estimating)	\$4,500.00	100%	\$4,500.00	
7.0 Comerstone Valuation Guam, Inc. (Appraisal)	\$0.00	100%	\$0.00	
Subtotal - Subconsultants			\$35,000.00	
TGE Sub Admin Fee (10%)			\$3,500.00	
GRT (4.17%)			\$1,605.00	\$40,105.00

Direct Expenses	Sheets	Sets	Total Pages	Unit Cost	Subtotal	TOTAL COST
DIRECT EXPENSES						
1.0 Reproduction						
Drawings (Full Size - 24x36)	50	5	250	\$1.00	\$250.00	
Drawings (Tabloid Size - 11x17)	50	15	750	\$0.50	\$375.00	
Documents (Letter Size - 8.5x11)	200	15	3000	\$0.15	\$450.00	
CD				\$1.00	\$0.00	
Subtotal - Reproduction					\$1,075.00	
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal		
Survey Field Crews	20	1	\$25.00	\$500.00		
3.0 Miscellaneous	0	0	\$0.00	\$0.00		
Subtotal - Task A Direct Expenses				\$1,575.00		
GRT (4.17%)				\$66.00		\$1,641.00

TOTAL - AGFAYAN BPS 4 ALTERNATIVE SITE REVIEW **\$141,976.00**

DESIGN TASK	Principal	Project Mgr	Sr Civil Engr II	Sr Civil Engr I	Sr Civil Engr	Jr Civil Engr	CAD	Clerical	TOTAL COST	
ENGINEERING SERVICES										
Project Management										
1.0 Prep / Attend Bi-weekly Meetings / Webex (21-mos)	24.0	168.0	168.0			168.0	60.0	60.0		
2.0 Review B&C PZR Report / Provide Comments		20.0	10.0							
Subtotal Hours	24.0	188.0	178.0	0.0	0.0	168.0	60.0	60.0		
Hourly Rate	\$175.00	\$170.00	\$165.00	\$135.00	\$105.00	\$85.00	\$105.00	\$48.00		
Subtotal Direct Labor	\$4,200.00	\$31,960.00	\$29,370.00	\$0.00	\$0.00	\$14,280.00	\$6,300.00	\$2,880.00	\$88,990.00	
DESIGN TASK	PLS	Survey Tech	Field Crew	CAD						TOTAL COST
SURVEY SERVICES										
1.0 Site Surveys										
Property Research										
Control Survey										
Boundary Survey										
Topographic Survey & Map										
2.0 Land Acquisition										
Subtotal Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Hourly Rate	\$145.00	\$85.00	\$140.00	\$85.00	\$0.00	\$0.00	\$0.00	\$0.00		
Subtotal Direct Labor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
SUBCONSULTANTS										
Subconsultant	Total Fee	% This Task	Task Fee							
1.0 RBF Consulting (Reservoir Design/Structural/Piping/Hydraulics/Modeling)	\$21,000.00	100%	\$21,000.00							
2.0 Wixon & Associates, LLC (Electrical)	\$0.00	0%	\$0.00							
3.0 Southeastern Archaeological Research, Inc. (Archaeological)	\$0.00	0%	\$0.00							
4.0 Geo-Engineering & Testing, Inc. (Geotechnical)	\$0.00	0%	\$0.00							
5.0 PCR Environmental, LLC (Environmental)	\$0.00	0%	\$0.00							
6.0 Rider Levett Bucknall (Cost Estimating)	\$0.00	0%	\$0.00							
7.0 Comerstone Valuation Guam, Inc. (Appraisal)	\$0.00	0%	\$0.00							
Subtotal - Subconsultants			\$21,000.00							
TGE Sub Admin Fee (10%)			\$2,100.00							
GRT (4.17%)			\$963.00							
			\$24,063.00							
DIRECT EXPENSES										
1.0 Reproduction	Sheets	Sets	Total Pages	Unit Cost	Subtotal					
Drawings (Full Size - 24x36)				\$1.00	\$0.00					
Drawings (Tabloid Size - 11x17)	5	50	250	\$0.50	\$125.00					
Documents (Letter Size - 8.5x11)	5	100	500	\$0.15	\$75.00					
CD				\$1.00	\$0.00					
Subtotal - Reproduction					\$200.00					
2.0 Vehicles/Fuel	Days	Crews	Rate	Subtotal						
Survey Field Crews	0	1	\$25.00	\$0.00						
3.0 Miscellaneous				\$0.00	\$0.00					
Subtotal - Task A Direct Expenses				\$200.00						
GRT (4.17%)				\$8.00						
				\$208.00						
TOTAL PROJECT MANAGEMENT								\$113,261.00		