This is **EXHIBIT H**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated October 5, 2022.

Dispute Resolution

Paragraph 6.09 of the Agreement is supplemented to include the following agreement of the parties:

H6.09 Mediation, Decision and Action

A. In the event a claim or controversy is not resolved by mutual agreement, the GWA General Manager shall, after written request by the Contractor for a final decision, promptly issue a written decision. A copy of the decision shall be immediately transmitted to the Contractor by a method that provides evidence of receipt.

B. All claims or controversies that remain unresolved after a final decision by the GWA General Manager shall be submitted to mediation in accordance with the rules of the American Arbitration Association, or other dispute resolution rules accredited on Guam. This agreement to mediate is authorized under 5 GCA §5427 (b) and 2 GAR §9103 (a)(1). The parties shall each pay one-half of the mediation expenses.

C. In the event mediation is not successful, the General Manager's decision remains final and conclusive unless the Contractor files an appeal with the Guam Office of Public Accountability ("OPA") after receipt of the decision. Upon written request by the Contractor, the 60-day appeal period may be extended for a mutually agreed upon tolling period to allow for mediation after the final decision. In the event the dispute is not resolved by the OPA, the Contractor may seek redress through the Guam Government Claims Act and/or the Guam Superior Court.

This is **EXHIBIT I**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated October 5, 2022.

Limitations of Liability

Paragraph 6.11 of the Agreement is supplemented to include the following agreement of the parties:

A. *Limitation of Engineer's Liability*

1. *Engineer's Liability Limited to Stated Amount, or Amount of Engineer's Compensation:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all injuries, claims, losses, expenses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project, Engineer's or its Consultants' services. or this Agreement, from any cause or causes whatsoever, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants, shall not exceed the total amount of $4,000,000.00 or the total compensation received by Engineer under this Agreement, whichever is greater. Higher limits are available for an additional fee.

2. *Exclusion of Special, Incidental, Indirect, and Consequential Damages:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision in the Agreement, consistent with the terms of Paragraph 6.11, the Engineer and Engineer's officers, directors, members, partners, agents, Consultants, and employees shall not be liable to Owner or anyone claiming by, through, or under Owner for any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes, including but not limited to:

B. *Indemnification by Owner*: To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to the Project, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Owner or Owner's officers, directors, members, partners, agents, employees, consultants, or others retained by or under contract to the Owner with respect to this Agreement or to the Project.

EXHIBIT J has been DELETED.

This is **EXHIBIT K**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated October 5, 2022.

AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. 00

The Effective Date of this Amendment is: _____.

Background Data

Owner: Guam Waterworks Authority

Engineer:

Project: Fujita Sewage Pump Station Redundant Force Main
GWA Project No. S20-003-EPA

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

____ Additional Services to be performed by Engineer

____ Modifications to services of Engineer

____ Modifications to responsibilities of Owner

____ Modifications of payment to Engineer

____ Modifications to time(s) for rendering services

____ Modifications to other terms and conditions of the Agreement

Description of Modifications:

Incorporated Guam Procurement Law Clauses

Article 6.07 of the Agreement is supplemented to include the following agreement of the parties:

B. Engineer hereby warrants that it will abide by 5 GCA Section 5630 prohibiting gratuities, kickbacks and favors in relation to the solicitation and execution of this Contract.

C. Engineer hereby warrants that it has not retained any person or entity to solicit or secure this Contract, or paid a contingent fee, commission or brokerage fee as proscribed in 5 GCA Section 5631(a).

D. Engineer hereby warrants that it has not knowingly influence a government employee to breach any of the ethical standards set forth in 5 GCA Chapter 5 Article 11 and in Chapter 11 of the Guam Procurement Regulations.

E. Engineer hereby warrants that no person, providing services on behalf of the Engineer has been convicted of a sex offense under the provisions of Chapter of Title 9 GCA or any offense as defined in Article 2 of Chapter 28, Title 9 GCA; and should any person providing services on behalf of the

Engineer be convicted during the course of this Contract, such person shall be immediately removed from GWA projects and GWA will be informed of the conviction within twenty-four (24) hours.

Agreement Summary:

Original agreement amount:	$_____
Net change for prior amendments:	$_____
This amendment amount:	$_____
Adjusted Agreement amount:	$_____

Change in time for services (days or date, as applicable): _____

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:	**ENGINEER:**
Guam Waterworks Authority	**AECOM Technical Services, Inc.**
By: _____	By: _____
Print name: MIGUEL C. BORDALLO, P.E.	Print name: **Martin Nakasone**
Title: General Manager	Title: **Area Manager, Hawaii-Pacific Islands**
Date Signed: _____	Date Signed: _____

AECOM
414 W. Soledad Ave.
Suite 708
Hagåtña, GU 96910
www.aecom.com

671-477-8326/7 tel
671-472-8324 fax

April 29, 2022

Miguel Bordallo, P.E., General Manager
Guam Waterworks Authority
Engineering Division, Room 202
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, GU 96913

Attention: George Watson

Subject: Scope of Work and Fee Proposal for RFP-03-ENG-2020, Fujita Sewer Pump Station Redundant Force Main; GWA Project No. S20-003-EPA.

Håfa Adai,

For the services described herein, AECOM Technical Services, Inc. proposes the fee proposal noted below for Fujita Sewer Pump Station (SPS) Redundant Force Main (FM) Project to provide professional design services.

The scope of work, fee details, and schedule are included in Appendices A, B and C, respectively. The scope of work is based on refinements made during fee and scope negotiations. The fee represents the scope of work associated with improvements to the existing system along the existing Fujita SPS FM alignment. The total fee estimate is $930,834.57 as shown in **Table 1**.

Table 1: Fee Summary

Task No.	Task Name	Fee
1	Project Management	$34,898.04
2	Preliminary Design	$420,722.05
3	Design	$393,929.05
4	Contract Bidding Support	$18,002.81
5	Engineering Support During Construction	$63,282.62
	Total:	$930,834.57

We appreciate the opportunity and look forward to working with the Guam Waterworks Authority on this very important project. If you have any questions regarding this fee proposal, please call me at (808) 529-7219 or Pete Diaz at (671) 477-8325.

Sincerely,

Nakasone, Martin

Digitally signed by Nakasone, Martin
DN: cn=Nakasone, Martin, ou=USHNL1, email=Martin.Nakasone@aecom.com
Date: 2022.04.28 12:50:22 -10'00'

Martin Nakasone
Area Manager,
Hawaii-Pacific Islands
martin.nakasone@aecom.com

Enclosures: Appendix A: Scope of Work
Appendix B: Fee Detail
Appendix C: Schedule

EXHIBIT B

Consent Decree
Table A - Force Mains

1. Hagåtña Main
2. Asan
3. Bayside
4. Pago Double Shaft
5. Mamajanao
6. Barrigada
7. Mangilao
8. Piti
9. Tai Mangilao
10. Pump Station No. 17
11. Paseo De Oro
12. Dairy Road
13. Pump Station No. 16
14. Maite
15. Harmon
16. **Fujita**
17. Route 16
18. Yigo
19. Chaligan
20. Ypao
21. Inarajan Main
22. Southern Link
23. New Chaot
24. Gaan
25. Alupang Cove

EXHIBIT C

Consent Decree
Table B - Tier 1 Sewer Pump Stations

1. Alupang Cove
2. Astumbo #1
3. Astumbo #2
4. Bayside
5. Dairy Road
6. Ejector Station No. 2
7. **Fujita**
8. Harmon
9. Inarajan Main
10. Inarajan Lift Station
11. Machanao
12. Mongmong Toto
13. Pago Double Shaft
14. Piti
15. Pump Station No. 13
16. Pump Station No. 16
17. Pump Station No. 17
18. Pump Station No. 19
19. Pump Station No. 20
20. Route 16
21. Southern Link
22. Talofofo
23. Yigo

EXHIBIT D

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, Guam 96913

CHANGE ORDER NO. 1

Project Title:	Fujita Sewage Pump Station Redundant Force Main				
Project No.:	S20-003-EPA	**RFP No.**	RFP-03-ENG-2020		
Contractor:	AECOM Technical Services, Inc.			NTP Date:	October 10, 2022

TO: AECOM Technical Services, Inc.

You are directed to make changes noted below in the subject contract. The changes are accepted by:

Martin Nakasone
Contractor Representative (PRINT)

Digitally signed by 01790010625
DN: cn=01790010625, c=US, o=Palo Alto Networks
Date: 2023.12.11 19:15:53 -10'00'

Contractor Representative (SIGNATURE) Date

PREPARED BY : George Watson Digitally signed by George Watson Date: 2023.12.13 08:05:05 +10'00'
George Watson Date
Project Manager, GWA

REVIEWED BY : Mauryn McDonald Digitally signed by Mauryn McDonald Date: 2023.12.13 08:59:17 +10'00'
Mauryn McDonald, P.E. Date
Senior Engineer Supervisor, GWA

RECOMMEND APPROVAL : Jeanet Owens Digitally signed by Jeanet Owens Date: 2023.12.19 16:39:42 +10'00'
Jeanet Babauta Owens, P.E. Date
Assistant General Manager - Engineering, GWA

NATURE OF CHANGES:

Sewage Pump Station (SPS) Scope of Work and Additonal Force Main (FM) Scope of Work

- **SPS Assessment and Design Scope and Fee (Resolution Exhibit D).** Fujita was identified as one of the SPS in the most critical need for rehabilitation according to the Consent Decree (CD) and all necessary improvements to it are required to be completed within two years of the approval of the CD. To get ahead, we are extending the scope to include assessment and design of the work needed to bring the Fujita SPS up to requirements stated in the CD.
- **Additional FM Assessment Scope and Fee (Resolution Exhibit D).** After review of the Condition Assessment Report of the existing FM completed in April 2023, it was determined there are some areas of the existing FM that need further assessment, to be completd during the construction of the new FM while the active and existing FM will be exposed.
- **CCU Approved Resolution No. 04-FY2024 (Attachment 1)**. The work and funding of this Change Order has been approved by the CCU in the attached GWA Resolution No. 04-FY2024.

THE CHANGES RESULT IN THE FOLLOWING ADJUSTMENT OF CONTRACT PRICE:

Contract price prior to this Change Order	$	930,834.57
Net INCREASE from this Change Order	$	670,764.72
Revised contract price after this Change Order	$	1,601,599.29

THE CHANGES RESULT IN THE FOLLOWING ADJUSTMENT OF CONTRACT TIME:

Contract time prior to this Change Order, with breakdown given below.	814	Calendar Days
Net INCREASE from this Change Order with breakdown given below (subject to approved terms and conditions)"	0	Calendar Days
Revised contract time after this Change Order	814	Calendar Days
Revised Contract Expiration Date after this Change Order (Substantial Completion Date)	Tuesday, December 31, 2024	

CERTIFIED FUNDS AVAILABLE:

Vendor No.:	23784
Contract No.:	3027 OS
Funding Source:	USEPA SRF M96902619-1
G.L. NO.:	22003.2997.300000
Amount:	$ 670,764.72

1/2/2024
Taling M. Taitano, CPA, CGFM Date
Chief Financial Officer 2024.01.02 09:12:22 +10'00'

2024.01.02 09:48:15 +10'00'

APPROVED AS TO FORM:

Signed separate copy
Theresa G. Rojas Date
Legal Counsel, GWA

APPROVED:

1/2/2024
Miguel C. Bordallo, P.E. Date
General Manager, GWA

Attachment 1

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. 04-FY2024

RELATIVE TO APPROVAL OF ADDITIONAL FUNDING FOR THE FUJITA SEWAGE PUMP STATION REHABILITATION AND REDUNDANT FORCE MAIN DESIGN PROJECT, GWA PROJECT NO. S20-003-EPA

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's public wastewater collection/transmission system, consisting of gravity mains, manholes, laterals, force mains (FM), sewer pump stations (SPS), and other related appurtenances, are in need of repair, rehabilitation, or replacement; and

WHEREAS, GWA has received United States Environmental Protection Agency (USEPA) grant funding for the Fujita FM design project; and

WHEREAS, the Fujita FM serves most of the Tumon Bay area and is approximately 7,100 feet long; and

WHEREAS, the FM's condition is not known and failure of the FM could lead to service disruptions which may impact the health of the community, environment, and environment, and negatively impact Guam's main tourist area; and

WHEREAS, to address this concern GWA advertised a Request For Proposals on August 25, 2020, and entered into a contract for design services for a redundant FM with AECOM Technical Services, Inc., on October 5, 2022, in the amount of Nine Hundred Thirty

Thousand Eight Hundred Thirty-Four Dollars and Fifty-Seven Cents ($930,834.57), as shown in Exhibit A; and

WHEREAS, an initial assessment of accessible sections of the FM at air relief valves (ARV) identified a maximum FM wall thickness loss of eleven percent (11%) at one ARV and thirty-eight (38%) at another ARV; and

WHEREAS, additional sub-surface investigation (requiring trenching and pot-holing) of the FM in buried sections is needed to confirm its condition and design its rehabilitation or replacement; and

WHEREAS, the impending Consent Decree with USEPA requires a Force Main Condition Assessment, Force Main Action Plan and Implementation of the Force Main Action Plan for the FM identified in Consent Decree Table A (see Exhibit B) to be completed within nine (9) years of the Effective Date; and in which Fujita FM is listed in Table A; and

WHEREAS, the approval of this resolution will enable the Fujita FM project to meet Consent Decree requirements and deadlines; and

WHEREAS, the impending Consent Decree with USEPA requires the rehabilitation of the SPS listed in Consent Decree Table B, Tier 1 (see Exhibit C) within seven (7) years of the Effective Date; and in which, the Fujita SPS is listed in Tier 1; and

WHEREAS, the approval of this resolution will enable the Fujita SPS rehabilitation to be completed within (7) years; and

WHEREAS, USEPA has approved the inclusion of the redundant Fujita FM and SPS rehabilitation in the design project, as pump station operations are essential for FM operations; and

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WHEREAS, the negotiated cost for the SPS rehabilitation assessment and design, as well as subsurface investigation of buried sections of the FM, is Six Hundred Seventy Thousand Seven Hundred Sixty-Four Dollars and Seventy-Two Cents ($670,764.72), as shown in Exhibit D; and

WHEREAS, given the seven (7) year time frame required to complete the SPS rehabilitation, a Fifteen Percent (15%) contingency of Two Hundred Forty Thousand Two Hundred Thirty-Nine Dollars and Eighty-Nine Cents ($240,239.89) is requested to reduce processing time for any future change orders and allow the designer to assist with the specification and procurement of long-lead items prior to construction contract execution; and

WHEREAS, the total contract cost to include the SPS assessment and design rehabilitation, and additional FM assessment, is One Million Six Hundred and One Thousand Five Hundred Ninety-Nine Dollars and Twenty-Nine Cents ($1,601,599.29), and a Fifteen Percent (15%) continency of Two Hundred Forty Thousand Two Hundred Thirty-Nine Dollars and Eighty-Nine Cents ($240,239.89) will bring the total authorized funding amount to One Million Eight Hundred Forty-One Thousand Eight Hundred Thirty-Nine Dollars and Eighteen Cents ($1,841,839.18); and

WHEREAS, funding for this design project will be from the USEPA grants; and

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

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU finds that the requested funding authorization increases to be fair, reasonable, and necessary for the Fujita Redundant FM and SPS rehabilitation design project.
3. The CCU hereby authorizes the management of GWA to execute a Change Order to the contract with AECOM Technical Services, Inc., for a total contract amount of One Million Six Hundred One Thousand Five Hundred Ninety-Nine Dollars and Twenty-Nine Cents ($1,601,599.29).

4. The CCU hereby authorizes the total authorized funding to include a fifteen percent (15%) contingency, increasing the authorized funding amount to One Million Eight Hundred Forty-One Thousand Eight Hundred Thirty-Nine Dollars and Eighteen Cents ($1,841,839.18).
5. The CCU hereby further authorizes the use of USEPA grants as the funding source.

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

DULY AND REGULARLY ADOPTED, this 28th day of November 2023.

Certified by:

JOSEPH T. DUENAS
Chairperson

Attested by:

PEDRO ROY MARTINEZ
Secretary

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SECRETARY'S CERTIFICATE

I, Pedro Roy Martinez, 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: 5
NAYS: 0
ABSENT: 0
ABSTAIN: 0

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EXHIBIT E

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. 04-FY2024

RELATIVE TO APPROVAL OF ADDITIONAL FUNDING FOR THE FUJITA SEWAGE PUMP STATION REHABILITATION AND REDUNDANT FORCE MAIN DESIGN PROJECT, GWA PROJECT NO. S20-003-EPA

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's public wastewater collection/transmission system, consisting of gravity mains, manholes, laterals, force mains (FM), sewer pump stations (SPS), and other related appurtenances, are in need of repair, rehabilitation, or replacement; and

WHEREAS, GWA has received United States Environmental Protection Agency (USEPA) grant funding for the Fujita FM design project; and

WHEREAS, the Fujita FM serves most of the Tumon Bay area and is approximately 7,100 feet long; and

WHEREAS, the FM's condition is not known and failure of the FM could lead to service disruptions which may impact the health of the community, environment, and environment, and negatively impact Guam's main tourist area; and

WHEREAS, to address this concern GWA advertised a Request For Proposals on August 25, 2020, and entered into a contract for design services for a redundant FM with AECOM Technical Services, Inc., on October 5, 2022, in the amount of Nine Hundred Thirty

Thousand Eight Hundred Thirty-Four Dollars and Fifty-Seven Cents ($930,834.57), as shown in Exhibit A; and

WHEREAS, an initial assessment of accessible sections of the FM at air relief valves (ARV) identified a maximum FM wall thickness loss of eleven percent (11%) at one ARV and thirty-eight (38%) at another ARV; and

WHEREAS, additional sub-surface investigation (requiring trenching and pot-holing) of the FM in buried sections is needed to confirm its condition and design its rehabilitation or replacement; and

WHEREAS, the impending Consent Decree with USEPA requires a Force Main Condition Assessment, Force Main Action Plan and Implementation of the Force Main Action Plan for the FM identified in Consent Decree Table A (see Exhibit B) to be completed within nine (9) years of the Effective Date; and in which Fujita FM is listed in Table A; and

WHEREAS, the approval of this resolution will enable the Fujita FM project to meet Consent Decree requirements and deadlines; and

WHEREAS, the impending Consent Decree with USEPA requires the rehabilitation of the SPS listed in Consent Decree Table B, Tier 1 (see Exhibit C) within seven (7) years of the Effective Date; and in which, the Fujita SPS is listed in Tier 1; and

WHEREAS, the approval of this resolution will enable the Fujita SPS rehabilitation to be completed within (7) years; and

WHEREAS, USEPA has approved the inclusion of the redundant Fujita FM and SPS rehabilitation in the design project, as pump station operations are essential for FM operations; and

//

WHEREAS, the negotiated cost for the SPS rehabilitation assessment and design, as well as subsurface investigation of buried sections of the FM, is Six Hundred Seventy Thousand Seven Hundred Sixty-Four Dollars and Seventy-Two Cents ($670,764.72), as shown in Exhibit D; and

WHEREAS, given the seven (7) year time frame required to complete the SPS rehabilitation, a Fifteen Percent (15%) contingency of Two Hundred Forty Thousand Two Hundred Thirty-Nine Dollars and Eighty-Nine Cents ($240,239.89) is requested to reduce processing time for any future change orders and allow the designer to assist with the specification and procurement of long-lead items prior to construction contract execution; and

WHEREAS, the total contract cost to include the SPS assessment and design rehabilitation, and additional FM assessment, is One Million Six Hundred and One Thousand Five Hundred Ninety-Nine Dollars and Twenty-Nine Cents ($1,601,599.29), and a Fifteen Percent (15%) continency of Two Hundred Forty Thousand Two Hundred Thirty-Nine Dollars and Eighty-Nine Cents ($240,239.89) will bring the total authorized funding amount to One Million Eight Hundred Forty-One Thousand Eight Hundred Thirty-Nine Dollars and Eighteen Cents ($1,841,839.18); and

WHEREAS, funding for this design project will be from the USEPA grants; and

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

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU finds that the requested funding authorization increases to be fair, reasonable, and necessary for the Fujita Redundant FM and SPS rehabilitation design project.
3. The CCU hereby authorizes the management of GWA to execute a Change Order to the contract with AECOM Technical Services, Inc., for a total contract amount of One Million Six Hundred One Thousand Five Hundred Ninety-Nine Dollars and Twenty-Nine Cents ($1,601,599.29).

4. The CCU hereby authorizes the total authorized funding to include a fifteen percent (15%) contingency, increasing the authorized funding amount to One Million Eight Hundred Forty-One Thousand Eight Hundred Thirty-Nine Dollars and Eighteen Cents ($1,841,839.18).
5. The CCU hereby further authorizes the use of USEPA grants as the funding source.

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

DULY AND REGULARLY ADOPTED, this 28th day of November 2023.

Certified by:

JOSEPH T. DUENAS
Chairperson

Attested by:

PEDRO ROY MARTINEZ
Secretary

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SECRETARY'S CERTIFICATE

I, Pedro Roy Martinez, 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: 5
NAYS: 0
ABSENT: 0
ABSTAIN: 0

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EXHIBIT F

AECOM
414 W. Soledad Ave.
Suite 708
Hagåtña, GU 96910
www.aecom.com

671-477-8326/7 tel
671-472-8324 fax

August 16, 2024

Miguel Bordallo, P.E., General Manager
Guam Waterworks Authority
Engineering Division, Room 202
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, GU 96913

Attention: George Watson

Subject: Change Order No. 2 (CO 2), Scope of Work and Fee Proposal for RFP-03-ENG-2020, Fujita Sewer Pump Station (SPS) Redundant Force Main; GWA Project No. S20-003-EPA.

Håfa Adai,

For the services described herein, AECOM Technical Services, Inc. proposes the fee proposal noted below for GWA-requested equipment, additional engineering services for SPS condition assessment, incorporating the former Tumon SPS for bypass pumping, and updating the project schedule.

The scope of work, fee details, and schedule are included in Appendices E.1, E.2 and E.3, respectively. The scope of work is based on refinements made during fee and scope negotiations. The fee estimate for CO 2 is $435,432.80 as shown in **Table 1**.

Table 1: Fee Summary

Task No.	Task Name	Fee
1	Project Management	$31,608.74
2	Preliminary Design	$114,285.84
3	Design	$224,995.74
4	Bid Support (T&M)	$16,355.56
5	Engineering Support During Construction (T&M)	$48,186.92
	Total:	$435,432.80

We appreciate the opportunity and look forward to working with the Guam Waterworks Authority on this very important project. If you have any questions regarding this fee proposal, please call me at (808) 529-7219 or Pete Diaz at (671) 477-8325.

Sincerely,

Martin Nakasone
Area Manager,
Hawaii-Pacific Islands
martin.nakasone@aecom.com

Enclosures: Appendix E.1: Scope of Work
Appendix E.2: Fee Detail
Appendix E.3: Schedule

AECOM

APPENDIX E.1: ADDITIONAL SCOPE OF WORK

I. PROJECT OBJECTIVES

A. The objectives of the additional scope of work (SOW) are as follows:

1. Provide GWA-requested equipment and conduct design services for the rehabilitation of the former Tumon SPS to be used as a bypass pump station at the Fujita SPS.

II. SERVICES

A. ADDITIONAL SCOPE OF SERVICES

The additional services would support the preliminary design, design, contract bidding support and engineering support during construction to integrate the rehabilitation of the former Tumon SPS as a permanent bypass pump station at the Fujita SPS.

The scope of DESIGN CONSULTANT services anticipated for this modification includes, but is not limited to:

1. Project Management
2. Civil/Process Mechanical Engineering
3. Structural Engineering
4. Mechanical (HVAC, Plumbing, Fire Protection) Engineering
5. Electrical/Power Engineering
6. Instrumentation & Control Engineering
7. Supervisory Control and Data Acquisition (SCADA)
8. Tumon SPS Condition Assessment
9. Pump Station and Pumping System Evaluation, Analysis and Design
10. Hydraulic Modeling and Analysis
11. Construction Cost Estimating
12. Bidding Support
13. Engineering Support During Construction

Exclusions to the scope of services include the following:

1. Rainfall and flow monitoring
2. Manhole and pipe inspections
3. Pressure testing evaluations
4. Support studies for NEPA documentation
5. Record Drawing (As-built Preparation)
6. Confined Space Entry

B. SCOPE OF WORK

1. TASK 1 – PROJECT MANAGEMENT

   This task is to be on a lump sum basis.

   a. The additional services would require coordination, subcontracting and invoicing that would fall under Task 1 in the original SOW.

   b. Furnish three (3) computer laptop to be turned over to GWA. The laptops are to meet the minimum requirements:

AECOM

i. CPU - 13th Generation Intel i7 Processor with minimum 2.3GHz speed
ii. Screen size - minimum 14.0-inch FHD (1920x1820)
iii. Memory/RAM - 32GB
iv. Storage - minimum 512GB Solid State Drive (w/ option to upgrade to 1TB). 1 TB SSD is preferred.
v. Wireless - compatible with IEEE 802.11ac
vi. Operating System - Windows 11 Pro x64
vii. Productivity - None
viii. Security - TPM 2.0 chip installed
ix. Accessories - Compatible Docking Station with 2+ Video Ports and Ethernet, USB Wired Mouse, USB Wired Keyboard
x. External Monitors - 2 x 27inch LCD Monitors (with local support)
xi. Internal camera, speakers, and microphone
xii. Minimum 1-Year Local Hardware Support
xiii. Laptops must be U.S. Trade Agreement Act (TAA) compliant. To be TAA compliant, a product or service must be made or "substantially transformed" in the U.S. or a designated country.

2. TASK 2 - PRELIMINARY DESIGN

Task 2 is to be on a lump sum basis.

a. Subtask 2.1 – Research and Field Investigation

i. Additional SPS Condition Assessment

(1) Conduct concrete coring & video camera services at two (2) locations within the former Tumon SPS. Identify defects along the interior concrete walls in the former dry pit space the concrete walls within the existing wetwell of the former Tumon SPS by confined space entry. DESIGN CONSULTANT to coordinate with GWA Engineering and/or GWA Operations and Maintenance on access to the former Tumon SPS.

(2) Assumptions

(a) Coring: Work to consist of four (4) 8-inch diameter cores at two (2) locations through approximately 10 inches of concrete. The core openings should allow access for GWA to utilize their pole camera. Debris generated by the coring work to be appropriately disposed of.

(b) Video camera services: For two (2) locations, to observe the condition of the concrete walls on the interior of the former dry pit and one (1) location in the former wetwell.

(c) Confined space entry: There will be available access to wetwell, manhole at former Tumon SPS for video camera services.

(d) Data Storage: Video recordings to be provided on a CD or SD card and also uploaded electronically to a file share site to be coordinated by AECOM.

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(e) GWA to provide access to power and water utilities for use during assessment.

(f) GWA may capture additional video and/or photo data and provide to the DESIGN CONSULTANT for review.

(3) Deliverables:

(a) Information from the additional SPS Condition assessment to be incorporated into One Draft and one Final SPS Condition Assessment Report covered in Change Order No. 1 which includes 4 hard copies and a digital copy. The collected field data and conclusions on the condition of the former Tumon SPS and recommendations for corrective action are to be incorporated into the design.

ii. Notwithstanding anything in this Agreement, the DESIGN CONSULTANT shall have no responsibility for the discovery, presence, handling, removal, or disposal of, or exposure of persons to hazardous materials in any form, at the former Tumon SPS.

b. Subtask 2.2 - Design Alternatives Report

i. Incorporate the rehabilitation of the former Tumon SPS into the Design Alternatives Report (DAR) for the project.

ii. Include additional hydraulic modeling and analysis of up to three scenarios for the former Tumon SPS.

c. Subtask 2.3 – Basis of Design (BOD) Report

Incorporate key information pertaining to civil, structural, electrical, and instrumentation design criteria for the modification of former Tumon SPS in the BOD for the project.

3. TASK 3 – DESIGN

Task 3 is to be on a lump sum basis. After the final BOD Report is approved by GWA, the DESIGN CONSULTANT to perform the following tasks to achieve the Final Design documents. Incorporate the rehabilitation of the former Tumon SPS into the Design Documents (30%, 60%, 90% and final (100%) “Issued for Bid”) for the project.

4. TASK 4 - CONTRACT BIDDING SUPPORT

Task 4 is to be on a time and materials basis and includes the rehabilitation of the former Tumon SPS into the Project. The DESIGN CONSULTANT shall provide the following services:

a. Pre-Bid Meeting agenda and sign-in sheets, coordinate and facilitate the meeting with GWA, and record meeting minutes.

b. Compile request for clarification, provide input and prepare addenda as needed

c. Attend bid evaluation conference

d. Review, evaluate and certify bid tabulations

e. Make recommendation for construction contract award.

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5. TASK 5 - ENGINEERING SUPPORT DURING CONSTRUCTION

Task 5 is to be on a time and materials basis and includes the rehabilitation of the former Tumon SPS into the Project.

a. Coordinate preparation of final (100%) “Issued for Construction” conformed plans and specifications incorporating addenda and changes during the bid phase with the CONSTRUCTION MANAGER (CM).

b. Attend weekly progress meetings, if requested by the CM or GWA.

    i. Five (5) progress meetings are included in this scope of work. If additional meetings are needed, a separate scope and fee is to be provided.

c. Review contractor submittals (e.g., product data, shop drawings, design calculations, samples, test results, and other data) to be submitted by the contractor for conformance with contract documents, if requested by the CM.

    i. Twenty (20) submittal reviews are included in this scope of work. It is assumed each submittal to have 3 review iterations. If additional submittals are needed for review, a separate scope and fee is to be provided.

d. Evaluate substitution requests to determine acceptability of substitute materials and equipment proposed by contractor, if requested by the CM.

    i. Five (5) substitution request reviews are included in this scope of work. It is assumed each substitution request to have 3 review iterations. If additional substitution requests are needed for review, a separate scope and fee is to be provided.

e. Conduct site visits by qualified personnel to review if construction complies with basis of design is excluded from the scope of work and assumed to be provided by others (e.g., CM).

f. Review requests for additional information, change orders, schedule of values, and contractor’s schedule and provide responses/comments, if requested by the CM.

    i. Fifteen (15) reviews are included in this scope of work. If additional reviews are needed, a separate scope and fee is to be provided.

g. Operational Testing and Performance Period

    i. DESIGN CONSULTANT to provide technical support to assist GWA during the Operational Testing and Performance period. Ten (10) requests for reviews are included in this SOW. Travel is excluded for this scope item.

        (1) **Operational Testing.** Contractor to operate and monitor the former Tumon SPS for five (5) consecutive days. During operational testing, Contractor shall demonstrate SPS operation on automatic control without equipment or control failure and with sewage tie-in. The Pump Station mechanical equipment, electrical/control systems, and emergency power equipment shall operate without failure during the operational testing.

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(2) Performance Period. For a Pump Station to be considered operational and successfully complete the performance period, all Pump Station equipment and operational systems, including all control, alarm, and SCADA systems, shall operate without failure for six (6) months and shall not result in any SSOs caused by a Pump Station failure within that time period

h. Exclusions:

i. Perform preliminary and final inspections and submit punch list. To be provided by the CM.

ii. Provide Final Record Drawings based on marked-up construction drawings. To be provided by the Contractor.

iii. Archaeological services during construction are excluded from the scope of work.

i. GWA agrees that in accordance with generally accepted construction practices, the construction contractor should assume sole and complete responsibility for job site conditions during construction of the project, including safety of all persons and property, and that this requirement shall be made to apply continuously and not be limited to normal working hours. The DESIGN CONSULTANT shall not have control over or charge of, and shall not be responsible for, construction means, methods, techniques, sequences, or procedures, as these are solely the responsibility of the construction contractor. DESIGN CONSULTANT shall not have the authority to stop the work of the construction contractor. In no event shall DESIGN CONSULTANT be liable for the acts or omissions of any construction contractors, their subcontractors, any of their agents or employees, or any other persons or entities performing any work related to this project, or for the failure of any of them to carry out construction work under contract with GWA.

APPENDIX E.2: FEE DETAIL

Former Tumon Pump Station Rehabilitation **Guam Waterworks Authority**

		Personnel Hours								Budget					
	Rate ($/HR)	$307	$286	$236	$214	$199	$119	$91							
	Task Description	**Principal**	**Engineer IV**	**Engineer III**	**Engineer II**	**Engineer I**	**CADD Technician**	**Clerical**	**Total Hours**	**Labor**	**Subconsultants**	**Other Direct Costs**	**Taxes**	**Total**	**Notes/Assumptions**
Task 1 - Project Management (Lump Sum)															
1.1	**Project Management Plan**	-	-	4	4	-	-	16	24	$ 3,256.00	$ -	$ 6.60	$ 171.61	$ 3,434.21	Update for new SOW
1.2	**Project Schedule**	-	-	4	4	-	-	-	8	$ 1,800.00	$ -	$ 13.20	$ 95.37	$ 1,908.57	Update for new SOW
1.3	**Progress Reports and Administration**	4	-	25	25	-	-	32	86	$ 15,390.00	$ -	$ 9,563.40	$ 1,312.55	$ 26,265.95	Assumed additional 7 months from Pre-design and Design for new SOW. Include contract administration, budget tracking, invoicing, etc.
	Subtotal	**4**	-	**33**	**33**	-	-	**48**	**118**	**$ 20,446.00**	**$ -**	**$ 9,583.20**	**$ 1,579.54**	**$ 31,608.74**	
Task 2 - Preliminary Design															
2.1	**Research and Field Investigation**	8	-	28	16	16	16	8	92	$ 18,304.00	$ 10,950.00	$ 1,244.66	$ 1,604.23	$ 32,102.88	
2.1.1	Review SPS Data	2	-	8	8	8	8	-	34	$ 6,758.00	$ 1,000.00	$ 194.88	$ 418.32	$ 8,371.20	Review data applicable to SPS Rehabilitation to include Civil, Architectural, Structural, Process Mechanical, Building Mechanical, Electrical and Instrumentation. Subconsultant: WMES for mechanical services.
2.1.2	Field Investigation	2	-	12	-	-	-	-	14	$ 3,446.00	$ 7,950.00	$ 804.13	$ 641.73	$ 12,841.86	cleanup services for Former Tumon SPS.
2.1.3	SPS Condition Assessment	4	-	8	8	8	8	8	44	$ 8,100.00	$ 2,000.00	$ 245.65	$ 544.18	$ 10,889.83	Structural Condition Assessment
2.2	**Design Alternatives Report**	**2**	**14**	**56**	**120**	**88**	**-**	**8**	**288**	**$ 61,754.00**	**$ 2,000.00**	**$ 322.10**	**$ 3,370.40**	**$ 67,446.50**	
2.2.1	Hydraulic Modeling	-	14	48	80	80	-	-	222	$ 48,372.00	$ -	$ 25.85	$ 2,545.73	$ 50,943.58	Additional modeling effort. Assumed maximum of 3 scenarios for former Tumon PS Rehab.
2.2.2	Alternatives Analysis and Report	2	-	8	40	8	-	8	66	$ 13,382.00	$ 2,000.00	$ 296.25	$ 824.68	$ 16,502.93	Include up to 3 alternatives for analysis
2.3	**Basis of Design Report**	**4**	**4**	**8**	**16**	**16**	**-**	**8**	**56**	**$ 11,596.00**	**$ 2,000.00**	**$ 404.05**	**$ 736.40**	**$ 14,736.45**	**Improvements along existing FM alignment;**
2.3.2	Engineering Basis of Design	4	4	8	16	16	-	8	56	$ 11,596.00	$ 2,000.00	$ 404.05	$ 736.40	$ 14,736.45	Includes Civil, Struc, Mechanical, Process, Elec, and I&C disciplines. Subconsultant: WMES for mechanical services.
	Subtotal	**14**	**18**	**92**	**152**	**120**	**16**	**24**	**436**	**$ 91,654.00**	**$ 14,950.00**	**$ 1,970.81**	**$ 5,711.03**	**$ 114,285.84**	

APPENDIX E.2: FEE DETAIL

Former Tumon Pump Station Rehabilitation **Guam Waterworks Authority**

Task Description		Personnel Hours								Budget					Notes/Assumptions
Rate ($/HR)		$307	$286	$236	$214	$199	$119	$91							
		Principal	Engineer IV	Engineer III	Engineer II	Engineer I	CADD Technician	Clerical	Total Hours	Labor	Subconsultants	Other Direct Costs	Taxes	Total	
Task 3 - Design (Lump Sum)															
3.3	**Design**	98	76	37	224	181	294	72	982	$ 186,047.00	$ 24,000.00	$ 3,705.37	$ 11,243.37	$ 224,995.74	
3.3.1	**30% Design**	**28**	**12**	**14**	**73**	**58**	**88**	**24**	**297**	**$ 55,152.00**	**$ 6,500.00**	**$ 701.59**	**$ 3,279.80**	**$ 65,633.39**	Includes Civil, Arch, Struc, Mechanical, Process, Elec, and I&C disciplines.
3.3.1.1	Civil	-	2	-	2	10	13	-	27	$ 4,537.00	$ -	$ -	$ 238.65	$ 4,775.65	
3.3.1.2	Architectural	-	4	-	4	14	22	-	44	$ 7,404.00	$ -	$ -	$ 389.45	$ 7,793.45	
3.3.1.3	Structural	2	2	-	8	-	14	-	26	$ 4,564.00	$ -	$ -	$ 240.07	$ 4,804.07	
3.3.1.4	Process	-	2	-	2	10	14	-	28	$ 4,656.00	$ -	$ -	$ 244.91	$ 4,900.91	
3.3.1.5	Mechanical	-	-	2	-	-	-	-	2	$ 472.00	$ 2,000.00	$ 200.00	$ 140.55	$ 2,812.55	Subconsultant: WMES for mechanical services.
3.3.1.6	Electrical	10	-	-	14	-	14	-	38	$ 7,732.00	$ -	$ -	$ 406.70	$ 8,138.70	
3.3.1.7	Instrumentation	4	-	-	11	-	11	-	26	$ 4,891.00	$ -	$ -	$ 257.27	$ 5,148.27	
3.3.1.8	Specifications	4	-	4	16	8	-	16	48	$ 8,644.00	$ 1,500.00	$ 153.30	$ 541.64	$ 10,838.94	
3.3.1.9	Cost Estimate	4	-	4	8	16	-	-	32	$ 7,068.00	$ 1,500.00	$ 151.98	$ 458.67	$ 9,178.65	
3.3.1.9	QA/QC	4	2	4	8	-	-	8	26	$ 5,184.00	$ 1,500.00	$ 196.31	$ 361.90	$ 7,242.21	
3.3.2	**60% Design**	**28**	**26**	**8**	**61**	**54**	**88**	**16**	**281**	**$ 53,648.00**	**$ 6,500.00**	**$ 786.62**	**$ 3,205.16**	**$ 64,139.78**	Includes Civil, Struc, Process, Elec, and I&C disciplines.
3.3.2.1	Civil	-	2	-	2	10	13	-	27	$ 4,537.00	$ -	$ -	$ 238.65	$ 4,775.65	
3.3.2.2	Architectural	-	4	-	4	14	22	-	44	$ 7,404.00	$ -	$ -	$ 389.45	$ 7,793.45	
3.3.2.3	Structural	2	2	-	8	-	14	-	26	$ 4,564.00	$ -	$ -	$ 240.07	$ 4,804.07	
3.3.2.4	Process	-	2	-	2	10	14	-	28	$ 4,656.00	$ -	$ -	$ 244.91	$ 4,900.91	
3.3.2.5	Mechanical	-	-	-	-	-	-	-	-	$ -	$ 2,000.00	$ 200.00	$ 115.72	$ 2,315.72	Subconsultant: WMES for mechanical services.
3.3.2.6	Electrical	10	-	-	14	-	14	-	38	$ 7,732.00	$ -	$ -	$ 406.70	$ 8,138.70	
3.3.2.7	Instrumentation	4	-	-	11	-	11	-	26	$ 4,891.00	$ -	$ -	$ 257.27	$ 5,148.27	
3.3.2.8	Specifications	4	4	4	4	4	-	16	36	$ 6,424.00	$ 1,500.00	$ 216.00	$ 428.16	$ 8,568.16	
3.3.2.9	Cost Estimate	4	8	4	8	16	-	-	40	$ 9,356.00	$ 1,500.00	$ 154.40	$ 579.15	$ 11,589.55	
3.3.2.10	QA/QC	4	4	-	8	-	-	-	16	$ 4,084.00	$ 1,500.00	$ 216.22	$ 305.09	$ 6,105.31	
3.3.3	**90% Design**	**30**	**26**	**10**	**61**	**50**	**88**	**24**	**289**	**$ 54,666.00**	**$ 6,500.00**	**$ 832.27**	**$ 3,261.11**	**$ 65,259.38**	Includes Civil, Struc, Process, Elec, and I&C disciplines.
3.3.3.1	Civil	-	2	-	2	10	13	-	27	$ 4,537.00	$ -	$ -	$ 238.65	$ 4,775.65	
3.3.3.2	Architectural	-	4	-	4	14	22	-	44	$ 7,404.00	$ -	$ -	$ 389.45	$ 7,793.45	
3.3.3.3	Structural	2	2	-	8	-	14	-	26	$ 4,564.00	$ -	$ -	$ 240.07	$ 4,804.07	
3.3.3.4	Process	-	2	-	2	10	14	-	28	$ 4,656.00	$ -	$ -	$ 244.91	$ 4,900.91	
3.3.3.5	Mechanical	-	-	-	-	-	-	-	-	$ -	$ 2,000.00	$ 200.00	$ 115.72	$ 2,315.72	Subconsultant: WMES for mechanical services.
3.3.3.6	Electrical	10	-	-	14	-	14	-	38	$ 7,732.00	$ -	$ -	$ 406.70	$ 8,138.70	
3.3.3.7	Instrumentation	4	-	-	11	-	11	-	26	$ 4,891.00	$ -	$ -	$ 257.27	$ 5,148.27	
3.3.3.8	Specifications	8	8	8	8	8	-	24	64	$ 12,120.00	$ 1,500.00	$ 238.00	$ 728.93	$ 14,586.93	
3.3.3.9	Cost Estimate	2	4	2	4	8	-	-	20	$ 4,678.00	$ 1,500.00	$ 154.40	$ 333.08	$ 6,665.48	
3.3.3.10	QA/QC	4	4	-	8	-	-	-	16	$ 4,084.00	$ 1,500.00	$ 239.87	$ 306.34	$ 6,130.21	
3.3.4	**Final Design**	**12**	**12**	**5**	**29**	**19**	**30**	**8**	**115**	**$ 22,581.00**	**$ 4,500.00**	**$ 1,384.89**	**$ 1,497.31**	**$ 29,963.20**	Includes Civil, Struc, Process, Elec, and I&C disciplines.
3.3.4.1	Civil	-	1	-	1	3	4	-	9	$ 1,573.00	$ -	$ -	$ 82.74	$ 1,655.74	
3.3.4.2	Architectural	-	1	-	1	5	7	-	14	$ 2,328.00	$ -	$ -	$ 122.45	$ 2,450.45	
3.3.4.3	Structural	1	1	-	3	-	5	-	10	$ 1,830.00	$ -	$ -	$ 96.26	$ 1,926.26	
3.3.4.4	Process	-	1	-	1	3	5	-	10	$ 1,692.00	$ -	$ -	$ 89.00	$ 1,781.00	
3.3.4.5	Mechanical	-	-	-	-	-	-	-	-	$ -	$ 1,000.00	$ 100.00	$ 57.86	$ 1,157.86	Subconsultant: WMES for mechanical services.
3.3.4.6	Electrical	3	-	-	5	-	5	-	13	$ 2,586.00	$ -	$ -	$ 136.02	$ 2,722.02	
3.3.4.7	Instrumentation	1	-	-	4	-	4	-	9	$ 1,639.00	$ -	$ -	$ 86.21	$ 1,725.21	
3.3.4.8	Specifications	2	2	4	4	4	-	8	24	$ 4,510.00	$ 1,500.00	$ 370.00	$ 335.59	$ 6,715.59	
3.3.4.9	Cost Estimate	1	2	1	2	4	-	-	10	$ 2,339.00	$ 1,000.00	$ 107.04	$ 181.26	$ 3,627.30	
3.3.4.10	QA/QC	4	4	-	8	-	-	-	16	$ 4,084.00	$ 1,000.00	$ 807.85	$ 309.91	$ 6,201.76	
Subtotal		**98**	**76**	**37**	**224**	**181**	**294**	**72**	**982**	**$ 186,047.00**	**$ 24,000.00**	**$ 3,705.37**	**$ 11,243.37**	**$ 224,995.74**	

APPENDIX E.2: FEE DETAIL

Former Tumon Pump Station Rehabilitation **Guam Waterworks Authority**

		Personnel Hours								Budget					
	Rate ($/HR)	$307	$286	$236	$214	$199	$119	$91							
	Task Description	Principal	Engineer IV	Engineer III	Engineer II	Engineer I	CADD Technician	Clerical	Total Hours	Labor	Subconsultants	Other Direct Costs	Taxes	Total	Notes/Assumptions
Task 4 - Bid Support (T&M)															
4.1	Addenda/IFB Drawings	4	6	8	8	8	24	24	82	$ 13,176.00	$ 2,000.00	$ 362.25	$ 817.31	$ 16,355.56	Assumed issuance of bid addendum for Contract Documents
	Subtotal	**4**	**6**	**8**	**8**	**8**	**24**	**24**	**82**	**$ 13,176.00**	**$ 2,000.00**	**$ 362.25**	**$ 817.31**	**$ 16,355.56**	
Task 5 - Engineering Support During Construction (T&M)															
5.1	Issue for Construction Plans and Specs	4	3	2	10	8	15	4	45	$ 8,079.00	$ 2,000.00	$ -	$ 530.16	$ 10,609.16	
5.2	Attend CM Meetings, if requested	-	-	5	-	-	-	-	5	$ 1,180.00	$ 300.00	$ 30.00	$ 79.43	$ 1,589.43	Assumed 5 additional progress meetings
5.3	Shop Drawing/Submittal Review	8	-	-	28	4	-	-	40	$ 9,244.00	$ 2,400.00	$ 294.45	$ 627.96	$ 12,566.41	Assumed 20 submittal reviews.
5.4	Substitution Review	4	-	-	8	2	-	-	14	$ 3,338.00	$ 800.00	$ 127.30	$ 224.35	$ 4,489.65	Assumed 5 substitution reviews.
5.5	Compliance site visit, if requested.	-	-	-	-	-	-	-	-	$ -	$ -	$ -	$ -	$ -	Excluded from SOW
5.6	RFI/RFC	6	-	-	20	4	-	-	30	$ 6,918.00	$ 1,700.00	$ 278.90	$ 467.98	$ 9,364.88	Assumed 15 RFI reviews.
5.7	Operational Testing and Performance Period Support	3	-	27	-	-	-	-	30	$ 7,293.00	$ 1,600.00	$ 196.30	$ 478.10	$ 9,567.40	Assumed 10 reviews.
	Subtotal	**25**	**3**	**34**	**66**	**18**	**15**	**4**	**164**	**$ 36,052.00**	**$ 8,800.00**	**$ 926.95**	**$ 2,407.97**	**$ 48,186.92**	
	Total	**145**	**103**	**204**	**483**	**327**	**349**	**172**	**1,782**	**$ 347,375.00**	**$ 49,750.00**	**$ 16,548.58**	**$ 21,759.23**	**$ 435,432.80**	

Lump Sum	**$ 370,890.32**
T&M	**$ 64,542.48**
Total	**$ 435,432.80**

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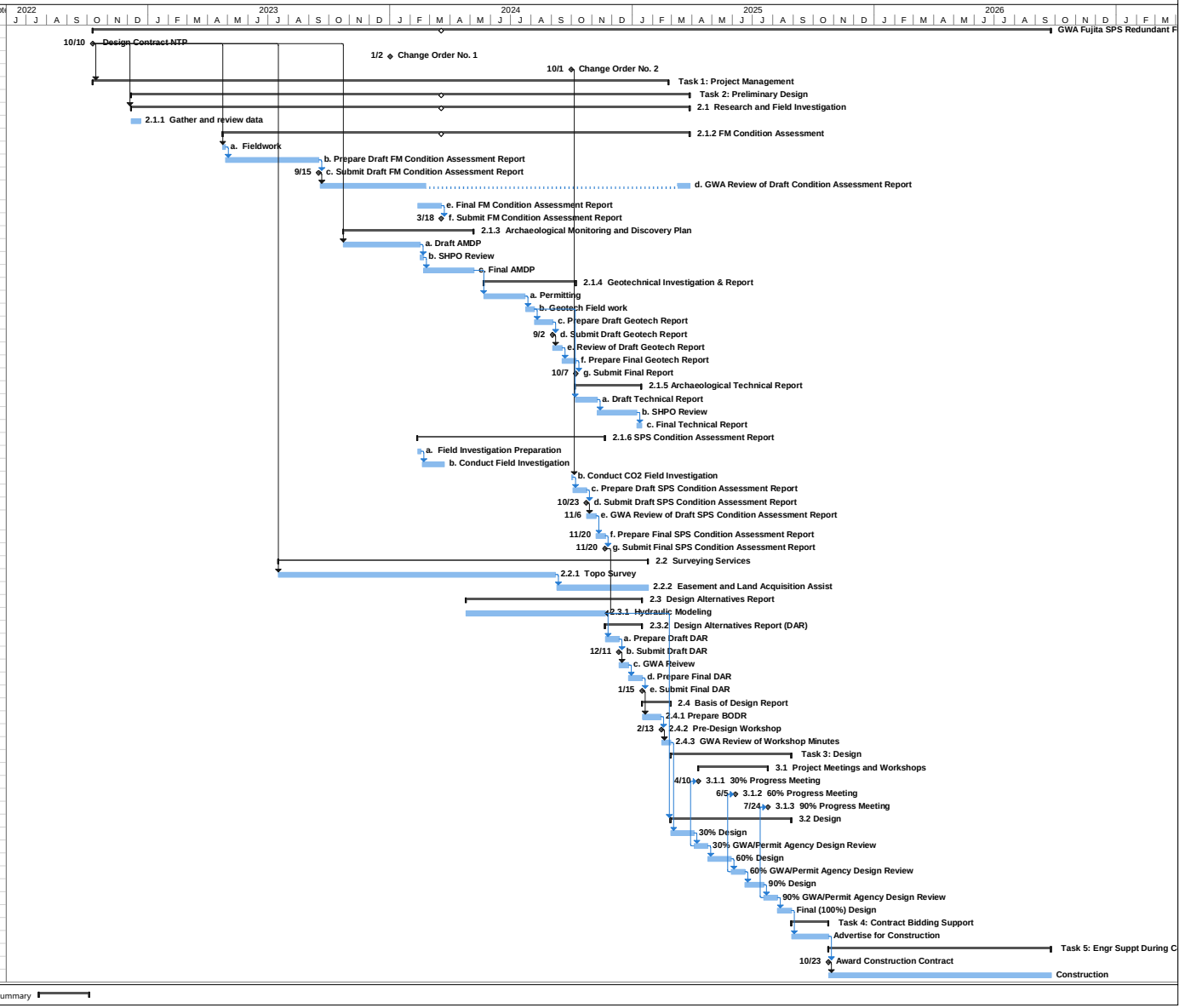
Guam Waterworks Authority
Fujita Sewage Pump Station Redundant Force Main

Appendix E.3 Project Schedule (Revised as of 6/3/24)

ID	Task Name	Duration	Start	Finish	Predecessors	Note
1	**GWA Fujita SPS Redundant FM**	**206.8 wks**	**Mon 10/10/22**	**Thu 9/24/26**		
2	Design Contract NTP	0 days	Mon 10/10/22	Mon 10/10/22		
3	Change Order No. 1	0 days	Tue 1/2/24	Tue 1/2/24		
4	Change Order No. 2	0 days	Tue 10/1/24	Tue 10/1/24		
5	**Task 1: Project Management**	**124.2 wks**	**Mon 10/10/22**	**Mon 2/24/25**	**2**	
8	**Task 2: Preliminary Design**	**120.6 wks**	**Wed 12/7/22**	**Fri 3/28/25**		
9	2.1 Research and Field Investigation	120.6 wks	Wed 12/7/22	Fri 3/28/25	2FS+12 days	
10	2.1.1 Gather and review data	2 wks	Wed 12/7/22	Tue 12/20/22	7	
11	2.1.2 FM Condition Assessment	101 wks	Mon 4/24/23	Fri 3/28/25		
12	a. Fieldwork	4 days	Mon 4/24/23	Thu 4/27/23	2FS+140 days	
13	b. Prepare Draft FM Condition Assessment Report	20.2 wks	Fri 4/28/23	Fri 9/15/23	12	
14	c. Submit Draft FM Condition Assessment Report	0 days	Fri 9/15/23	Fri 9/15/23	13	
15	d. GWA Review of Draft Condition Assessment Report	130 days	Mon 9/18/23	Fri 3/28/25	14	
16	e. Final FM Condition Assessment Report	26 days	Mon 2/12/24	Mon 3/18/24		
17	f. Submit FM Condition Assessment Report	0 days	Mon 3/18/24	Mon 3/18/24	16	
18	2.1.3 Archaeological Monitoring and Discovery Plan	28.2 wks	Mon 10/23/23	Mon 5/6/24		
19	a. Draft AMDP	84 days	Mon 10/23/23	Thu 2/15/24	2FS+270 days	
20	b. SHPO Review	5 edays	Thu 2/15/24	Tue 2/20/24	19	
21	c. Final AMDP	54 days	Wed 2/21/24	Mon 5/6/24	20	
22	2.1.4 Geotechnical Investigation & Report	19.8 wks	Wed 5/22/24	Mon 10/7/24		
23	a. Permitting	44 days	Wed 5/22/24	Mon 7/22/24	21	
24	b. Geotech Field work	9 days	Wed 7/24/24	Mon 8/5/24	23	
25	c. Prepare Draft Geotech Report	20 days	Tue 8/6/24	Mon 9/2/24	24	
26	d. Submit Draft Geotech Report	0 days	Mon 9/2/24	Mon 9/2/24	25	
27	e. Review of Draft Geotech Report	10 days	Tue 9/3/24	Mon 9/16/24	26	
28	f. Prepare Final Geotech Report	15 days	Tue 9/17/24	Mon 10/7/24	27	
29	g. Submit Final Report	0 days	Mon 10/7/24	Mon 10/7/24	28	
30	2.1.5 Archaeological Technical Report	14.4 wks	Mon 10/7/24	Tue 1/14/25		
31	a. Draft Technical Report	25 days	Mon 10/7/24	Fri 11/8/24	24FS+60 edays	
32	b. SHPO Review	60 edays	Fri 11/8/24	Tue 1/7/25	31	
33	c. Final Technical Report	5 days	Wed 1/8/25	Tue 1/14/25	32	
34	2.1.6 SPS Condition Assessment Report	40.6 wks	Mon 2/12/24	Wed 11/20/24		
35	a. Field Investigation Preparation	5 days	Mon 2/12/24	Fri 2/16/24		
36	b. Conduct Field Investigation	25 days	Mon 2/19/24	Fri 3/22/24	35	
37	b. Conduct CO2 Field Investigation	2 days	Tue 10/1/24	Wed 10/2/24	4	
38	c. Prepare Draft SPS Condition Assessment Report	15 days	Thu 10/3/24	Wed 10/23/24	37	
39	d. Submit Draft SPS Condition Assessment Report	0 days	Wed 10/23/24	Wed 10/23/24	38	
40	e. GWA Review of Draft SPS Condition Assessment Report	10 days	Thu 10/24/24	Wed 11/6/24	39	
41	f. Prepare Final SPS Condition Assessment Report	10 days	Thu 11/7/24	Wed 11/20/24	40	
42	g. Submit Final SPS Condition Assessment Report	0 days	Wed 11/20/24	Wed 11/20/24	41	
43	**2.2 Surveying Services**	**80 wks**	**Mon 7/17/23**	**Fri 1/24/25**		
44	2.2.1 Topo Survey	60 wks	Mon 7/17/23	Fri 9/6/24	2FS+200 days	
45	2.2.2 Easement and Land Acquisition Assist	20 wks	Mon 9/9/24	Fri 1/24/25	44	
46	**2.3 Design Alternatives Report**	**38 wks**	**Thu 4/25/24**	**Wed 1/15/25**		
47	2.3.1 Hydraulic Modeling	30 wks	Thu 4/25/24	Wed 11/20/24	42FF	
48	**2.3.2 Design Alternatives Report (DAR)**	**8 wks**	**Thu 11/21/24**	**Wed 1/15/25**		
49	a. Prepare Draft DAR	3 wks	Thu 11/21/24	Wed 12/11/24	47	
50	b. Submit Draft DAR	0 days	Wed 12/11/24	Wed 12/11/24	49	
51	c. GWA Reivew	10 days	Thu 12/12/24	Wed 12/25/24	50	
52	d. Prepare Final DAR	3 wks	Thu 12/26/24	Wed 1/15/25	51	
53	e. Submit Final DAR	0 days	Wed 1/15/25	Wed 1/15/25	52	
54	**2.4 Basis of Design Report**	**6.2 wks**	**Thu 1/16/25**	**Thu 2/27/25**		
55	2.4.1 Prepare BODR	4 wks	Thu 1/16/25	Wed 2/12/25	53	
56	2.4.2 Pre-Design Workshop	0 days	Thu 2/13/25	Thu 2/13/25	55FS+1 day	
57	2.4.3 GWA Review of Workshop Minutes	14 edays	Thu 2/13/25	Thu 2/27/25	56	
58	**Task 3: Design**	**26 wks**	**Fri 2/28/25**	**Thu 8/28/25**		
59	3.1 Project Meetings and Workshops	15 wks	Thu 4/10/25	Thu 7/24/25		
60	3.1.1 30% Progress Meeting	0 days	Thu 4/10/25	Thu 4/10/25	65SS+5 days	
61	3.1.2 60% Progress Meeting	0 days	Thu 6/5/25	Thu 6/5/25	67SS+5 days	
62	3.1.3 90% Progress Meeting	0 days	Thu 7/24/25	Thu 7/24/25	69SS+5 days	
63	3.2 Design	26 wks	Fri 2/28/25	Thu 8/28/25	47	
64	30% Design	5 wks	Fri 2/28/25	Thu 4/3/25	57	
65	30% GWA/Permit Agency Design Review	3 wks	Fri 4/4/25	Thu 4/24/25	64	
66	60% Design	5 wks	Fri 4/25/25	Thu 5/29/25	65	
67	60% GWA/Permit Agency Design Review	3 wks	Fri 5/30/25	Thu 6/19/25	66	
68	90% Design	4 wks	Fri 6/20/25	Thu 7/17/25	67	
69	90% GWA/Permit Agency Design Review	3 wks	Fri 7/18/25	Thu 8/7/25	68	
70	Final (100%) Design	3 wks	Fri 8/8/25	Thu 8/28/25	69	
71	**Task 4: Contract Bidding Support**	**8 wks**	**Fri 8/29/25**	**Thu 10/23/25**		
72	Advertise for Construction	8 wks	Fri 8/29/25	Thu 10/23/25	70	
73	**Task 5: Engr Suppt During Constr**	**48 wks**	**Thu 10/23/25**	**Thu 9/24/26**		
74	Award Construction Contract	0 days	Thu 10/23/25	Thu 10/23/25	72	
75	Construction	48 wks	Fri 10/24/25	Thu 9/24/26	74	



GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building | 688 Route 15, Mangilao, Guam 96913
P.O. Box 3010, Hagåtña, Guam 96932
Tel. No. (671) 300-6846/47 Fax No. (671) 648-3290

Issues for Decision

Resolution No. 37- FY2024
Relative to Approval of Additional Funding for the Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis Project, GWA Project No. 22004

What is the project's objective and is it necessary and urgent?
The Hagatna Wastewater Treatment Plant (WWTP) was constructed in 1975, and receives and treats wastewater from the central villages of Guam, and discharges treated effluent through a deep ocean outfall. Access to the Hagatna WWTP is via the causeway, and although reinforced in prior projects, the three original causeway bridges are in dire need of rehabilitation. Additionally, structural and process issues within the Hagatna WWTP identified as part of engineering assessments need to be addressed.

The project's goal is to assess and design for rehabilitation and repair of the causeway bridges and other process facilities within the Hagatna WWTP, to extend the operation life of the facility. As part of this effort, the assessment, design and, rehabilitation of the clarifiers, headworks, and other mechanical equipment, as well as the installation of the bypass force main across the causeway from the Hagatna Main Sewage Pump Station for Change Order No. 3 is needed.

The designer's proposal for Change Order No. 3 is $116,964.00. A 10% contingency is requested for future change orders, which may include the designer ordering long-lead items prior to a construction contract being awarded.

Where is the location?
The Hagatna WWTP and Causeway are located in Hagatna, next to the Hagatna Boat Basin (see attached map).

How much will it cost?

Original Contract Cost:	$114,820.00
Change Order No. 1	$65,679.00
Change Order No. 2	$761,672.00
Additional Cost for Change Order No. 3	$116,964.00
Contract + change orders:	$1,059,135.00
Ten percent contingency	$105,913.50
Total authorized amount	**$1,165,048.50**

When will it be completed?
The assessment and design are anticipated to be completed in April 2025. Construction procurement will begin upon completion of the design.

What is the funding source?
Wastewater Bond funds applicable to the project.

The RFP/BID responses (if applicable): NA

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. 37-FY2024

RELATIVE TO APPROVAL OF ADDITIONAL FUNDING FOR THE HAGATNA WASTEWATER TREATMENT PLANT CAUSEWAY AND FACILITY STRUCTURAL ANALYSIS PROJECT, GWA PROJECT NO. 22004

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 is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, the Hagatna Wastewater Treatment Plant (WWTP) was constructed in 1975 and receives and treats wastewater from the central villages of Guam, and discharges treated effluent through a deep ocean outfall; and

WHEREAS, access to the Hagatna WWTP is via the causeway, constructed of armor stones and three reinforced concrete culvert bridge crossings that allow circulation of ocean waters within the Hagatna Bay; and

WHEREAS, prior rehabilitation projects reinforced the top sections of the original causeway bridges, but the original structures have been severely compromised, with corrosion of the concrete, and are in dire need of rehabilitation; and

WHEREAS, other structural elements within the Hagatna WWTP were also in need of assessment and rehabilitation; and

WHEREAS, to address these concerns GWA advertised a Request For Proposals on September 25, 2020, and entered into a contract for assessment and design services with Duenas,

Camacho & Associates, Inc., on April 2, 2021, in the amount of One Hundred Fourteen Thousand Eight Hundred Twenty Dollars and Zero Cents ($114,820.00), as shown in Exhibit A; and

WHEREAS, as part of the initial assessment of Hagatna WWTP facility, it was determined an additional need for Architectural, Electrical, and Fire Protection assessment was required and GWA approved Change Order No. 1 for the amount of Sixty-Five Thousand Six Hundred Seventy-Nine Dollars and Zero Cents ($65,679.00), as shown in Exhibit B; and

WHEREAS, the additional assessment determined that interim communication and controls, as well as Supervisory Control And Data Acquisition (SCADA) upgrades needed to be implemented to allow for 24-hour monitoring of the WWTP; and

WHEREAS, to address this need GWA negotiated Change Order No. 2 for the amount of Seven Hundred Sixty-One Thousand Six Hundred Seventy-Two Dollars and Zero Cents ($761,672.00), as shown in Exhibit C; and

WHEREAS, while work and assessment have been ongoing, issues with the clarifiers, headworks, general mechanical equipment, and coordination for additional work along the causeway to add a bypass force main (FM) from the Hagatna Main Sewage Pump Station (SPS) to the headworks of the Hagatna WWTP were needed; and

WHEREAS, challenges exist in keeping the three Hagatna WWTP clarifiers operational, as the concrete within the clarifiers is spalling, and the process equipment, including sludge collection equipment in all three clarifiers, are in need of replacement; and

WHEREAS, additionally, GWA and the United States Environmental Protection Agency (USEPA) recently entered into a Partial Consent Decree (CD) which requires GWA to achieve certain milestones within our wastewater system to eliminate unauthorized discharges, such as Sanitary Sewer Overflows (SSOs); and

WHEREAS, the Hagatna Main SPS assessment and rehabilitation is a high priority of the Consent Decree, and as part of the work required for it, a bypass FM is going to be installed across the causeway leading to the headworks of the Hagatna WWTP; and

WHEREAS, as DCA is completing the assessment and design of the causeway bridges, GWA has also requested they complete the design of the bypass FM across the causeway; and

WHEREAS, to address the clarifiers, process equipment, and the additional design work for the causeway, GWA negotiated Change Order No. 3 for the amount of One Hundred Sixteen Thousand Nine Hundred Sixty-Four Dollars and Zero Cents ($116,964.00), as shown in Exhibit D; and

WHEREAS, the current contract amount as of Change Order No. 2 of Nine Hundred Forty-Two Thousand One Hundred Seventy-One Dollars and Zero Cents ($942,171.00) plus Change Order No. 3 amount of One Hundred Sixteen Thousand Nine Hundred Sixty-Four Dollars and Zero Cents ($116,964.00), brings the new contract amount to One Million Fifty-Nine Thousand One Hundred Thirty-Five Dollars and Zero Cents ($1,059,135.00); and

WHEREAS, given the importance of the rehabilitation of the Hagatna WWTP and the causeway to the WWTP, along with the condensed time frame of the Consent Decree projects, GWA requests a Ten Percent (10%) contingency of One Hundred Five Thousand Nine Hundred Thirteen Dollars and Fifty Cents ($105,913.50); and

WHEREAS, the new contract amount to include the Change Order No. 3 work is One Million Fifty-Nine Thousand One Hundred Thirty-Five Dollars and Zero Cents ($1,059,135.00), plus a Ten Percent (10%) contingency of One Hundred Five Thousand Nine Hundred Thirteen Dollars and Fifty Cents ($105,913.50) will bring the total authorized contract amount to One Million One Hundred Sixty-Five Thousand Forty-Eight Dollars and Fifty Cents ($1,165,048.50); and

WHEREAS, funding for this design project will be from the wastewater bond funds applicable to the project; and

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

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU finds that the requested funding authorization increases to be fair, reasonable, and necessary for the Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis project.
3. The CCU hereby authorizes the management of GWA to execute Change Order No. 3 to the contract with Duenas, Camacho & Associates, Inc., for a total contract amount of One Million Fifty-Nine Thousand One Hundred Thirty-Five Dollars and Zero Cents ($1,059,135.00).
4. The CCU hereby authorizes the total contract cost to include a ten percent (10%) contingency of One Hundred Five Thousand Nine Hundred Thirteen Dollars and Fifty Cents ($105,913.50), increasing the authorized contract amount to One Million One Hundred Sixty-Five Thousand Forty-Eight Dollars and Fifty Cents ($1,165,048.50).
5. The CCU hereby further authorizes the use of wastewater bond funds applicable to the project as the funding source.

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

DULY AND REGULARLY ADOPTED, this 25th day of September 2024.

Certified by:

_____
JOSEPH T. DUENAS
Chairperson

Attested by:

_____
PEDRO ROY MARTINEZ
Secretary

SECRETARY'S CERTIFICATE

I, Pedro Roy Martinez, 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: _____
NAYS: _____
ABSENT: _____
ABSTAIN: _____

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Exhibit A

AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR PROFESSIONAL SERVICES

TABLE OF CONTENTS

AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR PROFESSIONAL SERVICES

THIS IS AN AGREEMENT effective as of April 02, 2021 ("Effective Date") between

Guam Waterworks Authority ("Owner") and

Dueñas, Camacho & Associates Inc. ("Engineer").

Owner's Project, of which Engineer's services under this Agreement are a part, is generally identified as follows:

Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis
GWA Project No. S20-004-BND

Other terms used in this Agreement are defined in Article 7.

Engineer's services under this Agreement are generally identified as follows:

(1) Assess the structural integrity of the causeway for vehicular traffic (to include heavy vehicles such as pumping trucks and construction equipment), pedestrian traffic, as a conveyance for utilities to the WWTP and potentially, a conveyance for a new force main, evaluation of culvert hydraulics; and inspection of vertical members, including underwater inspections.

(2) Assess the structural integrity of WWTP structures: buildings (internal and external, to include walls, ceilings, roofs, stairs, etc.), secondary containment structures, hallways, and overhangs, including concrete and metal structures/components. The clarifiers are **not** included in this project, as they are currently undergoing repairs.

(3) Provide the recommendations (if any) for repairs necessary to meet safety requirements under normal and extreme conditions (including conditions resulting from seismic and large storm events).

(4) If GWA moves forward with repairs/rehabilitation of the causeway and/or WWTP structures, then the project will include the design and plans for repairs/rehabilitation.

Owner and Engineer further agree as follows:

ARTICLE 1 – SERVICES OF ENGINEER

1.01 *Scope*

A. Engineer shall provide, or cause to be provided, the services set forth herein and in Exhibit A.

ARTICLE 2 – OWNER'S RESPONSIBILITIES

2.01 *General*

A. Owner shall have the responsibilities set forth herein and in Exhibit B.

B. Owner shall pay Engineer as set forth in Article 4 and Exhibit C.

C. Owner shall be responsible for all requirements and instructions that it furnishes to Engineer pursuant to this Agreement, and for the accuracy and completeness of all programs, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. Engineer may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items.

D. Owner shall give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of:

1. any development that affects the scope or time of performance of Engineer's services;

2. the presence at the Site of any Constituent of Concern; or

3. any relevant, material defect or nonconformance in: (a) Engineer's services, (b) the Work, (c) the performance of any Constructor, or (d) Owner's performance of its responsibilities under this Agreement.

ARTICLE 3 – SCHEDULE FOR RENDERING SERVICES

3.01 *Commencement*

A. Engineer is authorized to begin rendering services as of the Effective Date.

3.02 *Time for Completion*

A. Engineer shall complete its obligations within a reasonable time. Specific periods of time for rendering services, or specific dates by which services are to be completed, are provided in Exhibit A, and are hereby agreed to be reasonable.

B. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's services is impaired, or Engineer's services are delayed or suspended, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

C. If Owner authorizes changes in the scope, extent, or character of the Project or Engineer's services, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

D. Owner shall make decisions and carry out its other responsibilities in a timely manner so as not to delay the Engineer's performance of its services.

E. If Engineer fails, through its own fault, to complete the performance required in this Agreement within the time set forth, as duly adjusted, then Owner shall be entitled, as its sole remedy, to the recovery of direct damages, if any, resulting from such failure.

ARTICLE 4 – INVOICES AND PAYMENTS

4.01 *Invoices*

A. *Preparation and Submittal of Invoices:* Engineer shall prepare invoices in accordance with its standard invoicing practices and the terms of Exhibit C. Engineer shall submit its invoices to Owner on a monthly basis. Invoices are due and payable within 45 days of receipt.

4.02 *Payments*

A. *Application to Interest and Principal:* Payment will be credited first to any interest owed to Engineer and then to principal.

B. *Failure to Pay*: If Owner fails to make any payment due Engineer for services and expenses within 45 days after receipt of Engineer's invoice, then:

1. amounts due Engineer will be increased at the maximum rate of interest permitted by law from said forty-fifth day; and

2. Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement until Owner has paid in full all amounts due for services, expenses, and other related charges. Owner waives any and all claims against Engineer for any such suspension.

C. *Disputed Invoices:* If Owner disputes an invoice, either as to amount or entitlement, then Owner shall promptly advise Engineer in writing of the specific basis for doing so, may withhold only that portion so disputed, and must pay the undisputed portion subject to the terms of Paragraph 4.01.

D. *Sales or Use Taxes:* If after the Effective Date any governmental entity takes a legislative action that imposes additional sales or use taxes on Engineer's services or compensation under this Agreement, then Engineer may invoice such additional sales or use taxes for reimbursement by Owner. Owner shall reimburse Engineer for the cost of such invoiced additional sales or use taxes; such reimbursement shall be in addition to the compensation to which Engineer is entitled under the terms of Exhibit C.

ARTICLE 5 – OPINIONS OF COST

5.01 *Opinions of Probable Construction Cost*

A. Engineer's opinions (if any) of probable Construction Cost are to be made on the basis of Engineer's experience, qualifications, and general familiarity with the construction industry. However, because Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Owner requires greater assurance as to probable Construction Cost, then Owner agrees to obtain an independent cost estimate.

5.02 *Designing to Construction Cost Limit*

A. If a Construction Cost limit is established between Owner and Engineer, such Construction Cost limit and a statement of Engineer's rights and responsibilities with respect thereto will be specifically set forth in Exhibit F to this Agreement.

5.03 *Opinions of Total Project Costs*

A. The services, if any, of Engineer with respect to Total Project Costs shall be limited to assisting the Owner in tabulating the various categories that comprise Total Project Costs. Engineer assumes no responsibility for the accuracy of any opinions of Total Project Costs.

ARTICLE 6 – GENERAL CONSIDERATIONS

6.01 *Standards of Performance*

A. *Standard of Care:* The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with any services performed or furnished by Engineer.

B. *Technical Accuracy:* Owner shall not be responsible for discovering deficiencies in the technical accuracy of Engineer's services. Engineer shall correct deficiencies in technical accuracy without additional compensation, unless such corrective action is directly attributable to deficiencies in Owner-furnished information.

C. *Consultants:* Engineer may retain such Consultants as Engineer deems necessary to assist in the performance or furnishing of the services, subject to reasonable, timely, and substantive objections by Owner.

D. *Reliance on Others:* Subject to the standard of care set forth in Paragraph 6.01.A, Engineer and its Consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.

E. *Compliance with Laws and Regulations, and Policies and Procedures:*

1. Engineer and Owner shall comply with applicable Laws and Regulations.

2. Engineer shall comply with any and all policies, procedures, and instructions of Owner that are applicable to Engineer's performance of services under this Agreement and that Owner provides to Engineer in writing, subject to the standard of care set forth in Paragraph 6.01.A, and to the extent compliance is not inconsistent with professional practice requirements.

3. This Agreement is based on Laws and Regulations and Owner-provided written policies and procedures as of the Effective Date. The following may be the basis for

modifications to Owner's responsibilities or to Engineer's scope of services, times of performance, or compensation:

a. changes after the Effective Date to Laws and Regulations;

b. the receipt by Engineer after the Effective Date of Owner-provided written policies and procedures;

c. changes after the Effective Date to Owner-provided written policies or procedures.

F. Engineer shall not be required to sign any document, no matter by whom requested, that would result in the Engineer having to certify, guarantee, or warrant the existence of conditions whose existence the Engineer cannot ascertain. Owner agrees not to make resolution of any dispute with the Engineer or payment of any amount due to the Engineer in any way contingent upon the Engineer signing any such document.

G. The general conditions for any construction contract documents prepared hereunder are to be EJCDC® C-700 "Standard General Conditions of the Construction Contract" (2013 Edition), prepared by the Engineers Joint Contract Documents Committee, unless expressly indicated otherwise in Exhibit J or elsewhere in this Agreement.

H. Engineer shall not at any time supervise, direct, control, or have authority over any Constructor's work, nor shall Engineer have authority over or be responsible for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, or the safety precautions and programs incident thereto, for security or safety at the Site, nor for any failure of a Constructor to comply with Laws and Regulations applicable to that Constructor's furnishing and performing of its work. Engineer shall not be responsible for the acts or omissions of any Constructor.

I. Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's, failure to furnish and perform the Work in accordance with the Construction Contract Documents.

J. Engineer shall not be responsible for any decision made regarding the Construction Contract Documents, or any application, interpretation, clarification, or modification of the Construction Contract Documents, other than those made by Engineer or its Consultants.

K. Engineer is not required to provide and does not have any responsibility for surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements.

L. Engineer's services do not include providing legal advice or representation.

M. Engineer's services do not include (1) serving as a "municipal advisor" for purposes of the registration requirements of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission, or (2) advising Owner, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of

municipal securities, including advice with respect to the structure, timing, terms, or other similar matters concerning such products or issuances.

N. While at the Site, Engineer, its Consultants, and their employees and representatives shall comply with the applicable requirements of Contractor's and Owner's safety programs of which Engineer has been informed in writing.

6.02 *Design Without Construction Phase Services*

A. Engineer shall be responsible only for those Construction Phase services expressly required of Engineer in Exhibit A, Paragraph A1.05. With the exception of such expressly required services, Engineer shall have no design, Shop Drawing review, or other obligations during construction, and Owner assumes all responsibility for the application and interpretation of the Construction Contract Documents, review and response to Contractor claims, Construction Contract administration, processing of Change Orders and submittals, revisions to the Construction Contract Documents during construction, construction observation and review, review of Contractor's payment applications, and all other necessary Construction Phase administrative, engineering, and professional services. Owner waives all claims against the Engineer that may be connected in any way to Construction Phase administrative, engineering, or professional services except for those services that are expressly required of Engineer in Exhibit A.

6.03 *Use of Documents*

A. All Documents are instruments of service, and Engineer shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the Engineer) whether or not the Project is completed.

B. If Engineer is required to prepare or furnish Drawings or Specifications under this Agreement, Engineer shall deliver to Owner at least one original printed record version of such Drawings and Specifications, signed and sealed according to applicable Laws and Regulations.

C. Owner may make and retain copies of Documents for information and reference in connection with the use of the Documents on the Project. Engineer grants Owner a limited license to use the Documents on the Project, extensions of the Project, and for related uses of the Owner, subject to receipt by Engineer of full payment due and owing for all services relating to preparation of the Documents, and subject to the following limitations: (1) Owner acknowledges that such Documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project, on any other project, or for any other use or purpose, without written verification or adaptation by Engineer; (2) any such use or reuse, or any modification of the Documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Owner's sole risk and without liability or legal exposure to Engineer or to its officers, directors, members, partners, agents, employees, and Consultants; (3) Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from any use, reuse, or modification of

the Documents without written verification, completion, or adaptation by Engineer; and (4) such limited license to Owner shall not create any rights in third parties.

D. If Engineer at Owner's request verifies the suitability of the Documents, completes them, or adapts them for extensions of the Project or for any other purpose, then Owner shall compensate Engineer at rates or in an amount to be agreed upon by Owner and Engineer.

6.04 *Electronic Transmittals*

A. Owner and Engineer may transmit, and shall accept, Project-related correspondence, Documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol.

B. If this Agreement does not establish protocols for electronic or digital transmittals, then Owner and Engineer shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

6.05 *Insurance*

A. Engineer shall procure and maintain insurance as set forth in Exhibit G. Engineer shall cause Owner to be listed as an additional insured on any applicable general liability insurance policy carried by Engineer.

B. Owner shall procure and maintain insurance as set forth in Exhibit G. Owner shall cause Engineer and its Consultants to be listed as additional insureds on any general liability policies carried by Owner, which are applicable to the Project.

C. Owner shall require Contractor to purchase and maintain policies of insurance covering workers' compensation, general liability, motor vehicle damage and injuries, and other insurance necessary to protect Owner's and Engineer's interests in the Project. Owner shall require Contractor to cause Engineer and its Consultants to be listed as additional insureds with respect to such liability insurance purchased and maintained by Contractor for the Project.

D. Owner and Engineer shall each deliver to the other certificates of insurance evidencing the coverages indicated in Exhibit G. Such certificates shall be furnished prior to commencement of Engineer's services and at renewals thereafter during the life of the Agreement.

E. All policies of property insurance relating to the Project, including but not limited to any builder's risk policy, shall allow for waiver of subrogation rights and contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insured thereunder or against Engineer or its Consultants. Owner and Engineer waive all rights against each other, Contractor, the Consultants, and

the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by any builder's risk policy and any other property insurance relating to the Project. Owner and Engineer shall take appropriate measures in other Project-related contracts to secure waivers of rights consistent with those set forth in this paragraph.

F. All policies of insurance shall contain a provision or endorsement that the coverage afforded will not be canceled or reduced in limits by endorsement, and that renewal will not be refused, until at least 10 days prior written notice has been given to the primary insured. Upon receipt of such notice, the receiving party shall promptly forward a copy of the notice to the other party to this Agreement.

G. At any time, Owner may request that Engineer or its Consultants, at Owner's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in Exhibit G. If so requested by Owner, and if commercially available, Engineer shall obtain and shall require its Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods of time as requested by Owner, and Exhibit G will be supplemented to incorporate these requirements.

6.06 *Suspension and Termination*

A. *Suspension:*

1. *By Owner*: Owner may suspend the Project for up to 90 days upon seven days written notice to Engineer.

2. *By Engineer*: Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement if Owner has failed to pay Engineer for invoiced services and expenses, as set forth in Paragraph 4.02.B, or in response to the presence of Constituents of Concern at the Site, as set forth in Paragraph 6.10.D.

B. *Termination*: The obligation to provide further services under this Agreement may be terminated:

1. For cause,

a. by either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

b. by Engineer:

1) upon seven days written notice if Owner demands that Engineer furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or

2) upon seven days written notice if the Engineer's services for the Project are delayed or suspended for more than 90 days for reasons beyond Engineer's

control, or as the result of the presence at the Site of undisclosed Constituents of Concern, as set forth in Paragraph 6.10.D.

3) Engineer shall have no liability to Owner on account of such termination.

c. Notwithstanding the foregoing, this Agreement will not terminate under Paragraph 6.06.B.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its substantial failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

2. For convenience, by Owner effective upon Engineer's receipt of notice from Owner.

C. *Effective Date of Termination:* The terminating party under Paragraph 6.06.B may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

D. *Payments Upon Termination:*

1. In the event of any termination under Paragraph 6.06, Engineer will be entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all Reimbursable Expenses incurred through the effective date of termination. Upon making such payment, Owner shall have the limited right to the use of Documents, at Owner's sole risk, subject to the provisions of Paragraph 6.03.

2. In the event of termination by Owner for convenience or by Engineer for cause, Engineer shall be entitled, in addition to invoicing for those items identified in Paragraph 6.06.D.1, to invoice Owner and receive payment of a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as reassignment of personnel, costs of terminating contracts with Engineer's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in Exhibit C.

6.07 *Controlling Law*

A. This Agreement is to be governed by the Laws and Regulations of the state in which the Project is located.

6.08 *Successors, Assigns, and Beneficiaries*

A. Owner and Engineer are hereby bound and the successors, executors, administrators, and legal representatives of Owner and Engineer (and to the extent permitted by Paragraph 6.08.B the assigns of Owner and Engineer) are hereby bound to the other party to this

Agreement and to the successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.

B. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, money that is due or may become due) in this Agreement without the written consent of the other party, except to the extent that any assignment, subletting, or transfer is mandated by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

C. Unless expressly provided otherwise in this Agreement:

1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by Owner or Engineer to any Constructor, other third-party individual or entity, or to any surety for or employee of any of them.

2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.

3. Owner agrees that the substance of the provisions of this Paragraph 6.08.C shall appear in the Construction Contract Documents.

6.09 *Dispute Resolution*

A. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to invoking the procedures of Exhibit H or other provisions of this Agreement, or exercising their rights at law.

B. If the parties fail to resolve a dispute through negotiation under Paragraph 6.09.A, then either or both may invoke the procedures of Exhibit H. If Exhibit H is not included, or if no dispute resolution method is specified in Exhibit H, then the parties may exercise their rights at law.

6.10 *Environmental Condition of Site*

A. Owner represents to Engineer that as of the Effective Date to the best of Owner's knowledge no Constituents of Concern, other than those disclosed in writing to Engineer, exist at or adjacent to the Site.

B. If Engineer encounters or learns of an undisclosed Constituent of Concern at the Site, then Engineer shall notify (1) Owner and (2) appropriate governmental officials if Engineer reasonably concludes that doing so is required by applicable Laws or Regulations.

C. It is acknowledged by both parties that Engineer's scope of services does not include any services related to unknown or undisclosed Constituents of Concern. If Engineer or any other party encounters, uncovers, or reveals an undisclosed Constituent of Concern, then Owner shall promptly determine whether to retain a qualified expert to evaluate such condition or take any necessary corrective action.

D. If investigative or remedial action, or other professional services, are necessary with respect to undisclosed Constituents of Concern, or if investigative or remedial action beyond that reasonably contemplated is needed to address a disclosed or known Constituent of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until such portion of the Project is no longer affected.

E. If the presence at the Site of undisclosed Constituents of Concern adversely affects the performance of Engineer's services under this Agreement, then the Engineer shall have the option of (1) accepting an equitable adjustment in its compensation or in the time of completion, or both; or (2) terminating this Agreement for cause on seven days notice.

F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "owner," "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement.

6.11 *Indemnification and Mutual Waiver*

A. *Indemnification by Engineer:* To the fullest extent permitted by Laws and Regulations, Engineer shall indemnify and hold harmless Owner, and Owner's officers, directors, members, partners, agents, consultants, and employees, from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from third-party claims or actions relating to the Project, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants. **This indemnification provision is subject to and limited by the provisions, if any, agreed to by Owner and Engineer in Exhibit I, "Limitations of Liability."**

B. *Indemnification by Owner:* Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants as required by Laws and Regulations **and to the extent (if any) required in Exhibit I, "Limitations of Liability."**

C. *Environmental Indemnification:* To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, costs, losses, damages, actions, and judgments (including reasonable consultants' and attorney's fees and expenses) caused by, arising out of, relating to, or resulting from a Constituent of Concern at, on, or under the Site, provided that (1) any such claim, cost, loss, damages, action, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (2) nothing in this paragraph shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.

D. *No Defense Obligation:* The indemnification commitments in this Agreement do not include a defense obligation by the indemnitor unless such obligation is expressly stated.

E. *Percentage Share of Negligence:* To the fullest extent permitted by Laws and Regulations, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, and all other negligent entities and individuals.

F. *Mutual Waiver:* To the fullest extent permitted by Laws and Regulations, Owner and Engineer waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes.

6.12 *Records Retention*

A. Engineer shall maintain on file in legible form, for a period of five years following completion or termination of its services, all Documents, records (including cost records), and design calculations related to Engineer's services or pertinent to Engineer's performance under this Agreement. Upon Owner's request, Engineer shall provide a copy of any such item to Owner at cost.

6.13 *Miscellaneous Provisions*

A. *Notices:* Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

B. *Survival:* All express representations, waivers, indemnifications, and limitations of liability included in this Agreement will survive its completion or termination for any reason.

C. *Severability:* Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Engineer, which agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

D. *Waiver:* A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

E. *Accrual of Claims:* To the fullest extent permitted by Laws and Regulations, all causes of action arising under this Agreement shall be deemed to have accrued, and all statutory periods of limitation shall commence, no later than the date of Substantial Completion.

ARTICLE 7 – DEFINITIONS

7.01 *Defined Terms*

A. Wherever used in this Agreement (including the Exhibits hereto) terms (including the singular and plural forms) printed with initial capital letters have the meanings indicated in the text above, in the exhibits, or in the following definitions:

1. *Addenda*—Written or graphic instruments issued prior to the opening of bids which clarify, correct, or change the bidding requirements or the proposed Construction Contract Documents.

2. *Additional Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 2 of Exhibit A of this Agreement.

3. *Agreement*—This written contract for professional services between Owner and Engineer, including all exhibits identified in Paragraph 8.01 and any duly executed amendments.

4. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Construction Contract.

5. *Basic Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 1 of Exhibit A of this Agreement.

6. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Construction Contract Price or the Construction Contract Times, or other revision to the Construction Contract, issued on or after the effective date of the Construction Contract.

7. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth in the Construction Contract, seeking an adjustment in Construction Contract Price or Construction Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Construction Contract Documents or the acceptability of Work under the Construction Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Construction Contract.

8. *Constituent of Concern*—Asbestos, petroleum, radioactive material, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, State, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or

standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

9. *Construction Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.

10. *Construction Contract Documents*—Those items designated as "Contract Documents" in the Construction Contract, and which together comprise the Construction Contract.

11. *Construction Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Construction Contract Documents.

12. *Construction Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve milestones, if any, in the Construction Contract; (b) achieve Substantial Completion; and (c) complete the Work.

13. *Construction Cost*—The cost to Owner of the construction of those portions of the entire Project designed or specified by or for Engineer under this Agreement, including construction labor, services, materials, equipment, insurance, and bonding costs, and allowances for contingencies. Construction Cost does not include costs of services of Engineer or other design professionals and consultants; cost of land or rights-of-way, or compensation for damages to property; Owner's costs for legal, accounting, insurance counseling, or auditing services; interest or financing charges incurred in connection with the Project; or the cost of other services to be provided by others to Owner. Construction Cost is one of the items comprising Total Project Costs.

14. *Constructor*—Any person or entity (not including the Engineer, its employees, agents, representatives, and Consultants), performing or supporting construction activities relating to the Project, including but not limited to Contractors, Subcontractors, Suppliers, Owner's work forces, utility companies, other contractors, construction managers, testing firms, shippers, and truckers, and the employees, agents, and representatives of any or all of them.

15. *Consultants*—Individuals or entities having a contract with Engineer to furnish services with respect to this Project as Engineer's independent professional associates and consultants; subcontractors; or vendors.

16. *Contractor*—The entity or individual with which Owner enters into a Construction Contract.

17. *Documents*—Data, reports, Drawings, Specifications, Record Drawings, building information models, civil integrated management models, and other deliverables, whether in printed or electronic format, provided or furnished in appropriate phases by Engineer to Owner pursuant to this Agreement.

18. *Drawings*—That part of the Construction Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date*—The date indicated in this Agreement on which it becomes effective, but if no such date is indicated, the date on which this Agreement is signed and delivered by the last of the parties to sign and deliver.

20. *Engineer*—The individual or entity named as such in this Agreement.

21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Construction Contract Price or the Construction Contract Times.

22. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

23. *Owner*—The individual or entity named as such in this Agreement and for which Engineer's services are to be performed. Unless indicated otherwise, this is the same individual or entity that will enter into any Construction Contracts concerning the Project.

24. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the services to be performed or furnished by Engineer under this Agreement are a part.

25. *Record Drawings*—Drawings depicting the completed Project, or a specific portion of the completed Project, prepared by Engineer as an Additional Service and based on Contractor's record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications, as delivered to Engineer and annotated by Contractor to show changes made during construction.

26. *Reimbursable Expenses*—The expenses incurred directly by Engineer in connection with the performing or furnishing of Basic Services and Additional Services for the Project.

27. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site during the Construction Phase. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative. The duties and responsibilities of the Resident Project Representative, if any, are as set forth in Exhibit D.

28. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

29. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Construction Contract Documents.

30. *Site*—Lands or areas to be indicated in the Construction Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

31. *Specifications*—The part of the Construction Contract Documents that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

32. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

33. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Construction Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

34. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

35. *Total Project Costs*—The total cost of planning, studying, designing, constructing, testing, commissioning, and start-up of the Project, including Construction Cost and all other Project labor, services, materials, equipment, insurance, and bonding costs, allowances for contingencies, and the total costs of services of Engineer or other design professionals and consultants, together with such other Project-related costs that Owner furnishes for inclusion, including but not limited to cost of land, rights-of-way, compensation for damages to properties, Owner's costs for legal, accounting, insurance counseling, and auditing services, interest and financing charges incurred in connection with the Project, and the cost of other services to be provided by others to Owner.

36. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Construction Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Construction Contract Documents.

37. *Work Change Directive*—A written directive to Contractor issued on or after the effective date of the Construction Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

B. *Day*:

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

ARTICLE 8 – EXHIBITS AND SPECIAL PROVISIONS

8.01 *Exhibits Included:*

A. Exhibit A, Engineer's Services.

B. Exhibit B, Owner's Responsibilities.

C. Exhibit C, Payments to Engineer for Services and Reimbursable Expenses.

D. Exhibit D, Incorporated Guam Procurement Law Clauses.

E. Exhibit E, Notice of Acceptability of Work.

F. Exhibit F, DELETED.

G. Exhibit G, Insurance.

H. Exhibit H, Dispute Resolution.

I. Exhibit I, Limitations of Liability.

J. Exhibit J, DELETED.

K. Exhibit K, Amendment to Owner-Engineer Agreement.

8.02 *Total Agreement*

A. This Agreement, (together with the exhibits included above) constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a written instrument duly executed by both parties. Amendments should be based whenever possible on the format of Exhibit K to this Agreement.

8.03 *Designated Representatives*

A. With the execution of this Agreement, Engineer and Owner shall designate specific individuals to act as Engineer's and Owner's representatives with respect to the services to be performed or furnished by Engineer and responsibilities of Owner under this Agreement. Such an individual shall have authority to transmit instructions, receive information, and render decisions relative to this Agreement on behalf of the respective party whom the individual represents.

8.04 *Engineer's Certifications*

A. Engineer certifies that it has not engaged in corrupt, fraudulent, or coercive practices in competing for or in executing the Agreement. For the purposes of this Paragraph 8.04:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the selection process or in the Agreement execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the selection process or the execution of the Agreement to the detriment of Owner, or (b) to deprive Owner of the benefits of free and open competition;

3. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the selection process or affect the execution of the Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

Owner: **Guam Waterworks Authority**

By: _____ For

Print name: **MIGUEL C. BORDALLO, P.E.**

Title: General Manager

Date Signed: 04/02/2021

Engineer: **Duenas, Camacho & Associates Inc.**

By: _____

Print name: **THOMAS P. CAMACHO, SE**

Title: Executive Vice President

Date Signed: 2-22-21

Engineer License or Firm's Certificate No.: 252

State of: Territory of Guam

Address for Owner's receipt of notices:
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, Guam 96913

Address for Engineer's receipt of notices:
238 E. Marine Corps Drive
Suite 201 Diamond Plaza
Hagatña, Guam 96910

Certified Funds Available:

By: _____

TALING M. TAITANO, CPA, CGFM
GWA Chief Financial Officer

Date Signed: 4/1/2021

Approved as to Form:

By: _____

KELLY O. CLARK
GWA General Counsel

Date Signed: 4/1/21

Contract Amount: $114,820.00

Contingency: $ -0-

Amount Certified: $114,820.00

Source of Funding: GWA Bond MP-Gen-Misc-05

(GWA Infrastructure Improvements)

This is **EXHIBIT A**, consisting of ___ pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____.

Engineer's Services

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below in the Scope of Work dated December 31, 2020.

This is **EXHIBIT B**, consisting of 3 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____.

Owner's Responsibilities

Article 2 of the Agreement is supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:

A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations.

B. Give instructions to Engineer regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Furnish copies (or give specific directions requesting Engineer to use copies already in Engineer's possession) of all design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents and content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and draft Construction Contract Documents, when applicable. Owner shall have responsibility for the final content of (1) such bidding-related documents (or requests for proposals or other construction procurement documents), and (2) those portions of any Construction Contract other than the design (as set forth in the Drawings, Specifications, or otherwise), and other engineering or technical matters; and Owner shall seek the advice of Owner's legal counsel, risk managers, and insurance advisors with respect to the drafting and content of such documents.

C. Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, construction, or investigation at or adjacent to the Site.

D. Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, obtain, furnish, or otherwise make available (if necessary through title searches, or retention of specialists or consultants) such additional Project-related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Such additional information or data would generally include the following:

1. Property descriptions.

2. Zoning, deed, and other land use restrictions.

3. Utility and topographic mapping and surveys.

4. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.

5. Explorations and tests of subsurface conditions at or adjacent to the Site; geotechnical reports and investigations; drawings of physical conditions relating to existing surface or subsurface structures at the Site; hydrographic surveys, laboratory tests and inspections of samples, materials, and equipment; with appropriate professional interpretation of such information or data.

6. Environmental assessments, audits, investigations, and impact statements, and other relevant environmental, historical, or cultural studies relevant to the Project, the Site, and adjacent areas.

7. Data or consultations as required for the Project but not otherwise identified in this Agreement.

E. Arrange for safe access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services under the Agreement.

F. Recognizing and acknowledging that Engineer's services and expertise do not include the following services, provide, as required for the Project:

1. Accounting, bond and financial advisory (including, if applicable, “municipal advisor” services as described in Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) and the municipal advisor registration rules issued by the Securities and Exchange Commission), independent cost estimating, and insurance counseling services.

2. Legal services with regard to issues pertaining to the Project as Owner requires, Contractor raises, or Engineer reasonably requests.

3. Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the money paid.

G. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of samples, materials, and equipment required by the Construction Contract Documents (other than those required to be furnished or arranged by Contractor), or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof. Provide Engineer with the findings and reports generated by testing laboratories, including findings and reports obtained from or through Contractor.

H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.

I. Advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructability review.

J. If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.

K. If more than one prime contract is to be awarded for the Work designed or specified by Engineer, then designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this Exhibit B that is to be mutually agreed upon and made a part of this Agreement before such services begin.

L. Inform Engineer in writing of any specific requirements of safety or security programs that are applicable to Engineer, as a visitor to the Site.

M. Examine all alternative solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, risk manager, insurance counselor, financial/municipal advisor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.

N. Inform Engineer regarding any need for assistance in evaluating the possible use of Project Strategies, Technologies, and Techniques, as defined in Exhibit A.

O. Advise Engineer as to whether Engineer's assistance is requested in identifying opportunities for enhancing the sustainability of the Project.

P. Place and pay for advertisement for Bids in appropriate publications.

Q. Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.

R. Attend and participate in the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings, and Site visits to determine Substantial Completion and readiness of the completed Work for final payment.

S. Authorize Engineer to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement, as required.

This is **EXHIBIT C**, consisting of 1 page, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated _____.

Payments to Engineer for Services and Reimbursable Expenses
COMPENSATION PACKET BC-1: Basic Services – Lump Sum

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER'S RESPONSIBILITIES

C2.01 *Compensation for Basic Design Services – Lump Sum Method of Payment*

A. Owner shall pay Engineer for Basic Design Services set forth in Exhibit A as follows:

1. A Lump Sum amount of $114,820.00 based on the following estimated distribution of compensation:

See attached Design Fee Proposal, December 31, 2020.

Engineer may alter the distribution of compensation between individual phases noted herein to be consistent with services actually rendered, but shall not exceed the total Lump Sum amount unless approved in writing by the Owner.

2. The Lump Sum includes compensation for Engineer's services and services of Engineer's Consultants, if any. Appropriate amounts have been incorporated in the Lump Sum to account for labor costs, overhead, profit, expenses (other than any expressly allowed Reimbursable Expenses), and Consultant charges.

3. The portion of the Lump Sum amount billed for Engineer's services will be based upon Engineer's estimate of the percentage of the total services actually completed during the billing period.

4. The basis of any adjustment under this Article may include at the request of the Owner, cost and pricing data pursuant to 2 GAR §3118 and will also be subject to 2 GAR § 5107 Fiscal Responsibility.

A. *Period of Service:* The compensation amount stipulated in Compensation Packet BC-1 is conditioned on a period of service not exceeding _____months. If such period of service is extended, the compensation amount for Engineer's services shall be appropriately adjusted.

Payments to Engineer for Services and Reimbursable Expenses
COMPENSATION PACKET BC-2: Basic Services – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER'S RESPONSIBILITIES

C2.01 *Compensation For Basic Post-Design Services – Standard Hourly Rates Method of Payment*

A. Owner shall pay Engineer for Basic Post-Design Services set forth in Exhibit A as follows:

1. An amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and Engineer's Consultants' charges, if any.

2. The Standard Hourly Rates charged by Engineer constitute full and complete compensation for Engineer's services, including labor costs, overhead, and profit; the Standard Hourly Rates do not include Reimbursable Expenses or Engineer's Consultants' charges.

3. Engineer's Standard Hourly Rates are attached to this Exhibit as _____Project Team Hourly Rates.

4. The total compensation for services under Paragraph C2.01 is estimated to be $114,820.00 based on the following estimated distribution of compensation:

   a. See attached Revised Design Fee Proposal, December 31, 2020 .

5. Engineer may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total estimated compensation amount unless approved in writing by Owner.

6. The total estimated compensation for Engineer's services included in the breakdown by phases as noted in Paragraph C2.01.A.3 incorporates all labor, overhead, profit, Reimbursable Expenses, and Engineer's Consultants' charges.

7. The amounts billed for Engineer's services under Paragraph C2.01 will be based on the cumulative hours charged to the Project during the billing period by each class of Engineer's employees times Standard Hourly Rates for each applicable billing class, plus Reimbursable Expenses and Engineer's Consultants' charges.

C2.02 *Compensation For Reimbursable Expenses*

A. Owner shall pay Engineer for all Reimbursable Expenses.

B. Reimbursable Expenses include the following: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.

C. The amounts payable to Engineer for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a factor of 1.0.

C2.03 *Estimated Compensation Amounts:*

1. Engineer's estimate of the amounts that will become payable for specified services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to Engineer under the Agreement.

2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that the total compensation amount thus estimated will be exceeded, Engineer shall give Owner written notice thereof, allowing Owner to consider its options, including suspension or termination of Engineer's services for Owner's convenience. Upon notice, Owner and Engineer promptly shall review the matter of services remaining to be performed and compensation for such services. Owner shall either exercise its right to suspend or terminate Engineer's services for Owner's convenience, agree to such compensation exceeding said estimated amount, or agree to a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Owner decides not to suspend the Engineer's services during the negotiations and Engineer exceeds the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services, then Engineer shall be paid for all services rendered hereunder.

D. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

This is **EXHIBIT D has been deleted.**

This is **EXHIBIT E**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____.

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

NOTICE OF ACCEPTABILITY OF WORK

PROJECT: **Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis**
GWA Project No. S20-004-BND

OWNER: **Guam Waterworks Authority**

CONTRACTOR:

OWNER'S CONSTRUCTION CONTRACT IDENTIFICATION:

EFFECTIVE DATE OF THE CONSTRUCTION CONTRACT:

ENGINEER:
NOTICE DATE:

To: _____
Owner

And To: _____
Contractor

From: _____
Engineer

The Engineer hereby gives notice to the above Owner and Contractor that Engineer has recommended final payment of Contractor, and that the Work furnished and performed by Contractor under the above Construction Contract is acceptable, expressly subject to the provisions of the related Contract Documents, the Agreement between Owner and Engineer for Professional Services dated _____, and the following terms and conditions of this Notice:

CONDITIONS OF NOTICE OF ACCEPTABILITY OF WORK

The Notice of Acceptability of Work ("Notice") is expressly made subject to the following terms and conditions to which all those who receive said Notice and rely thereon agree:

1. This Notice is given with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

2. This Notice reflects and is an expression of the Engineer's professional opinion.

3. This Notice is given as to the best of Engineer's knowledge, information, and belief as of the Notice Date.

4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor's work) under Engineer's Agreement with Owner, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Agreement.

5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the related Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Construction Contract Documents, or to otherwise comply with the Construction Contract Documents or the terms of any special guarantees specified therein.

6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

By: _____

Title: _____

Dated: _____

EXHIBIT F has been DELETED.

This is **EXHIBIT G**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____.

Insurance

Paragraph 6.05 of the Agreement is supplemented to include the following agreement of the parties:

G6.05 *Insurance*

A. The limits of liability for the insurance required by Paragraph 6.05.A of the Agreement are as follows:

1. By Engineer:

a.	Workers' Compensation:	Statutory
b.	Employer's Liability:	
	Bodily Injury, each accident:	$100,000
	Bodily injury by disease, each employee:	$100,000
	Bodily injury/disease, aggregate:	$200,000
c.	General Liability --	
	1) Each Occurrence (Bodily Injury and Property Damage):	$1,000,000
	2) General Aggregate:	$2,000,000
d.	Excess or Umbrella Liability	
	Per Occurrence:	$2,000,000
	General Aggregate:	$4,000,000
e.	Automobile Liability --Combined Single Limit (Bodily Injury and Property Damage):	$ 500,000
f.	Professional Liability :	
	Each Claim Made	$2,000,000
	Annual Aggregate	$4,000,000

To maintain, and cause to maintain throughout the life of the contract and up until the project is completely constructed, insurance for the Engineer and the named subs-consultants, in the amounts and types specified below which name Guam Waterworks Authority as an additional insured for the project in a separate endorsement:

1.

2.

3.

B. *Additional Insureds:*

1. The following individuals or entities are to be listed on Engineer's general liability policies of insurance as additional insureds:

Guam Waterworks Authority

2. The Owner shall be listed on Engineer's general liability policy as provided in Paragraph 6.05.B.

This is **EXHIBIT H**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services**
dated _____.

Dispute Resolution

Paragraph 6.09 of the Agreement is supplemented to include the following agreement of the parties:

H6.09 Mediation, Decision and Action

A. In the event a claim or controversy is not resolved by mutual agreement, the GWA General Manager shall, after written request by the Contractor for a final decision, promptly issue a written decision. A copy of the decision shall be immediately transmitted to the Contractor by a method that provides evidence of receipt.

B. All claims or controversies that remain unresolved after a final decision by the GWA General Manager shall be submitted to mediation in accordance with the rules of the American Arbitration Association, or other dispute resolution rules accredited on Guam. This agreement to mediate is authorized under 5 GCA §5427 (b) and 2 GAR §9103 (a)(1). The parties shall each pay one-half of the mediation expenses.

C. In the event mediation is not successful, the General Manager's decision remains final and conclusive unless the Contractor files an appeal with the Guam Office of Public Accountability ("OPA") after receipt of the decision. Upon written request by the Contractor, the 60-day appeal period may be extended for a mutually agreed upon tolling period to allow for mediation after the final decision. In the event the dispute is not resolved by the OPA, the Contractor may seek redress through the Guam Government Claims Act and/or the Guam Superior Court.

This is **EXHIBIT I**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____.

Limitations of Liability

Paragraph 6.11 of the Agreement is supplemented to include the following agreement of the parties:

A. *Limitation of Engineer's Liability*

1. *Engineer's Liability Limited to Stated Amount, or Amount of Engineer's Compensation:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all injuries, claims, losses, expenses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project, Engineer's or its Consultants' services. or this Agreement, from any cause or causes whatsoever, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants, shall not exceed the total amount of $_____ or the total compensation received by Engineer under this Agreement, whichever is greater. Higher limits are available for an additional fee.

2. *Exclusion of Special, Incidental, Indirect, and Consequential Damages:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision in the Agreement, consistent with the terms of Paragraph 6.11, the Engineer and Engineer's officers, directors, members, partners, agents, Consultants, and employees shall not be liable to Owner or anyone claiming by, through, or under Owner for any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes, including but not limited to:

B. *Indemnification by Owner*: To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to the Project, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Owner or Owner's officers, directors, members, partners, agents, employees, consultants, or others retained by or under contract to the Owner with respect to this Agreement or to the Project.

EXHIBIT J has been DELETED.

This is **EXHIBIT K**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____.

AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. 00

The Effective Date of this Amendment is: _____.

Background Data

Owner: Guam Waterworks Authority

Engineer: Dueñas, Camacho & Associates Inc.

Project: Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis
GWA Project No. S20-004-BND

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

____ Additional Services to be performed by Engineer

____ Modifications to services of Engineer

____ Modifications to responsibilities of Owner

____ Modifications of payment to Engineer

____ Modifications to time(s) for rendering services

___ Modifications to other terms and conditions of the Agreement

Description of Modifications:

Incorporated Guam Procurement Law Clauses

Article 6.07 of the Agreement is supplemented to include the following agreement of the parties:

B. Engineer hereby warrants that it will abide by 5 GCA Section 5630 prohibiting gratuities, kickbacks and favors in relation to the solicitation and execution of this Contract.

C. Engineer hereby warrants that it has not retained any person or entity to solicit or secure this Contract, or paid a contingent fee, commission or brokerage fee as proscribed in 5 GCA Section 5631(a).

D. Engineer hereby warrants that it has not knowingly influence a government employee to breach any of the ethical standards set forth in 5 GCA Chapter 5 Article 11 and in Chapter 11 of the Guam Procurement Regulations.

E. Engineer hereby warrants that no person, providing services on behalf of the Engineer has been convicted of a sex offense under the provisions of Chapter of Title 9 GCA or any offense as defined

in Article 2 of Chapter 28, Title 9 GCA; and should any person providing services on behalf of the Engineer be convicted during the course of this Contract, such person shall be immediately removed from GWA projects and GWA will be informed of the conviction within twenty-four (24) hours.

Agreement Summary:

Original agreement amount:	$_____
Net change for prior amendments:	$_____
This amendment amount:	$_____
Adjusted Agreement amount:	$_____

Change in time for services (days or date, as applicable): _____

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:	ENGINEER:
Guam Waterworks Authority	
By:	By:
Print name: MIGUEL C. BORDALLO, P.E.	Print name:
Title: General Manager	Title:
Date Signed:	Date Signed:

DUEÑAS · CAMACHO & Associates, Inc

Website: www.dcaguam.com
Email: dca@dcaguam.com

December 31, 2020

MIGUEL C. BORDALLO,P.E. - General Manager
GUAM WATERWORKS AUTHORITY
Gloria b. nelson Public Service Building
Mangilao, Guam 96913

Attention: **Mauryn McDonald, P.E.**
Wastewater CIP Supervisor
Guam Waterworks Authority

Subject: **GWA RFP-08-ENG, Design of Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis, GWA Project No. S20-004-BND**

Ref: **Phase 1: Structural Assessment of the Causeway Bridges and Building Structures within the Hagatna Wastewater Treatment Plant Facility**

Hafa Adai Mrs. McDonald:

At the request of the Guam Waterworks Authority (GWA), Duenas, Camacho, and Associates (DCA) is submitting this proposal for the referenced services. The requested services are intended to provide the Phase 1 Structural Assessment of the Causeway Bridges and Building Structures within the Hagatna Wastewater Treatment Plant Facility.

I have attached the proposed Scope of Work for the Phase 1: Structural Assessment work with our detailed estimated effort to complete the Structural Assessment Report for the Causeway Bridges and the Building Structures. The estimated effort to conduct the Phase 1 Structural Assessment work is ***One Hundred Fourteen Thousand Eight Hundred Twenty and no/100 Dollars ($114,820.00)***.

The following assumptions are made part of the scope of services:

1) We have budgeted $7,500 for any invasive sampling and testing to be performed by Geo Engineering & Testing during the assessment phase. However, as much as we would like to obtain core samples on the Causeway Bridges, it may not be physically possible to do so because of restricted access to the areas of concern, i.e., base of the existing causeway bridge slabs which are severely corroded. Therefore, this budgeted amount may be credited back to GWA if no

ENGINEERING * PLANNING * SURVEYING * ENVIRONMENTAL SERVICES * GEOGRAPHIC INFORMATION SYSTEM * CONSTRUCTION MANAGEMENT
GUAM P.O. Box 8900, Tamuning, Guam 96931 / 238 E. Marine Corps Drive, Suite 201 Diamond Plaza, Hagatña, GU 96910 / Tel: (671) 477-7991 / Fax: (671) 479-6315
SAIPAN PMB 164 Box 10000 Saipan, CNMI MP 96950 / Chalan Pale Arnold Rd, Island Commercial Center, Gualo Rai , Saipan 96950 /Tel:(670)234-9017/Fax:(670)234-3842

December 31, 2020

sampling or testing is done. GWA has the option of eliminating invasive investigation/concrete coring from the scope of work.

2) We have budgeted hours for non-invasive testing and scanning work. Similarly, testing and scanning may not be physically possible to do because of restricted access to the base of the existing causeway bridge slabs. Therefore, these budgeted hours may also be credited back to GWA if no non-invasive testing or scanning is done. GWA has the option of eliminating the non-invasive testing and scanning from the scope of work..

3) The assessment work will include in-water and underwater investigations. I have attached the proposal received from Mako Pacific for the underwater investigation. They will obtain CCTV recordings of both underwater structures and in-water overhead surveillance of the Causeway Bridges. We have also asked if they include any CCTV documentation of coral growth on the bridge structures.

4) The Hydraulic analysis is included in the scope and fee as well as the identification of the required work permits for the in-water and above -water work. Our environmental department will begin the permit application process as part of the Assessment phase in anticipation of completing the application during the design Phase if GWA elects to proceed.

I will be available to address any questions or concerns you may have regarding the proposal and scope of services. Please feel free to call or e-mail me at your convenience.

Sincerely,

Thomas P. Camacho, SE
Executive Vice President

Attachments:
Scope of Work; Fee Breakdown; Mako Pacific Proposal

ENGINEERING * PLANNING * SURVEYING * ENVIRONMENTAL SERVICES * GEOGRAPHIC INFORMATION SYSTEM * CONSTRUCTION MANAGEMENT
GUAM P.O. Box 8900, Tamuning, Guam 96931 / 238 E. Marine Corps Drive, Suite 201 Diamond Plaza, Hagatña, GU 96910 / Tel: (671) 477-7991 / Fax: (671) 479-6315
SAIPAN PMB 164 Box 10000 Saipan, CNMI MP 96950 / Chalan Pale Arnold Rd, Island Commercial Center, Gualo Rai , Saipan 96950 /Tel:(670)234-9017/Fax:(670)234-3842

5.0 PROJECT APPROACH AND METHODOLOGY

The Hagatna WWTP located in Hagatna Bay was constructed in 1975 by Naval Facilities Engineering Command (NAVFAC) and receives, treats, and discharges wastewater from the central villages of Guam. Operations of the plant were transferred to the Guam Waterworks Authority (GWA), then known as the Public Utility Agency of Guam (PUAG), in 1988. Since then, the plant has undergone several improvements over the years, most recently in 2013. Access to the Treatment Plant is by means of a Causeway constructed of Armor Stones and three Reinforced Concrete Culvert Bridge crossings (Causeway Bridges) that allow circulation of ocean waters within Hagatna Bay. Water, power, and communication utilities serving the Hagatna WWTP are embedded within the entire length of the causeway.

The Causeway Bridges have been severely compromised, with corrosion of the concrete reinforcement particularly at the underside of the top slab of the Bridges. Concrete has spalled and the exposed reinforcement has completely deteriorated. In 2007, DCA was part of the Black Construction Corporation team that performed improvements to the Hagatna WWTP and mitigated the Causeway Bridges by means of installing a new Bridge top slab over the existing culverts and tying into the Bridge Culvert vertical supports. However, treatment of the deteriorated Bridge Culvert slabs was not addressed because no in-water work was permitted for the project.

The GWA is intent on addressing the structural integrity of on-going deterioration of the Causeway Bridges and its effect on the current access to the Hagatna WWTP. Additionally, the plant structures themselves have integrity issues that need to be addressed. Structural assessments and repair recommendations for both the Causeway Bridges and Building Structures are necessary to address Life Safety concerns.

I. Phase I: Project Management

Project Management Plan – DCA will prepare a project management plan that meets the requirement of the intended scope of work. DCA will deploy key personnel from the Project Team to conduct the initial coordination meeting with GWA staff to begin work on the project. During the meeting, the Project Team and GWA staff will work out the specific roles and responsibilities of each person assigned to the project. This includes work by the necessary A-E disciplines, as well as project management and internal quality control.

A. The management plan will address the following:

- **Project Description** – Define the specific tasks of the assessment with an outline and mapping of the areas of the Causeway Bridges and WWTP Building Structures to be investigated. The investigation will include both the in-water and exposed surfaces of the Causeway Bridges and WWTP Building structures.

- **Scope of Work** – Discuss and agree on the scope of services with GWA that will be defined in the Contract.

- **Work Plan** – Lay out the work plan with the team members in coordination with GWA and the Operations staff of the Hagatna WWTP. We anticipate that there will be no disruption to current operations of the plant during the structural assessment work.

- **Progress Evaluation** –Update GWA on the progress and schedule of the assessment work as it progresses on a bi-weekly basis. Updates on a two-week look ahead schedule will also be provided.

- **Quality Assurance and Quality Control Plan** – Develop and submit a Quality Assurance and Quality Control (QA/QC) Plan for review and approval by GWA. The QA/QC plan will include all disciplines involved in the project.

- **Risk Management** – Develop a risk matrix that addresses all risks associated with proposed assessment methods and repair options being considered.

- **Scope Change** – DCA will bring proposed Scope changes to GWA's attention immediately upon discovery during any phase of this project. This may include expanded or deductive scope items.

- **Communication Plan** – Set up protocols for project communication through e-mail, phone calls, exchange of physical documentation, on-site and off-site meetings, and video meeting accounting for social distancing protocols during the

COVID-19 Pandemic. Point of contacts will be established for all disciplines and proper documentation of all communications will be required.

- **Documentation Plan** – Discuss and agree on a documentation plan and format with GWA. Protocols for documentation will be established among and between GWA and the DCA Project Team. In order to allow for the preparation of usable design documentation that is coordinated with and focused on the general intent of the project and subsequent uses of the documents developed as part of this project, we will seek to gain a better understanding of the format and structure of the final documents as envisioned by the GWA. The ASCE Manual of Practice No. 130: Waterfront Facilities Inspection and Assessment guidelines may be used in the performance of the inspection and assessment work. Using this information, the Project Team will revise preliminary evaluation and report documentation formats so that the field notes, photos, sketches, and other documentation generated are integrated with the format, concept and structure of future documents (such as grant applications, etc.). Changes to preliminary drafts developed as part of this proposal can be executed in the field and reproduced for immediate use after the coordination meeting.

- **Subcontractors and Organization Chart** – Provide the Organization Chart listing all Subcontractors/Subconsultants (Electrical and Communications, Geotechnical, Underwater Divers, and SUE services, if required) that will be working on this project. Specific individuals will be listed, and their responsibilities will be established and outlined in detail.

B. Project Schedule – Provide the project schedule setting milestones per each work task, completion dates, meeting dates, and environmental Permitting target dates. The Owner's program development requirements shall be included in the project schedule. The tentative project schedule follows:

ASSESSMENT PHASE:

- Contract Execution/Notice to Proceed – January 2021
- Structural Assessment Report - June 2021
- GWA Review/Evaluation & Decision – July 2021

C. Progress Reports – Submit monthly progress reports to support DCA invoicing.

D. Meeting and Coordination – Coordinate and communicate with local and federal government agencies including but not limited to Guam EPA, DPW, DPR, USFWS, and ACOE. Coordinate all agency requirements for the 30%, 60%, 90% and 100% submittals. All meeting minutes will be prepared by DCA and provided to GWA.

II. Structural Assessment

A. Research – Prior to the coordination meeting, DCA will provide the GWA with a list of documents necessary for the preparatory work on the project. The initial coordination meeting will be used to disseminate the existing documentation to the appropriate project personnel, as well as allow for the clarification of issues relating to these documents. DCA will review the documentation to become familiar with the Bridges and Building structural systems. The documents will also be used in the assessment phase of the project. Limited analyses of the bridge and building system components may be performed to determine the load carrying capacities of the specific bridge and building components. The analysis may add some insight into the structural deficiencies, i.e. cracks, deterioration and corrosion, and concrete spalls.

As part of, or subsequent to the coordination meeting, the Project Team will meet with GWA personnel or representatives who may be familiar with the various bridges and building systems to be surveyed and assessed. The purpose of this task is to identify inherent and systemic deficiencies and issues within the project areas. Information from these interviews will serve as the basis of specific field investigative efforts.

At this time, environmental permitting requirements for the expected above water, in-water, and underwater repairs will be identified and the permit application process shall commence. DCA Environmental Services staff will coordinate with the U.S. Army Corps of Engineers (USACOE) and Guam Environmental Protection Agency (GEPA) regarding the working permits required within navigable waterways. It is our understanding that no permits will be required for the in-water and underwater inspections during the assessment work so long as no intrusive activities (such as core sampling) are involved.

B. Field Investigation – Immediately following the coordination meeting, Project Team personnel will begin conducting field inspections, In-Water and Underwater inspections, and survey of the Causeway Bridges and the Hagatna WWTP Buildings. Multiple personnel from appropriate disciplines within the team will be mobilized and will stay on the project until completed. The inspections will be coordinated with the GWA operations and maintenance personnel. Proper safety attire will always be worn during inspections.

- DCA will conduct a **Survey of All Structural Components** including floors, walls, beams, columns, and roof slabs for Hagatna WWTP Buildings. Field inspections will include the following areas:
  - Structural inspection of interior concrete ceilings and exterior concrete roof surfaces.
  - Structural inspection of interior and exterior beam and column surfaces and stairs.
  - Structural inspection of interior and exterior Concrete and CMU Wall surfaces.
  - Deficiencies in the field will be noted, measured for quantities, and documented with sketches and photos.

- Concurrently, DCA and Mako Pacific Divers will conduct an **In-Water Survey** of all structural components of the Hagatna WWTP Causeway Bridges. Field inspections will include the following areas:
  - Structural inspection of exposed concrete ceilings, walls, and floor surfaces of the bridges. These inspections will include both Surface, In-Water, and Underwater Inspections.
  - Deficiencies in the field will be noted, measured for quantities, and documented with sketches, videos, and photos.

  DCA may conduct a **Non-Destructive Survey** of the Causeway Bridges and Building structures if deemed necessary for purposes of analysis. A Concrete Scanner will be used to identify the presence of reinforcement (depth and spacing of reinforcing bars)

- DCA will conduct a **Hydraulic Analysis** to determine flow capacities through the existing Causeway Bridges and parameters related to modifications of the bridge openings.

  A desktop review of readily available information will be done to ascertain the existing hydraulics across the three causeway openings. Analysis will be done to estimate the headloss across these three openings using the desktop data. This is not intended to see if encroachment into the flow path is possible, but rather to see how future increase in sea level may impact the openings. This analysis will also be used to support permitting and construction options.

- **Geotechnical Investigations** may be conducted if deemed necessary to determine soil bearing capacities for new structures if they are being considered as a recommendation to address deficient structures.

  Geo-Engineering and Testing, in conjunction with DCA, may conduct **Core Sampling** of specific structures selected by the team after the initial surveys are completed. Core locations will be determined by Geo-Engineering & Testing and DCA Personnel and physically marked on the bridge and building structures. The core samples extracted will be examined for deficiencies and noted, catalogued, and photo documented for record. The samples will then be subjected to compression tests and testing for corrosive properties.

  Reinforcing Steel Sampling – Steel sample locations will be determined by Geo-Engineering & Testing and DCA Personnel and physically marked on the bridge and building structures. The reinforcing steel samples extracted will be examined for deficiencies and noted, catalogued, and photo documented for record. The samples will then be subjected to tensile strength tests and testing for corrosive properties.

- *Oyo Pacific may be requested to assist in locating and documenting all underground utilities within the causeway as it relates to the repairs for the Causeway Bridges.*

C. Inspection and Recommendation Report – DCA will prepare a Structural Inspection and Assessment Report that will consist of the visual structural inspection deficiency findings on the Causeway Bridge and Hagatna WWTP Building Structures. Concrete core sample and testing results if retrieved will be included in the report along with the non-destructive scanning results. Structural analysis and calculations will be provided along with all as-built plans prepared for the Causeway and WWTP facilities.

Structural recommendations for repair, retrofit, and/or replacement will be addressed in the report. Several Repair and retrofit options will be considered along with construction methodology and approaches to the repairs/retrofit. DCA will consider the use of state-of-the-art techniques and structural repair products that are made specifically for Marine Environments.

Repair quantities will be determine as detailed as possible and a cost estimate prepared for the structural repairs The repairs will be categorized in terms of priority as it relates to Life Safety and critical for Plant Operations.

	Task Description		Principal	Project Manager	Civil Engineer	Structural Engineer	Project Engineer	Environmental Engineer	Staff Engineer/Designer	Spec Writer	Cost Estimator	Engineering Tech	CAD Tech	Sr CAD Tech	Planner	GIS Specialist	Chief Environmental Scientist	Environmental Scientist	Construction Manager	Project Construction Engineer	Inspector	Chief Surveyor	2-Man Crew	3-Man Crew	4-Man Crew	Surveyor	Assistant Chief Surveyor	Crew Chief	Computer	Carthographer	Instrument Man	Survey Tech	Survey Researcher	Survey Aide	Administrative Assistant	Secretary	
			PRIN	PM	CE	SE	PE	EE	SED	SPEC	CEST	ETECH	CAD	CAD3	PLNR	GIS	CES	ES	CM	PCE	INSP	RLS	2MSC	3MSC	4MSC	SUR	ASUR	SPC	COMP	CART	INSM	STECH	SVYRSR	SAID	ADM	TYP	Total
	Direct Labor Rates >>>>>	No. of Dwgs	$ 183.00	$ 149.00	$ 136.00	$ 172.00	$ 126.00	$ 115.00	$ 89.00	$ 134.00	$ 127.00	$ 57.00	$ 48.00	$ 59.00	$ 109.00	$ 82.00	$ 101.00	$ 89.00	$ 160.00	$ 112.00	$ 74.00	$ 114.00	$ 123.00	$ 161.00	$ 195.00	$ 115.00	$ 88.00	$ 61.00	$ 75.00	$ 67.00	$ 54.00	$ 58.00	$ 53.00	$ 34.00	$ 72.00	$ 67.00		
	Total Sheet Count and Effort >>>>	0	0	52	52	168	182	0	88	0	24	0	0	140	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 91,484.00
A.	**Pre-Assessment Services**		0	28	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 5,936.00
1	Work Plan			4			2																														$ 848.00
2	Progress Evaluation Reports			4			2																														$ 848.00
3	QA/QC Plan			4			2																														$ 848.00
4	Risk Management Matrix			4			2																														$ 848.00
5	Scope Change			4			2																														$ 848.00
6	Communication Plan			4			2																														$ 848.00
7	Documentation Plan			4			2																														$ 848.00
B.	**Assessment Phase Services**		0	24	0	168	168	0	0	0	24	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 64,948.00
1	Research As-Built & Record Docs.			4		8	8																														$ 2,980.00
2	Review of As-Built & Recod Documents					8	8																														$ 2,384.00
3	Field Investigation - Building Structure			4		40	40							40																							$ 14,876.00
4	Field Investigation - Causeway			4		24	24							12																							$ 8,456.00
5	Non-Destructive Testing					8	8							8																							$ 2,856.00
6	Preliminary Structural Calculations			4		40	40																														$ 12,516.00
7	Assessment Report			4		40	40							80																							$ 17,236.00
8	Cost Estimate			4							24																										$ 3,644.00
9																																					$ -
10																																					$ -
11																																					$ -
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22																																					$ -
23																																					$ -
C	**Hydrulics and Permitting**	0	0	0	52	0	0	0	88	0	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 20,600.00
1	Hydrulics- Data Collection				4				16																												$ 1,968.00
2	Hydrulics- Analysis				16				24																												$ 4,312.00
3	Hydrulics-Report				16				24																												$ 4,312.00
4	Accessay Engree/Egress				16				24																												$ 4,312.00
5	Identification of Construction Permits																	24																			$ 2,136.00
6	Commence with Permit Applications																	40																			$ 3,560.00
7																																					$ -
9																																			Direct Labor		$ 91,484.00

	Subconsultants	DL	Fee
S.1	Conc/GEO Testing		$ 7,500.00
S.2	MAKO Pacific		$ 9,270.00
S.3			
S.4			
S.5			
S.6			
S.7			
	Subtotal - Subconsultants	$ -	$ 16,770.00
	Coordination & Handling @	5%	$ 838.50
	Subtotal - Subconsultants + DCA Handling		$ 17,608.50

	DCA Expenses	Unit	Quan	Rate	Cost
1	Procore (ESTIMATE)	1	0	$ -	$ -
2	Mileage	1	0		$ -
3		1	0		$ -
4		1	0		$ -
5		1	0		$ -
6		1	0		$ -
7		1	0		$ -
8		1	0		$ -
9		1	0		$ -
10					
	Subtotal - Expenses				$ -

COST SUMMARY

1	LABOR				$ 91,484.00
2	OVERHEAD @	Included			
3	SUBCONSULTANTS			Subtotal, Subconsultants+DCA Handling	$ 17,608.50
4	Subtotal			Row 1 + Row 3	$ 109,092.50
5	PROFIT	Included			
6	EXPENSES			Expenses	$ -
7	Subtotal			Row 4 + Row 6	$ 109,092.50
8	GRT	@	5.25%		$ 5,727.36
				Total	$ 114,819.86
				Say	**$ 114,820**

CONFIDENTIAL
10 December 2020

QUOTATION (REVISION#1)

SUBMITTED TO **Tom Camacho, Duenas, Camacho & Associates**
ACTIVITY LOCATION **Hagatna Bay, Guam**
TITLE OF PROJECT/CONTRACT NO **Hagatna WWTP Causeway and Facility Structural Analysis (Diving Services only)**
NAME AND ADDRESS OF CONTRACTOR **Mako Pacific Divers, LLC PO Box 5180 Hagatna, Guam 96932**

WORK SUMMARY & COST BREAKDOWN

ITEM NO.	DESCRIPTION OF ITEM	QUANTITY		UNIT COST	TOTAL AMOUNT
		NO.	UNITS		
1	Dive Services (labor only)	1	LS	$ 4,275.00	$ 4,275.00
2	Equipment Use: CCTV	1	DAY	$ 275.00	$ 275.00
3	Dive Plan Preparation	1	LS	$ 400.00	$ 400.00
4	Mobilization/Demobilization	1	LS	$ 4,320.00	$ 4,320.00
				GRAND TOTAL	**$ 9,270.00**

QUOTATION VALIDITY: 60 DAYS FROM ABOVE DATE

SCOPE OF WORK:

Mako Pacific Divers, LLC will provide **LABOR** of a qualified 4-man dive team and 1 topside assistant. The above labor rate is inclusive of life-support dive equipment (SSA &/or SCUBA), and divers' safety equipment.

Divers to perform an underwater survey via CCTV of the structural components of the Hagatna WWTP Causeway Bridges. Structural inspections to include exposed concrete ceilings, walls, and floor surfaces of the bridges. Mako to provide dive plan & AHA in accordance with Army Core EM-385 requirements. Deficiencies in the field will be noted, measured for quantities, and documented with videos and photos.

CONDITIONS:

1. Dive Services rate is for a 10-hour work-day of a 4-man dive team and 1 topside assistant.
2. Charges commence upon arrival of dive team onto location (jobsite); Charges end upon departure from site. Time includes allowance for set-up and break down of dive station. Time expended above 10 hours will be charged at $430.00/hour (for labor of a 4-man dive team and 1 topside assistant). Mako will receive prior approval from DCA if additional hours are needed.
3. Exclusions include bonding, any construction & environmental permits.

TERMS OF PAYMENT:

All payments are due 30 days from date of invoice.
Guam GRT Law Bill 491-30, PL No. 30-230 applies to this project.

Prepared by: _____
Bruce Aguon- Mako Pacific Divers, LLC

Accepted by: _____
Tom Camacho- DCA

Mako Pacific Divers, LLC PO Box 5180 Hagatna, Guam 96932
Phone 671-797-1308/671-727-0110 makopacificdivers@gmail.com

Exhibit B

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, Guam 96913

CHANGE ORDER NO. 1

Project Title:	Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis		
Project No.:	S20-004- BND	**RFP No.** RFP-04-ENG-2020	
Contractor:	Duenas, Camacho & Associates, Inc.	NTP Date:	April 5, 2021

TO: Duenas, Camacho & Associates, Inc.

You are directed to make changes noted below in the subject contract. The changes are accepted by:

Thomas P. Camacho, Exec. V.P.
Contractor Representative (PRINT)

Contractor Representative (SIGNATURE) 5-15-2023 Date

PREPARED BY : George Watson 5/15/2023
George Watson Date
Project Manager, GWA

REVIEWED BY : George Watson 7/13/2023
George Watson Date
Acting Wastewater CIP Supervisor, GWA

RECOMMEND APPROVAL : 7/26/23
Jeanet Babauta Owens Date
Assistant General Manager - Engineering, GWA

NATURE OF CHANGES:

For *expanded services* on the assessment of the *Hagatna Wastewater Treatment Plant Facility* to include:

- **Architectural**: Assessement and recommendations on needed architectual work to be completed.
- **Fire Protection**: Fire-protection assessment of the treatment plant facility.
- **Electrical**: Inspection and assessment of facilities electrical components.
- **Additional Assessment Services**: Additional assessment services to include coordination with subconsultants, meetings, research, field investigation, reports and cost estimates.

THE CHANGES RESULT IN THE FOLLOWING ADJUSTMENT OF CONTRACT PRICE:

Contract price prior to this Change Order	$	114,820.00
Net INCREASE from this Change Order	$	65,679.00
Revised contract price after this Change Order	$	180,499.00

THE CHANGES RESULT IN THE FOLLOWING ADJUSTMENT OF CONTRACT TIME:

Contract time prior to this Change Order, with breakdown given below	900	Calendar Days
Net INCREASE from this Change Order with breakdown given below (subject to approved terms and conditions)"	0	Calendar Days
Revised contract time after this Change Order	900	Calendar Days
Revised Contract Expiration Date after this Change Order		n/a

CERTIFIED FUNDS AVAILABLE:

Vendor No.: 22569
Contract No.: 3016 OS
Funding Source: GWA Bond MP-WW-Misc-03
G.L. NO.: 22004.2997.300000
Amount: $ 65,679.00

Taling M. Taitano, CPA, CGFM Date
Chief Financial Officer

APPROVED AS TO FORM:

Theresa G. Tolas 7/28/2023
Legal Counsel, GWA Date

APPROVED:

Miguel C. Bordallo, P.E. Date
General Manager, GWA

Website: www.dcaguam.com
Email: dca@dcaguam.com

April 26, 2023

MIGUEL C. BORDALLO, P.E. – General Manager
GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building Mangilao,
Guam 96913

Attention: George Watson
Engineering Division
Guam Waterworks Authority

Subject: **GWA RFP-08-ENG, Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis, GWA Project No. S20-004-BND**

Ref: **Phase 1: Additional Assessments of the Building Structures within the Hagatna Wastewater Treatment Plant Facility**

Hafa Adai Mr. Watson:

Duenas, Camacho, and Associates (DCA) is pleased to submit this revised proposal for expanded services on the Hagatna Wastewater Treatment Plant Facility. The assessments conducted through **GWA Project No. S20-004-BND** will be expanded to include Architectural, Fire-Protection, and Electrical Assessments. At the request of the Guam Waterworks Authority (GWA), the Mechanical assessment has been removed from the scope of services.

I have attached the proposed Scopes of Work provided by our sub-consultants for the Hagatna WWTP Facility Assessment Work. The estimated effort to conduct the additional services is ***Sixty-Five Thousand Six Hundred Seventy-Nine and no/100 Dollars ($65,679.00).***

The following summary and assumptions are made part of the scope of services and can be found in detail on the attached documents:

1. DCA has budgeted hours for the additional Assessment services that include coordination with our sub-consultants. These services include meetings, researching As-Built and record documents, field investigations of the building structures, compilation of assessment reports, and cost estimates.

ENGINEERING * PLANNING * SURVEYING * ENVIRONMENTAL SERVICES * GEOGRAPHIC INFORMATION SYSTEM * CONSTRUCTION MANAGEMENT
GUAM P.O. Box 8900, Tamuning, Guam 96931 / 238 E. Marine Corps Drive, Suite 201 Diamond Plaza, Hagatña, GU 96910 / Tel: (671) 477-7991 / Fax: (671) 479-6315
SAIPAN PMB 164 Box 10000 Saipan, CNMI MP 96950 / Chalan Pale Arnold Rd, Island Commercial Center, Gualo Rai , Saipan 96950 /Tel:(670)234-9017/Fax:(670)234- 3842

April 26, 2023

2. EMCE has budgeted $20,038 for inspections and assessments of the facility's electrical components requiring repair, enhancement and/or replacement.

3. TRMA has budgeted $15,000 for all architectural assessments and recommendations that will be done for the facility. Recommendations and programming included in the scope of work are for repairs necessary to meet safety requirements under normal and extreme conditions in Guam.

4. WMES has budgeted $12,500 for the Fire-Protection assessment. The budgeted compensation includes all document research and field investigations required to make a sound assessment of the facility.

We will be available to discuss any questions or concerns you may have regarding the revised proposal and the scope of services. Please feel free to call or e-mail me at your convenience.

Sincerely,

Thomas P. Camacho, SE
Executive Vice President

Attachments
HWWTP Assessment Proposal Breakdown
WM Engineering Services, LLC. Fee Proposal
EMCE Consulting Engineers Fee Proposal
TRMA Fee Proposal

ENGINEERING * PLANNING * SURVEYING * ENVIRONMENTAL SERVICES * GEOGRAPHIC INFORMATION SYSTEM * CONSTRUCTION MANAGEMENT
GUAM P.O. Box 8900, Tamuning, Guam 96931 / 238 E. Marine Corps Drive, Suite 201 Diamond Plaza, Hagatiia, GU 96910 / Tel: (671) 477-7991 / Fax: (671) 479-6315
SAIPAN PMB 164 Box 10000 Saipan, CNMI MP 96950 / Chalan Pale Arnold Rd, Island Commercial Center, Gualo Rai , Saipan 96950 /Tel:(670)234-9017/Fax:(670)234- 3842

HWWTP Causway Proposal - REV 4-26-23

Fee Estimate

	Task Description	No. of Dwgs	Principal PRIN	Project Manager PM	Civil Engineer CE	Structural Engineer SE	Project Engineer PE	Environmental Engineer EE	Staff Engineer/Designer SED	Spec Writer SPEC	Cost Estimator CEST	Engineering Tech ETECH	CAD Tech CAD	Sr CAD Tech CAD3	Planner PLNR	GIS Specialist GIS	Chief Environmental Scientist CES	Environmental Scientist ES	Construction Manager CM	Project Construction Engine PCE	Inspector INSP	Chief Surveyor RLS	2-Man Crew 2MSC	3-Man Crew 3MSC	4-Man Crew 4MSC	Surveyor SUR	Assistant Chief Surveyor ASUR	Crew Chief SPC	Computer COMP	Carthographer CART	Instrument Man INSM	Survey Tech STECH	Survey Researcher SVYRSR	Survey Aide SAID	Administrative Assistant ADM	Secretary TYP	Total
	Direct Labor Rates >>>>>		$ 183.00	$ 149.00	$ 136.00	$ 172.00	$ 126.00	$ 115.00	$ 89.00	$ 134.00	$ 127.00	$ 57.00	$ 48.00	$ 59.00	$ 109.00	$ 82.00	$ 101.00	$ 89.00	$ 160.00	$ 112.00	$ 74.00	$ 114.00	$ 123.00	$ 161.00	$ 195.00	$ 115.00	$ 88.00	$ 61.00	$ 75.00	$ 67.00	$ 54.00	$ 58.00	$ 53.00	$ 34.00	$ 72.00	$ 67.00	
	Total Sheet Count and Effort >>>>	0	0	16	0	0	56	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 12,488.00
B.	**Additional Assessment Phase Coordination Services**		0	16	0	0	56	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 12,488.00
1	Research As-Built & Record Docs.			4			8																														$ 1,604.00
2	Review of As-Built & Recod Documents																																				$ -
3	Field Investigation - Building Structure			4			24																														$ 3,620.00
4	Field Investigation - Causeway																																				$ -
5	Non-Destructive Testing																																				$ -
6	Preliminary Structural Calculations																																				$ -
7	Assessment Report			4			24																														$ 3,620.00
8	Cost Estimate			4							24																										$ 3,644.00
																																					$ -
																																					$ -
																																					$ -
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																																					$ -
																																					$ -
																																					$ -
																																					$ -
																																				Direct Labor	$ 12,488.00

	Subconsultants	DL	Fee
S.1	TRM+A		$ 15,000.00
S.2	EMCE		$ 20,038.00
S.3	WMES		$ 12,500.00
	Subtotal - Subconsultants	$ -	$ 47,538.00
	Coordination & Handling @	5%	$ 2,376.90
	Subtotal - Subconsultants + DCA Handling		$ 49,914.90

	DCA Expenses	Unit	Quan	Rate	Cost
1	Procore (ESTIMATE)	1	0	$ -	$ -
2	Mileage	1	0		$ -
3		1	0		$ -
4		1	0		$ -
5		1	0		$ -
6		1	0		$ -
7		1	0		$ -
8		1	0		$ -
9		1	0		$ -
10					
	Subtotal - Expenses				$ -

	COST SUMMARY			
1	LABOR			$ 12,488.00
2	OVERHEAD @	Included		
3	SUBCONSULTANTS		Subtotal, Subconsultants+DCA Handling	$ 49,914.90
4	Subtotal		Row 1 + Row 3	$ 62,402.90
5	PROFIT	Included		
6	EXPENSES		Expenses	$ -
7	Subtotal		Row 4 + Row 6	$ 62,402.90
8	GRT	@ 5.25%		$ 3,276.15
			Total	$ 65,679.05
			Say	**$ 65,679**

TRMA
Taniguchi Ruth Makio Architects

December 24, 2022

Duenas Camacho & Associates
P.O. Box 8900
Tamuning, Guam 96931

Attn: Thomas Camacho, P.E.

Subject: Hagatna Wastewater Treatment Plant Causeway Upgrades and Modification Assessment and recommendations Services

Hafa Adai Tom;

We are pleased to provide DCA with TRMA's fee proposal for assessment and recommendations for the Hagatna Wastewater Treatment Plant Facility Upgrades and Modification.

Scope of Services

The primary consultants for this project will be the Wastewater Process engineers and the Civil Engineer.

TRMA+ will work with DCA in the survey, assessment of the facility and provide recommendations for any upgrades, repairs or modifications recommended to allow the facility to function optimally and address the wear and tear of materials, systems and finishes of the various facilities.

Additionally TRMA+ shall provide recommendations for upgrades or modifications addressing any code issues and concerns discovered during the assessment period.

Sketches, photos and diagrams may be included in the work products to illustrate concerns and recommendations however CADD, REVIT or detailed drawings will only be provided in subsequent phases and is not included in this proposal.

Scope of Services

The design team, including TRMA+ will survey the facility during the the preparation of assessment report.

1. **Assess the architectural aspects of WWTP structures:**

   Buildings (internal and external, to include walls, ceilings, roofs, stairs, etc.), secondary containment structures, hallways, and overhangs, including concrete and metal structures/components. The clarifiers are **not** included in this project, as they are currently undergoing repairs.

Guam • Northerm Marianas Islands • Micronesia
P.O. Box EA, Hagåtña , Guam 96932 • 100 Cliff Business Center
671/475-8772 • Fax: 671/472-3381 • email: arch@traguam.com

2. Recommendations and Programming :

Provide the recommendations (if any) for repairs necessary to meet safety requirements under normal and extreme conditions (including conditions resulting from seismic and large storm events).

Architectural Assessment and Recommendations $ 15,000.00

Additional services shall be via a subsequent proposal or may be undertaken on an hourly basis charged at the following rates:

Project Architect	$ 180.00 / hr
Associate Architect	$ 140.00 / hr
Technical	$ 85.00 / hr
Admin	$ 65.00 /hr

Please let us know if you have any questions or comments.

Si Yu'os Ma'ase
Taniguchi Ruth Makio Architects

Michael W. Makio, AIA
Principal

TRMA
Taniguchi Ruth Makio Architects

EMCE•Consulting Engineers
133 ANTONIA COURT, TAMUNING
P.O. BOX 9940 TAMUNING, GUAM 96931
TEL: (671) 649-0166/7
FAX: (671) 646-EMCE (3623)

Fee Proposal

TO: Tom Camacho	DATE: December 12, 2022
COMPANY: DCA	FAX NO.: VIA EMAIL
FROM: Abner Mariano	PROPOSAL NO: 7-
SUBJECT: Hagatna Causeway and WWTP Structural Assessment	

We are pleased to provide you with our Fee Proposal for Electrical Engineering Services:

A. PROJECT DESCRIPTION: Hagatna Causeway and WWTP Assessment

B. SCOPE OF SERVICES:

Inspection of the facility and providing an assessment of the Electrical components of the facility that need repair, enhancement, and/or replacement.

Notes:
The following are excluded from EMCE's scope of work.

- Design Services
- Fire alarm system - Under Fire Protection discipline.
- Control System
- PLC System

C. COMPENSATION: ..... $ 20,038.00

Sincerely,
EMCE Consulting Engineers

Abner Mariano, P.E.
Principal

EMCE INC. CONSULTING ENGINEERS

FEE PROPOSAL WORK SHEET (GUAM)

Project: Hagatna Causeway and WWTP Structural Assessment

EMCE # 7-xxx PREP. BY: AM DATE December 12, 2022

TASK:		misc. expenses	MANHOURS Princ EE	Proj EE	E. ENGR.	DRAFT.	CLERC
HOURLY RATES			$194.75	$159.60	$136.80	$67.45	$54.15
A Data Collection & Site Assessment							
1 Review Project Documents			4		8		
2 Field Investigations and Assessment							
1 week x 2 persons			8		80		
SUB TOTAL		$0					
Handling	5%	$0					
Profit	10%	$0					
SUB TOTAL - MHRS.			12	0	88	0	0
TOT FOR TASK	**$14,375**	$0	$2,337	$0	$12,038	$0	$0

B Assessment Report		Misc.	P. ENGR.	Proj EE	E. ENGR.	DRAFT.	CLERC
1 Report			8		16		8
2 Coordination			2		8		
SUB TOTAL		$0.00					
Handling	5%	$0					
Profit	10%	$0					
SUB-TOTAL -MHRS.			10	0	24	0	8
TOT FOR TASK	**$5,664**	$0	$1,948	$0	$3,283	$0	$433

A	Data Collection & Site Assessment	$14,375
B	Assessment Report	$5,664
	GRAND TOTAL	**$20,038**

Abner Mariano — **December 12, 2022** (Date)

WM ENGINEERING SERVICES, LLC

P.O. Box 392
Hagåtña, Guam 96932

Tel: (671) 646-8127
Fax: (671) 646-0704
E-mail: main@wmesguam.com

April 19, 2023

Dueñas, Camacho & Associates, Inc.
238 East Marine Corps Drive, Suite 201
Hagåtña, Guam 96910

ATTN.: Mr. Thomas P. Camacho, SE, Executive Vice President

Re.: HAGATNA WASTEWATER TREATMENT PLANT CAUSEWAY AND FACILITY STRUCTURAL ANALYSIS; GWA Project No. S20-004-BND

We are pleased to present this proposal for fire protection engineering services for the proposed project above.

A. Project Description:

The proposed project is to provide an Assessment of the existing condition of the causeway and facilities at the Hagåtña Wastewater Treatment Plant Causeway and Facilities in Hagåtña, Guam.

B. Scope of Services:

Provide an assessment of the existing facility for fire protection. The assessment will include:

- Research of available data including record drawings, interview with personnel, history of maintenance and repairs, etc.
- Conduct a field investigation to identify existing conditions and as-built drawings verification, as well as, identify any code deficiencies or needed repairs during site the investigation.
- Inspection and Recommendations Report including data gathered and analyzed from research, summary of findings and conclusions from the field investigation, and recommendations that include prioritization of any needed repairs/rehabilitation.

Mechanical Assessment, Design services, and all other services are excluded.

C. Compensation: Fire Protection: $ 12,500.00

I hope this proposal has met all your requirements. If you have any questions, please contact me at (671) 646-8127. Your approval and signature in the space provided below will form an agreement of services, when executed please return the signed copy via fax at (671) 646-0704 or via email at main@wmesguam.com. It will serve as our Notice to Proceed (NTP).

I would like to thank you for this opportunity and look forward to working with you.

Sincerely,

WMES

Signed: _____ Approved by: _____
William G. Miller, Jr., P.E.

Date: April 19, 2023 Date: _____

NFPA MEMBER 2022-2023

169 Tun Josen Fejeran Street
Tamuning, Guam

Exhibit C

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, Guam 96913

CHANGE ORDER NO. 2

Project Title: Hagatna Wastewater Treatment Plant Causeway and Facility Structural Analysis
Project No.: S20-004- BND **RFP No.** RFP-04-ENG-2020
Contractor: Duenas, Camacho & Associates, Inc. NTP Date: April 5, 2021

TO: Duenas, Camacho & Associates, Inc.

You are directed to make changes noted below in the subject contract. The changes are accepted by:

Contractor Representative (PRINT)

Contractor Representative (SIGNATURE) Date

PREPARED BY : William Esteves, Associate Engineer, GWA — Date

REVIEWED BY : George Watson, Acting Senior Engineering Supervisor, GWA — Date

RECOMMEND APPROVAL : Jeanet Babauta Owens, P.E., Assistant General Manager - Engineering, GWA — Date

NATURE OF CHANGES:

For expanded services on the assessment of the Hagatna Wastewater Treatment Plant Facility to include **(Appendix A)**:

• **Mechanical Equipment:** Equipment assessment of: Process equipment; mechanical connections and systems; control panels, instrumentation, and communication; electrical equipment; surge protection

• **Additional Services:** Additional services to include the procurement and installation of interim communication systems for plant operators during non-working hours; tracing and labeling the communication systems leading to the existing Ozone and Chemical room PLCS; and providing an updated as-is panel drawings. Additional services to include SCADA system design upgrades to upgrade the existing control system to meet the standard implemented at NDWWTP

THE CHANGES RESULT IN THE FOLLOWING ADJUSTMENT OF CONTRACT PRICE:

Contract price prior to this Change Order	$	180,499.00
Net INCREASE from this Change Order	$	761,672.00
Revised contract price after this Change Order	$	942,171.00

THE CHANGES RESULT IN THE FOLLOWING ADJUSTMENT OF CONTRACT TIME:

Contract time prior to this Change Order, with breakdown given below.	1600	Calendar Days
Net INCREASE from this Change Order with breakdown given below (subject to approved terms and conditions)"	0	Calendar Days
Revised contract time after this Change Order	1600	Calendar Days
Revised Contract Expiration Date after this Change Order		n/a

CERTIFIED FUNDS AVAILABLE:

Vendor No.: 22569
Contract No.: 3016 OS
Funding Source: GWA Bond MP-Gen-Misc-08
G.L. NO.: 22004.2997.300000
Amount: $ 761,672.00

Taling M. Taitano, CPA, CGFM Date
Chief Financial Officer

APPROVED AS TO FORM:

Theresa G. Rojas Date
Legal Counsel, GWA

APPROVED:

Miguel C. Bordallo, P.E. Date
General Manager, GWA

Appendix A

Website: www.dcaguam.com
Email: dca@dcaguam.com

July 24, 2024
Miguel C. Bordallo, P.E.
General Manager, Guam Waterworks Authority
Gloria B. Nelson Public Service Building
688 Route 15
Mangilao, Guam, 96913

Subject: Hagatña WWTP SCADA and controls Upgrades

Reference: Fee Proposal Submission

Attn: Calvin Yam, GWA engineering

Hafa Adai,

Duenas, Camacho and Associates (DCA) is pleased to provide the attached fee proposal for the subject project. A breakdown of the project fee is presented below.

Task 1 PM	$	9,929
Task 2 Interim Communication	$	101,844
Task 3 Assessment	$	177,895
Task 4 SCADA Design	$	472,004
Total	**$**	**761,672**

For comparison purposes DCA offers the following:

- Task 2 is largely based on equipment supply and installation. A breakdown of this fee was provided by MCS (DCA Sub-contractor). This fee includes the equipment and installation of two communication panels. A quote for a single control panel, though not exactly similar for the Yigo pump station, was given at or about $70,000. The $101,844 fee provided is below this fee and is considered fair.
- Task 3 involves a multi-disciplined assessment for the control, mechanical and process systems at the HWWTP. A similar assessment was done for Ugum WTP about 3 years ago, This Ugum assessment was at or about $200,000. The $177,895 fee is considered fair.
- Task 4 includes a new SCADA design for the entire plant. This design is intended to follow the works done by DCA for the NDWWTP. This NDWWTP effort was at or about $400,000. Additional effort for this task included electrical design for power system and a new room enclosure. The $472,762 fee is considered fair.

Thank you,

Kenneth M. Rekdahl, PE
Vice President
Duenas, Camacho and Associates, Inc

ENGINEERING * PLANNING * SURVEYING * ENVIRONMENTAL SERVICES * GEOGRAPHIC INFORMATION SYSTEM * CONSTRUCTION MANAGEMENT
GUAM P.O. Box 8900, Tamuning, Guam 96931 / 238 E. Marine Corps Drive, Suite 201 Diamond Plaza, Hagatña, GU 96910 / Tel: (671) 477-7991 / Fax: (671) 479-6315
SAIPAN PMB 164 Box 10000 Saipan, CNMI MP 96950 / Chalan Pale Arnold Rd, Island Commercial Center, Gualo Rai , Saipan 96950 /Tel:(670)234-9017/Fax:(670)234-3842

July 8, 2024

Attachments

Attachment A GWA provided Interim Communication System Design
Attachment B 2013 Control Plans

1. GWA HWWTP SCADA and Equipment Assessment and Design

The overall goal of this scope is to provide a new control system at the HWWTP that will serve a 25-year life cycle and be capable of upgrade to GWA's future global communications network.

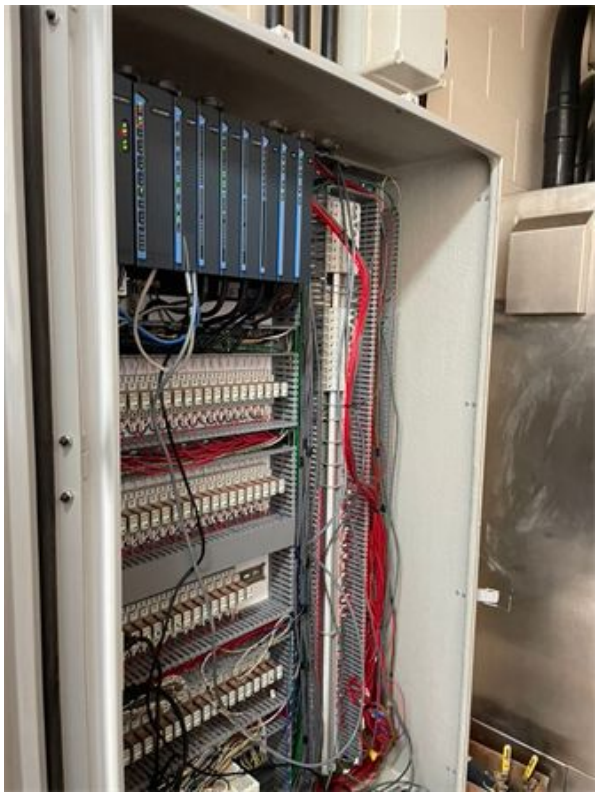
2. Installation of Interim Communication System, see attachment A

DCA will procure and install the parts needed to establish communication for plant operators during non-working hours. Only those operable and existing monitors that are wired to the two existing Ozone and chemical room PLCs will be connected and send transmitted.

Procurement of communication card shall be by GWA.

As part of this effort DCA and its sub-consultants will trace and label the communication systems leading up to Ozone and chemical room PLCs. This effort shall be limited to what is visible and accessible to the project team. An updated, field verified, as-is plant panel drawings will be provided.


Ozone PLC



Chemical Room PLC

3. Conduct mechanical equipment assessment, see attached PID.

Intent of this assessment will be to develop a repair and/or replacement list needed to bring the current equipment to the operations status provided in the 2013 refurbishment, see table 1.

All existing mechanical equipment reflected in the PID (attachment B) and table 1 below shall be physically inspected to determine operating status, useful life and replacement needs.

This assessment will include site visit(s) to inspect and document:

- Process Equipment to include equipment age, condition and useful life
- Mechanical connections and ancillary systems
- Equipment control panels, instrumentation, and communication.
- Electrical equipment including starters, drives, local control panels (LCPs), motor control centers, uninterruptible power supplies (UPS) and Hand/Off/Auto (HOAs) control stations.
- Surge protection

Asset assessment of the PLC system will begin with an asset break down structure.

Main power supply to equipment will be assessed to determine it replacement of power conductors, conduit, panels and supports are needed.

An assessment of the surge protection needs will be done. This will include review and recommendation of Type 1 and Type 2 surge protection devices. Assessment will include main power feed to the plant, power feed to PLC's and central computer systems.

A draft and final assessment report will be provided. This report will include:

1. Narrative and photos of existing conditions.
2. Requirements/recommendations for existing equipment upgrades.
3. Projected life span of assessed equipment.
4. Cost estimate.
5. Specifications and other cut sheets needed for reorder and/or repair.

Equipment	**Field Note**	**Field Note**	**Field Note**	**Field Note**
Influent Flow meter 1	**Assess**		**Remote and central Control systems**	**Exposed**
Bypass Flow Meter (Parshall Flume)	**Replace**		**Remote and central Control systems**	**Exposed**
Step Screen	**Replace**	**Consider Drum Screen**	**Remote and central Control systems**	**Exposed**
Step Screen PLC	**Replace**		**Remote and central Control systems**	**Exposed**
Rapid Mixer	**Replace, consider air**	**Consider Air**	**Remote and central Control systems**	**Exposed**
Rapid Mixer PLC	**Replace, consider air**		**Remote and central Control systems**	**Exposed**
Flocculating Mixers X 4	Assess Likely Replace	VFD Driven, Consider Air	Remote and central Control systems	Exposed
Chain and Flight Drivers X 6	**Assess Likely Replace**			**Exposed**
Chain and Flight Systems X3	**Assess Likely Replace**			**Exposed**
Coagulant feed pump/system X2	Assess Likely Replace		Remote and central Control systems	Inside
Coagulant feed pump/system PLC X2	Assess Likely Replace		Remote and central Control systems	Inside
Polymer feed system X2	Assess Likely Replace		Remote and central Control systems	Inside
Polymer feed system PLC X2	Assess Likely Replace		Remote and central Control systems	Inside

Coagulant transfer pump	Assess Likely Replace			Inside
Effluent pump X2	Assess	VFD Driven	Remote and central Control systems	Exposed
Effluent pump - PLC X2	Assess		Remote and central Control systems	Inside
Chopper Pumps X2	**Assess Likely Replace**		**Remote and central Control systems**	**Exposed**
Sludge Transfer Pumps X4	Assess Likely Replace			Inside
Sludge Grinder X4	Assess Likely Replace			Inside
Dewatering pumps X2	Assess Likely Replace	VFD Driven		Inside
Sludge Centrifuge Feed pumps X2	Assess	VFD Driven	Remote and central Control systems	Inside
Centrifuge X2	Assess	VFD Driven	Remote and central Control systems	Inside
Centrifuge PLC X2	Assess		Remote and central Control systems	Inside
Anaerobic Aerators X3	Assess			Exposed
System Valves	Assess			Inside
Chemical Room Blower X2	Assess			Inside
Influent Channel Blower	Assess			Exposed
Plant Water Pump System	Assess	VFD Driven		Inside

Table 1. Equipment List

*Items in **Bold** are related to separate scope of work (item 4) to remove clarifier covers and provide 2-ft freeboard on clarifier and upstream channels.*

4. SCADA Design

Provide the design to upgrade the control system for PLC-1, PLC-2, PLC-MST, PLC-OZ, and PLC-CHM and the communication with SCADA Server #1, SCADA Server #2, and SCADA Server #3. The SCADA system design upgrades will also include remote access and automated alarm system (autodialer).

The intent of this design is upgrade the existing control system meeting the standard currently implemented at the NDWWTP. Replacement of the PLCs, HMIs, SCADA Servers, and software will all be included in this design.

The design will provide for a new control system capable of notifying operators of system condition and status.

The design will include:

- Draft and final sealed plans and specification for bid
- A basis of design that follows the NDWWTP configuration.
- Software upgrades to meet GWA standards.
- Communications
- Existing system demolition plans
- Power Feed System Replacement
- Cost estimates

The design will also include:

- Review of Existing Instrumentation, Controls, Software, and Hardware
  - Record Drawings, Panel Drawings, Submittals, etc.
  - Includes review of any Corrective Action or Troubleshooting Completed to Date
- Site Visit to Agana WWTP.
  - Condition Assessment of Existing I&C Infrastructure
  - Including all necessary qualified labor, tools, and equipment for performing the assessment.
  - An updated, field verified, as-is plant drawing, and panel drawings to remain
  - Asset Breakdown Structure with tagging that correlates with new on-site SCADA system.
- Facility Condition Assessment Report
  - Recommendations for Repair/Replacement to Restart Operations
    - Parts List (Manufacturer, Make, Model)
    - Indicate if the identified item is included in the immediate repair/upgrade IFB.
  - This asset management system must have the ability to automatically generate work orders based on equipment manufacturer's recommended maintenance schedule.
  - Recommend maintenance schedule for all equipment on site shall be researched and collated by Designer or be included as scope for Contractor.

Area Considered for New Central SCADA System. Area to be enclosed for security

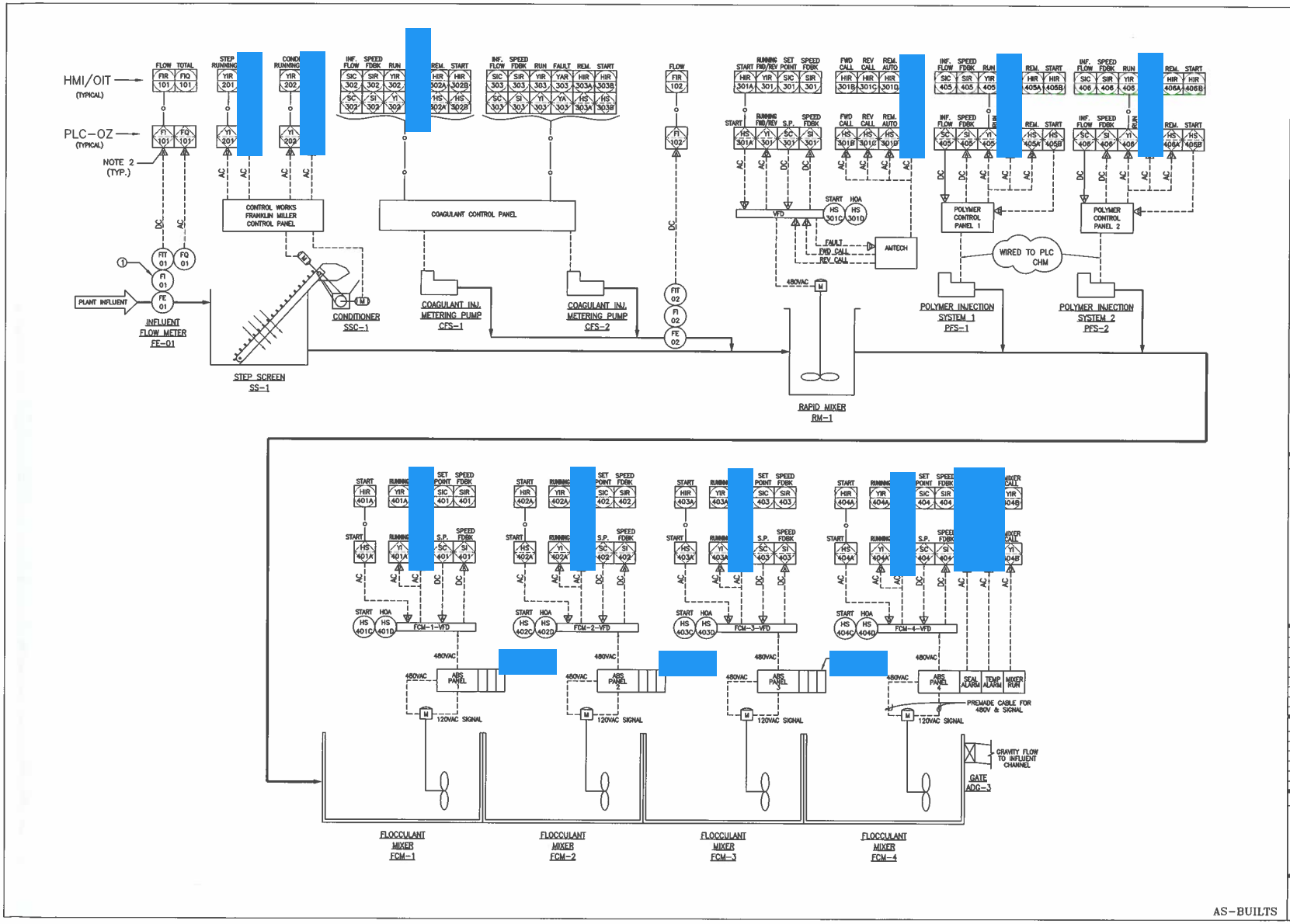
- Scope of work document as a deliverable for this design work that GWA can use for procuring SCADA maintenance service contract for use after the initial 2 (3) years.

- Include assessment and design for implementing Rockwell Automation Fixx asset management software at the plant level as an Additive Bid Item.

Design shall include:

- Assessment/preliminary plan set and design basis
- Draft Plans, specifications, estimate and contract documents
- Final Plans, specifications, estimate and contract documents

Two hard copies and a digital copy pf deliverable shall be provided to GWA.



AS-BUILTS

NEW DIMENSION CONTROLS
80 SAND ISLAND ACCESS RD.
STE. 200
HONOLULU, HAWAII 96819
PH. (808) 847-7992

CONSULTANTS

PROJECT TITLE

GUAM WATERWORKS AUTHORITY

HAGATNA SEWAGE TREATMENT PLANT REFURBISHMENT DESIGN-BUILD PROJECT

CONTRACTOR:
IN ASSOCIATION WITH CORE TECH INTERNATIONAL & DCK

MARK	DATE	DESCRIPTION
REV 7	11.18.14	AS-BUILT
REV 6	05.22.14	REVISED
REV 5	03.20.14	REVISED
REV 3	09.23.13	100% DESIGN SUBMITTAL
REV 2	06.05.13	90% DESIGN SUBMITTAL

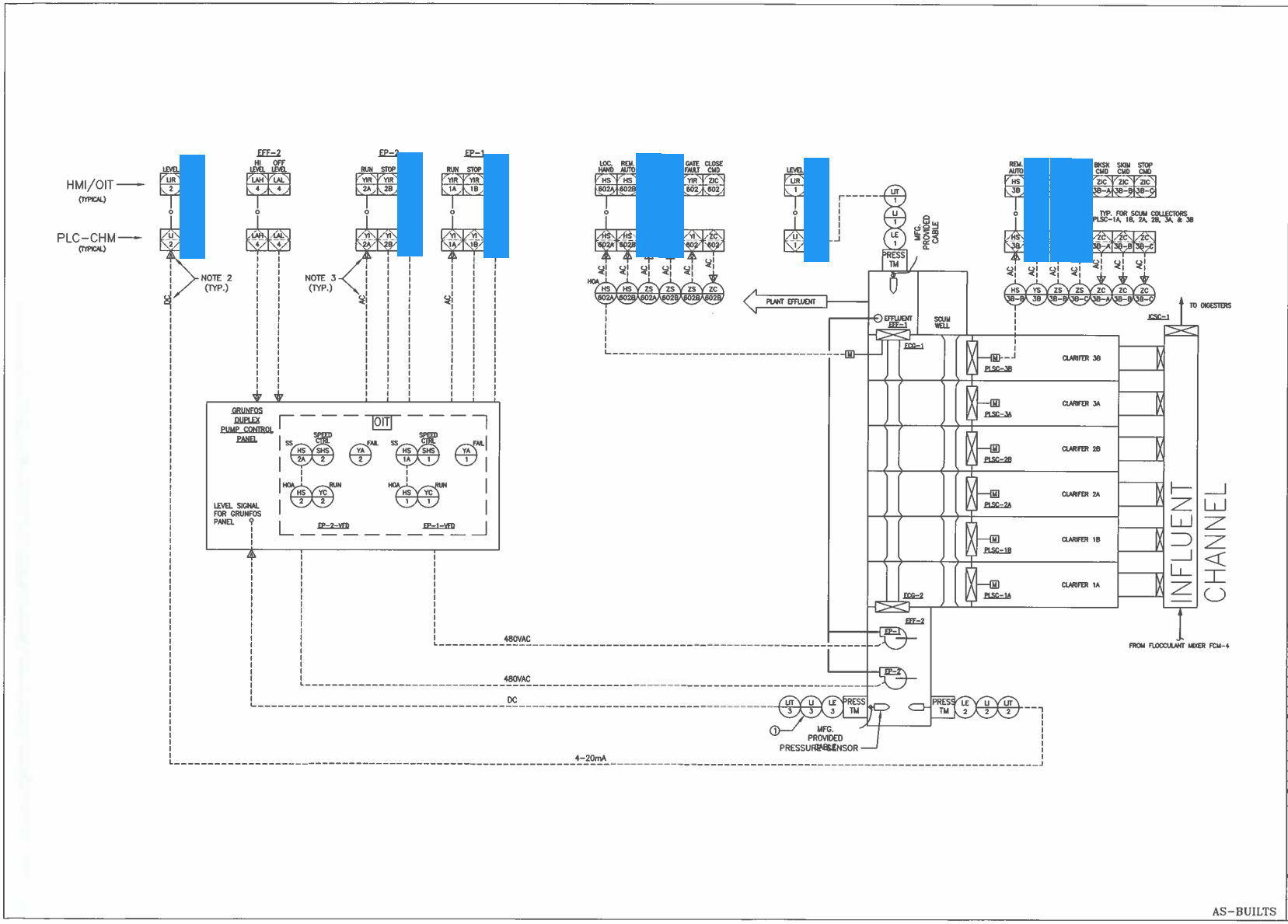
PROJECT NO:	CTI-2011-GWAM-CSA-112
CAD DWG FILE:	GWA P&ID.DWG
ISSUE DATE :	09/23/13
DRAWN BY:	WMC
CHECKED BY:	DFC
SUPV. BY:	DFC

SHEET TITLE

P&ID FOR NEW EQUIPMENT

N2

SHEET 2 OF 7



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GCIFI IN ASSOCIATION WITH CORE TECH INTERNATIONAL & DCK

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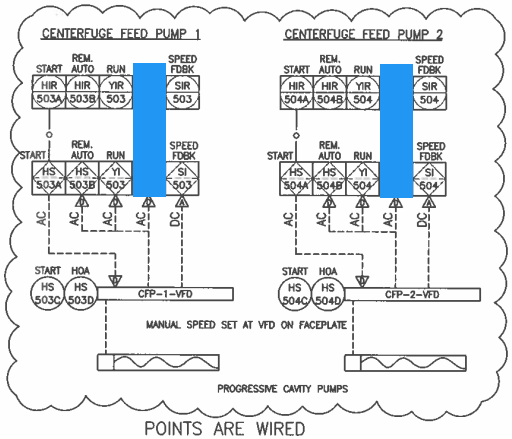
CAD DWG FILE:	GWA P&ID.DWG
ISSUE DATE :	09/23/13
DRAWN BY:	WMC
CHECKED BY:	DFC
SUPV. BY:	DFC

SHEET TITLE

P&ID FOR NEW EQUIPMENT

N3

SHEET 3 OF 7



POINTS ARE WIRED
TO
PLC-OZ

NOTES:

1. 120VAC FOR POWER, REFER TO ELECTRICAL DRAWINGS.

2. (A) – ANALOG SIGNAL, EX.: LEVEL & FLOW.
   DC – 24VDC POWER, 4-20 MA SIGNAL

3. (D) – DIGITAL SIGNAL, EX.: ON/OFF, OPEN/CLOSE.
   AC – 120VAC POWER/SIGNAL.

ABBREVIATIONS FOR VALVE AREA:

REMT = REMOTE
COM = COMMON
BKSK = BACK SKIM
CMD = COMMAND
INJ. = INJECTION

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ISSUE DATE :	09/23/13
DRAWN BY:	WMC
CHECKED BY:	DFC
SUPV. BY:	DFC

SHEET TITLE

P&ID FOR NEW EQUIPMENT

N4

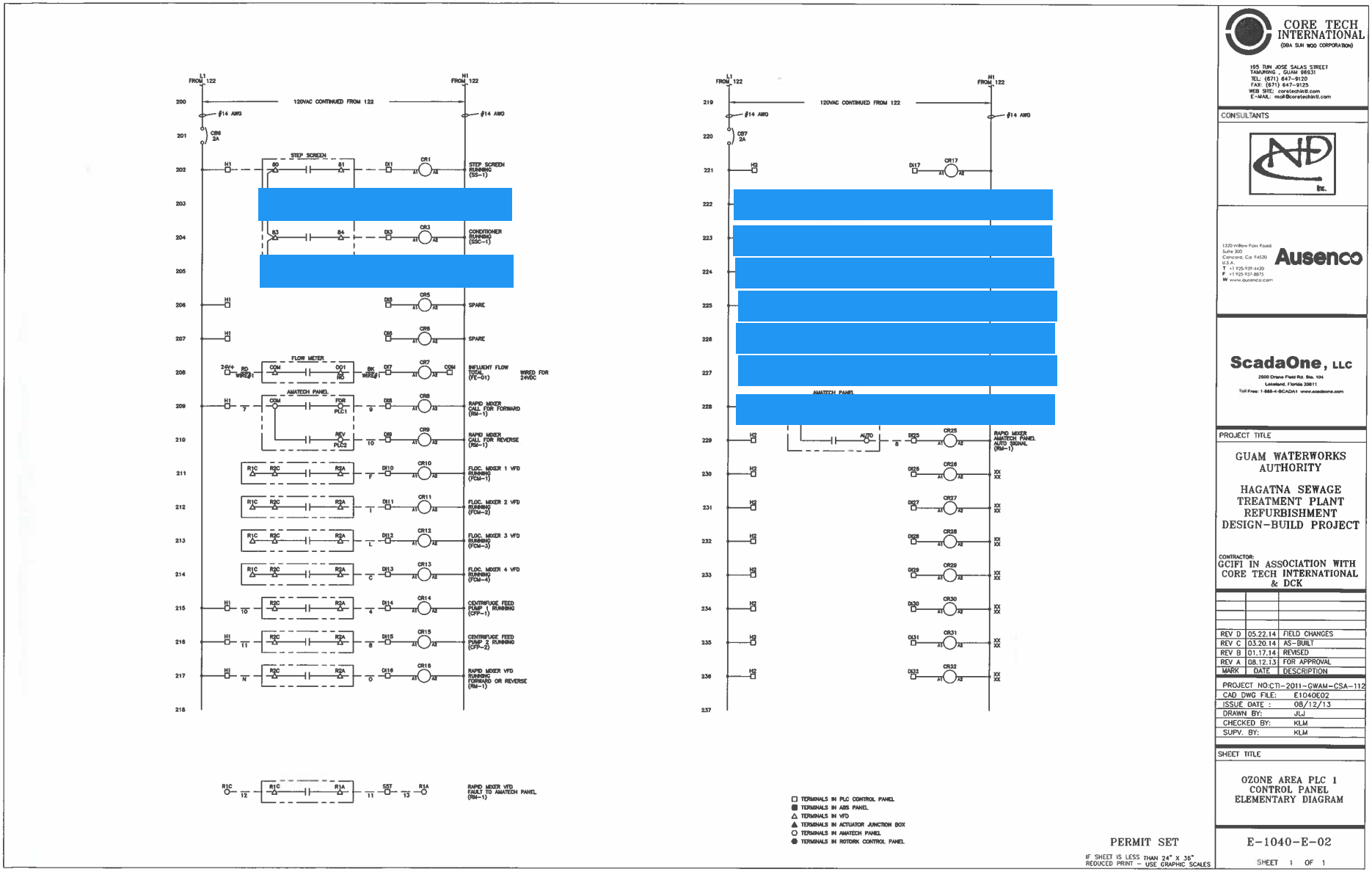
SHEET 4 OF 7

Hagatna Upgrade Project PLC Ozone

3/21/2014 DFC

Equipment	Tag Descriptor	Tag Number	Description	PLC	Rack	Slot	Point	Type	CR	Modbus Address	P&ID	Eng Units	Minimum Eng Units	Maximum Eng Units	Notes
SS-1	YIR	201	Step Screen Running	Ozone	1	2	1	DI	CR 1	2049	N2				
SSC-1	YIR	202	Conditioner Running	Ozone	1	2	3	DI	CR 3	2051	N2				
			Spare	Ozone	1	2	5	DI	CR 5	2053	N2				
			Spare	Ozone	1	2	6	DI	CR 6	2054	N2				
FE-01	FQ	101	Influent Flow Totalizer	Ozone	1	2	7	DI	CR 7	2055	N2	MG			Flow Pulse Counter Input(pulse = 0.02 MG) (Wired for 24VDC)
RM-1	HIR	301B	Rapid Mixer Call for Forward	Ozone	1	2	8	DI	CR 8	2056	N2				Coming from Amatech Panel not Drive,
RM-1	HIR	301C	Rapid Mixer Call for Reverse	Ozone	1	2	9	DI	CR 9	2057	N2				Coming from Amatech Panel not Drive,
FCM-1	YIR	401A	Flocculant Mixer 1 VFD Running	Ozone	1	2	10	DI	CR 10	2058	N2				
FCM-2	YIR	402A	Flocculant Mixer 2 VFD Running	Ozone	1	2	11	DI	CR 11	2059	N2				
FCM-3	YIR	403A	Flocculant Mixer 3 VFD Running	Ozone	1	2	12	DI	CR 12	2060	N2				
FCM-4	YIR	404A	Flocculant Mixer 4 VFD Running	Ozone	1	2	13	DI	CR 13	2061	N2				
CFP-1	YIR	503A	Centrifuge Feed Pump 1 Running	Ozone	1	2	14	DI	CR 14	2062	N2				480 VAC Not Wired
CFP-2	YIR	504A	Centrifuge Feed Pump 2 Running	Ozone	1	2	15	DI	CR 15	2063	N2				481 VAC Not Wired
RM-1	HIR	301A	Rapid Mixer VFD Running (Fdw & Rev)	Ozone	1	2	16	DI	CR 16	2064	N2				Is this running from the VFD (Forward and Reverse)
			SPARE	Ozone	1	2	17	DI	CR 17	2065	N2				
RM-1	HIR	301D	Rapid Mixer VFD Auto (Amatech Pnl)	Ozone	1	2	25	DI	CR 25	2073	N2				Coming from Amatech Panel not Drive,
			Spare	Ozone	1	2	26	DI	CR 26	2074	N2				
			Spare	Ozone	1	2	27	DI	CR 27	2075	N2				
			Spare	Ozone	1	2	28	DI	CR 28	2076	N2				
			Spare	Ozone	1	2	29	DI	CR 29	2077	N2				
			Spare	Ozone	1	2	30	DI	CR 30	2078	N2				
			Spare	Ozone	1	2	31	DI	CR 31	2079	N2				
			Spare	Ozone	1	2	32	DI	CR 32	2080	N2				
FCM-1	YIR	401B	Flocculant Mixer 1 Call to Run	Ozone	1	3	3	DI	CR 35	2307	N2				Wired to ABS Panel
			Spare	Ozone	1	3	4	DI	CR 36	2308	N2				
FCM-2	YIR	402B	Flocculant Mixer 2 Call to Run	Ozone	1	3	7	DI	CR 39	2311	N2				Wired to ABS Panel
			Spare	Ozone	1	3	8	DI	CR 40	2312	N2				
FCM-3	YIR	403B	Flocculant Mixer 3 Call to Run	Ozone	1	3	11	DI	CR 43	2315	N2				Wired to ABS Panel
			Spare	Ozone	1	3	12	DI	CR 44	2316	N2				
FCM-4	YIR	404B	Flocculant Mixer 4 Call to Run	Ozone	1	3	15	DI	CR 47	2319	N2				Wired to ABS Panel
			Spare	Ozone	1	3	16	DI	CR 48	2320	N2				
			Spare	Ozone	1	3	17	DI	CR 49	2321	N2				
			Spare	Ozone	1	3	18	DI	CR 50	2322	N2				
			Spare	Ozone	1	3	19	DI	CR 51	2323	N2				
			Spare	Ozone	1	3	20	DI	CR 52	2324	N2				
			Spare	Ozone	1	3	21	DI	CR 53	2325	N2				
			Spare	Ozone	1	3	22	DI	CR 54	2326	N2				

			Spare	Ozone	1	3	23	DI	CR 55	2327	N2				
			Spare	Ozone	1	3	24	DI	CR 56	2328	N2				
			Not Wired to a CR	Ozone	1	3	25	DI		2329	N2				
			Not Wired to a CR	Ozone	1	3	26	DI		2330	N2				
			Not Wired to a CR	Ozone	1	3	27	DI		2331	N2				
			Not Wired to a CR	Ozone	1	3	28	DI		2332	N2				
			Not Wired to a CR	Ozone	1	3	29	DI		2333	N2				
			Not Wired to a CR	Ozone	1	3	30	DI		2334	N2				
			Not Wired to a CR	Ozone	1	3	31	DI		2335	N2				
			Not Wired to a CR	Ozone	1	3	32	DI		2336	N2				
RM-1	HIR	301A	Rapid Mixer VFD Start	Ozone	1	4	1	DO	DO 1	2561	N2				TO AMATECH PANEL
FCM-1	HIR	401A	Flocculant Mixer 1 Start	Ozone	1	4	2	DO	DO 2	2562	N2				
FCM-2	HIR	402A	Flocculant Mixer 2 Start	Ozone	1	4	3	DO	DO 3	2563	N2				
FCM-3	HIR	403A	Flocculant Mixer 3 Start	Ozone	1	4	4	DO	DO 4	2564	N2				
FCM-4	HIR	404A	Flocculant Mixer 4 Start	Ozone	1	4	5	DO	DO 5	2565	N2				
CFP-1	HIR	503A	Centrifuge Feed Pump 1 Start	Ozone	1	4	6	DO	DO 6	2566	N2				480 VAC Not Wired
CFP-2	HIR	504A	Centrifuge Feed Pump 2 Start	Ozone	1	4	7	DO	DO 7	2567	N2				481 VAC Not Wired
			Spare	Ozone	1	4	8	DO	DO 8	2568	N2				
			Spare	Ozone	1	4	9	DO	DO 9	2569	N2				
			Spare	Ozone	1	4	10	DO	DO 10	2570	N2				
			Spare	Ozone	1	4	11	DO	DO 11	2571	N2				
			Spare	Ozone	1	4	12	DO	DO 12	2572	N2				
			Spare	Ozone	1	4	13	DO	DO 13	2573	N2				
			Spare	Ozone	1	4	14	DO	DO 14	2574	N2				
			Spare	Ozone	1	4	15	DO	DO 15	2575	N2				
			Spare	Ozone	1	4	16	DO	DO 16	2576	N2				
			Spare	Ozone	1	4	17	DO	DO 17	2577	N2				
			Spare	Ozone	1	4	18	DO	DO 18	2578	N2				
			Spare	Ozone	1	4	19	DO	DO 19	2579	N2				
			Spare	Ozone	1	4	20	DO	DO 20	2580	N2				
			Spare	Ozone	1	4	21	DO	DO 21	2581	N2				
			Spare	Ozone	1	4	22	DO	DO 22	2582	N2				
			Spare	Ozone	1	4	23	DO	DO 23	2583	N2				
			Spare	Ozone	1	4	24	DO	DO 24	2584	N2				
			Spare	Ozone	1	4	25	DO	DO 25	2585	N2				
			Spare	Ozone	1	4	26	DO	DO 26	2586	N2				
			Spare	Ozone	1	4	27	DO	DO 27	2587	N2				
			Spare	Ozone	1	4	28	DO	DO 28	2588	N2				
			Not Wired	Ozone	1	4	29	DO		2589	N2				
			Not Wired	Ozone	1	4	30	DO		2590	N2				
			Not Wired	Ozone	1	4	31	DO		2591	N2				
			Not Wired	Ozone	1	4	32	DO		2592	N2				
FIT-001	FIT	1	Influent Flow Meter	Ozone	1	5	1	AI		3073	N2	MGD	0	57.6	
RM-1	SIR	301	Rapid Mixer VFD Speed	Ozone	1	5	2	AI		3075	N2	Hz	30	60	
FCM-1	SIR	401	Flocculant Mixer 1 Speed	Ozone	1	5	3	AI		3077	N2	Hz	30	60	
FCM-2	SIR	402	Flocculant Mixer 2 Speed	Ozone	1	5	4	AI		3079	N2	Hz	30	60	
FCM-3	SIR	403	Flocculant Mixer 3 Speed	Ozone	1	5	5	AI		3081	N2	Hz	30	60	
FCM-4	SIR	404	Flocculant Mixer 4 Speed	Ozone	1	5	6	AI		3083	N2	Hz	30	60	
CFP-1	SIR	503	Centrifuge Feed Pump 1 Speed	Ozone	1	5	7	AI		3085	N2	Hz	30	60	480 VAC Not Wired
CFP-2	SIR	504	Centrifuge Feed Pump 2 Speed	Ozone	1	5	8	AI		3087	N2	Hz	30	60	481 VAC Not Wired
			Spare	Ozone	1	6	1	AO		3329	N2				
RM-1	SIC	301	Rapid Mixer VFD Speed Output	Ozone	1	6	2	AO		3331	N2	Hz	30	60	
FCM-1	SIC	401	Flocculant Mixer 1 Speed Output	Ozone	1	6	3	AO		3333	N2	Hz	30	60	
FCM-2	SIC	402	Flocculant Mixer 2 Speed Output	Ozone	1	6	4	AO		3335	N2	Hz	30	60	
FCM-3	SIC	403	Flocculant Mixer 3 Speed Output	Ozone	1	7	1	AO		3337	N2	Hz	30	60	
FCM-4	SIC	404	Flocculant Mixer 4 Speed Output	Ozone	1	7	2	AO		3339	N2	Hz	30	60	
CFP-1	SIC	503	Centrifuge Feed Pump 1 Speed Output	Ozone	1	7	3	AO		3341	N2	Hz	30	60	
CFP-2	SIC	504	Centrifuge Feed Pump 2 Speed Output	Ozone	1	7	4	AO		3343	N2	Hz	30	60	



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PROJECT TITLE

GUAM WATERWORKS AUTHORITY

HAGATNA SEWAGE TREATMENT PLANT REFURBISHMENT DESIGN-BUILD PROJECT

CONTRACTOR:
GCIFI IN ASSOCIATION WITH CORE TECH INTERNATIONAL & DCK

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REV C	03.20.14	AS-BUILT
REV B	01.17.14	REVISED
REV A	08.12.13	FOR APPROVAL

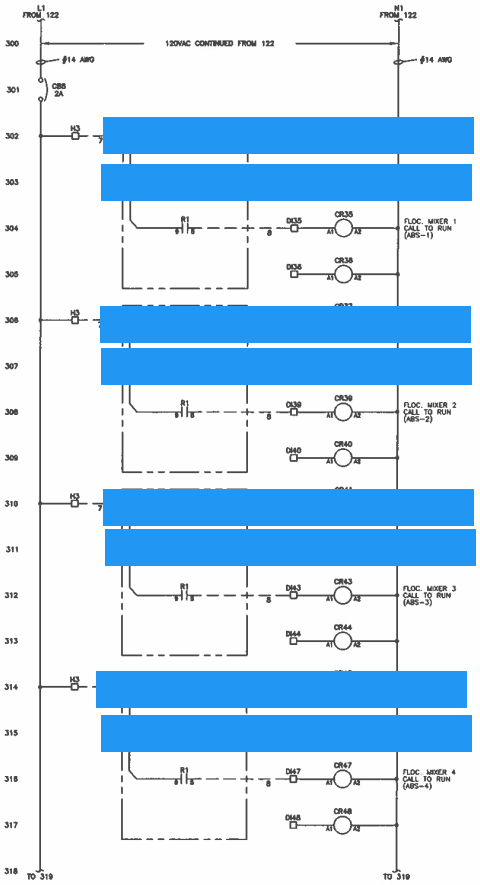
PROJECT NO:	CTI-2011-GWAM-CSA-112
CAD DWG FILE:	E1040E02
ISSUE DATE :	08/12/13
DRAWN BY:	JLJ
CHECKED BY:	KLM
SUPV. BY:	KLM

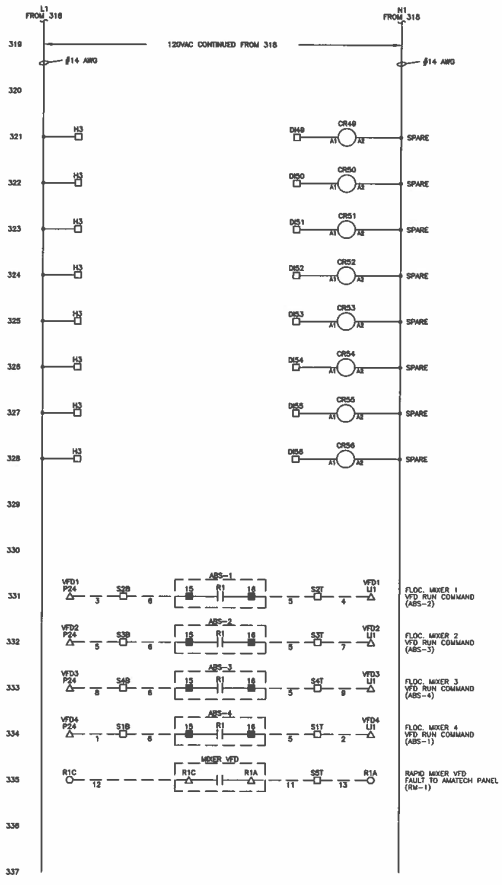
SHEET TITLE

OZONE AREA PLC 1 CONTROL PANEL ELEMENTARY DIAGRAM

E-1040-E-02

SHEET 1 OF 1





□ TERMINALS IN PLC CONTROL PANEL
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△ TERMINALS IN VFD
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OZONE AREA PLC 1
CONTROL PANEL
ELEMENTARY DIAGRAM

E-1040-E-03

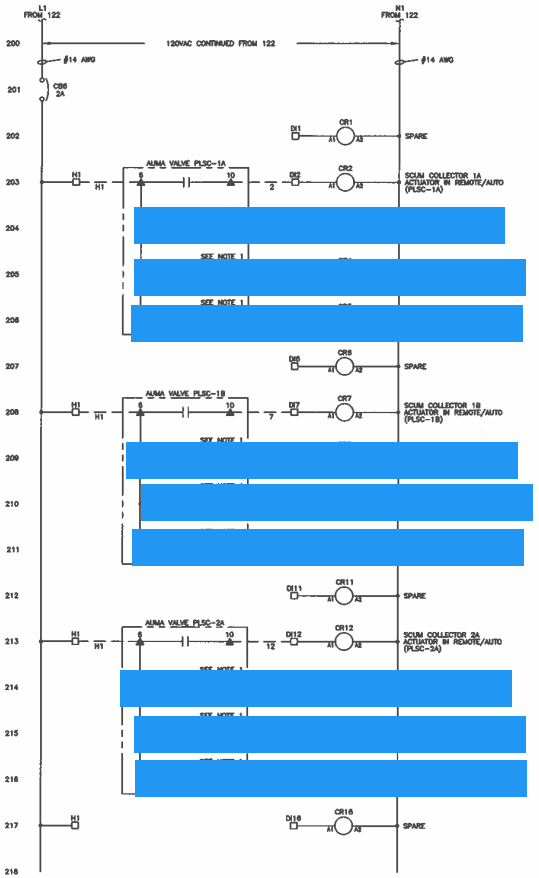
SHEET 1 OF 1

Hagatna Upgrade Project PLC Chem

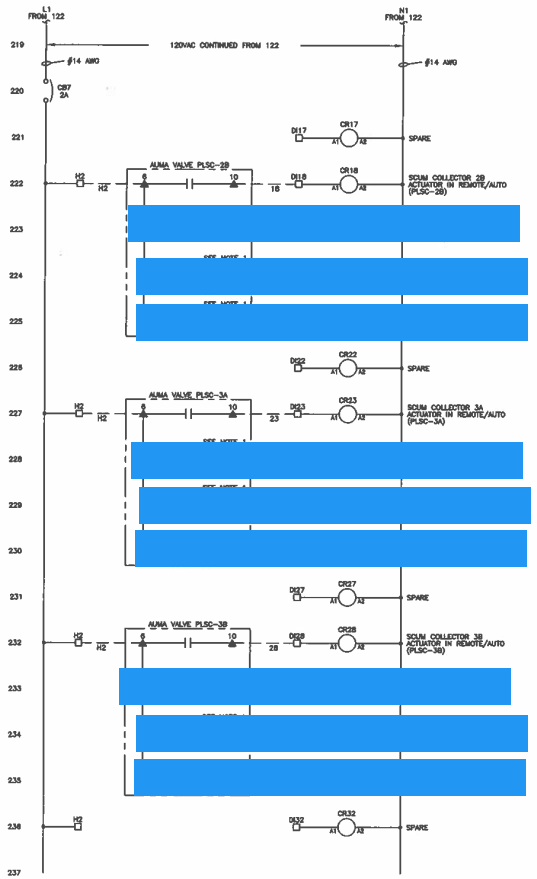
3/21/2014 DFC

Equipment	Tag Descriptor	Tag Number	Description	PLC	Rack	Slot	Point	Type	CR	Modbus Address	P&ID	Eng Units	Minimum Eng Units	Maximum Eng Units	Notes
			Spare	Chem	1	2	1	DI	CR 1	2049	N2				
PLSC-1A	HS	1A	Scum Collector in Remote / Auto	Chem	1	2	2	DI	CR 2	2050	N2				
			Spare	Chem	1	2	6	DI	CR 6	2054	N2				
PLSC-1B	HS	1B	Scum Collector in Remote / Auto	Chem	1	2	7	DI	CR 7	2055	N2				
			Spare	Chem	1	2	11	DI	CR 11	2059	N2				
PLSC-2A	HS	2A	Scum Collector in Remote / Auto	Chem	1	2	12	DI	CR 12	2060	N2				
			Spare	Chem	1	2	16	DI	CR 16	2064	N2				
			Spare	Chem	1	2	17	DI	CR 17	2065	N2				
PLSC-2B	HS	2B	Scum Collector in Remote / Auto	Chem	1	2	18	DI	CR 18	2066	N2				
PLSC-3A			Spare	Chem	1	2	22	DI	CR 22	2070	N2				
PLSC-3A	HS	3A	Scum Collector in Remote / Auto	Chem	1	2	23	DI	CR 23	2071	N2				
PLSC-3B			Spare	Chem	1	2	27	DI	CR 27	2075	N2				
PLSC-3B	HS	3B	Scum Collector in Remote / Auto	Chem	1	2	28	DI	CR 28	2076	N2				
			Spare	Chem	1	2	32	DI	CR 32	2080	N2				
EP-1	YIR	1A	Effluent Pump VFD 1 Run	Chem	1	3	1	DI	CR 33	2305	N2				
EP-1	YIR	1B	Effluent Pump VFD 1 Stop	Chem	1	3	2	DI	CR 34	2306	N2				Grunfos startup tech agreed with my earlier assessment that their submittal drawing was wrong. Need Grunfos Updated drawing, current dwg shows this as Manual
EP-2	YIR	2A	Effluent Pump VFD 2 Run	Chem	1	3	4	DI	CR 36	2308	N2				
EP-2	YIR	2B	Effluent Pump VFD 2 Stop	Chem	1	3	5	DI	CR 37	2309	N2				Grunfos startup tech agreed with my earlier assessment that their submittal drawing was wrong. Need Grunfos Updated drawing, current dwg shows this as Manual
			Spare	Chem	1	3	7	DI	CR 39	2311	N2				
			Spare	Chem	1	3	8	DI	CR 40	2312	N2				
			Spare	Chem	1	3	9	DI	CR 41	2313	N2				
EFF-1	YA	3	EFF-1 HiHi Level Float	Chem	1	3	10	DI	CR 42	2314	N2				Float not installed, wiring provision finished at PLC
ECG-1	HS	602	Effluent Control Gate in Local / Hand	Chem	1	3	12	DI	CR 44	2316	N2				
ECG-1	HS	602	Effluent Control Gate in Remote / Auto	Chem	1	3	13	DI	CR 45	2317	N2				
ECG-1	YIR	602	Effluent Control Gate General Fault	Chem	1	3	16	DI	CR 48	2320	N2				
PFS-1	YIR	405A	Polymer Injection Metering Pump Run	Chem	1	3	17	DI	CR 49	2321	N2				
PFS-1	HS	405A	Polymer Injection Metering Remote	Chem	1	3	19	DI	CR 51	2323	N2				
PFS-2	YIR	405B	Polymer Injection Metering Pump Run	Chem	1	3	20	DI	CR 52	2324	N2				

PFS-2	HS	405B	Polymer Injection Metering Remote	Chem	1	3	22	DI	CR 54	2326	N2				
			Spare	Chem	1	3	23	DI	CR 55	2327	N2				
			Spare	Chem	1	3	24	DI	CR 56	2328	N2				
			Spare	Chem	1	3	25	DI		2329	N2				
			Spare	Chem	1	3	26	DI		2330	N2				
			Spare	Chem	1	3	27	DI		2331	N2				
			Spare	Chem	1	3	28	DI		2332	N2				
			Not Wired	Chem	1	3	29	DI		2333	N2				
			Not Wired	Chem	1	3	30	DI		2334	N2				
			Not Wired	Chem	1	3	31	DI		2335	N2				
			Not Wired	Chem	1	3	32	DI		2336	N2				
PLSC-1A	ZIC	1A-A	Scum Collector Backskim Output	Chem	1	4	1	DO	DO 1	2561	N2				
PLSC-1A	ZIC	1A-B	Scum Collector Skim Output	Chem	1	4	2	DO	DO 2	2562	N2				
PLSC-1A	ZIC	1A-C	Scum Collector Stop Output	Chem	1	4	3	DO	DO 3	2563	N2				
PLSC-1B	ZIC	1B-A	Scum Collector Backskim Output	Chem	1	4	4	DO	DO 4	2564	N2				
PLSC-1B	ZIC	1B-B	Scum Collector Skim Output	Chem	1	4	5	DO	DO 5	2565	N2				
PLSC-1B	ZIC	1B-C	Scum Collector Stop Output	Chem	1	4	6	DO	DO 6	2566	N2				
PLSC-2A	ZIC	2A-A	Scum Collector Backskim Output	Chem	1	4	7	DO	DO 7	2567	N2				
PLSC-2A	ZIC	2A-B	Scum Collector Skim Output	Chem	1	4	8	DO	DO 8	2568	N2				
PLSC-2A	ZIC	2A-C	Scum Collector Stop Output	Chem	1	4	9	DO	DO 9	2569	N2				
PLSC-2B	ZIC	2B-A	Scum Collector Backskim Output	Chem	1	4	10	DO	DO 10	2570	N2				
PLSC-2B	ZIC	2B-B	Scum Collector Skim Output	Chem	1	4	11	DO	DO 11	2571	N2				
PLSC-2B	ZIC	2B-C	Scum Collector Stop Output	Chem	1	4	12	DO	DO 12	2572	N2				
PLSC-3A	ZIC	3A-A	Scum Collector Backskim Output	Chem	1	4	13	DO	DO 13	2573	N2				
PLSC-3A	ZIC	3A-B	Scum Collector Skim Output	Chem	1	4	14	DO	DO 14	2574	N2				
PLSC-3A	ZIC	3A-C	Scum Collector Stop Output	Chem	1	4	15	DO	DO 15	2575	N2				
PLSC-3B	ZIC	3B-A	Scum Collector Backskim Output	Chem	1	4	16	DO	DO 16	2576	N2				
PLSC-3B	ZIC	3B-B	Scum Collector Skim Output	Chem	1	4	17	DO	DO 17	2577	N2				
PLSC-3B	ZIC	3B-C	Scum Collector Stop Output	Chem	1	4	18	DO	DO 18	2578	N2				
ECG-1	ZIC	602	Effluent Control Gate Close Command	Chem	1	4	19	DO	DO 19	2579	N2				Rotork actuator
				Chem	1	4	20	DO	DO 20	2580	N2				
PFS-1			Polymer Injection System 1 Start	Chem	1	4	21	DO	DO 21	2581	N2				
PFS-2			Polymer Injection System 1 Start	Chem	1	4	22	DO	DO 22	2582	N2				
			Spare	Chem	1	4	23	DO	DO 23	2583	N2				
			Spare	Chem	1	4	24	DO	DO 24	2584	N2				
			Spare	Chem	1	4	25	DO	DO 25	2585	N2				
			Spare	Chem	1	4	26	DO	DO 26	2586	N2				
SW-1			Scum Pump Hi Level Start	Chem	1	4	27	DO	DO 27	2587	N2				
SW-2			Scum Pump Off Level Stop	Chem	1	4	28	DO	DO 28	2588	N2				
			Not Wired	Chem	1	4	29	DO		2589	N2				
			Not Wired	Chem	1	4	30	DO		2590	N2				
			Not Wired	Chem	1	4	31	DO		2591	N2				
			Not Wired	Chem	1	4	32	DO		2592	N2				
SCM-1	LT	4		Chem	1	5	3	AI		3077	N2				
PFS-1	SIR	405	Poly system 1 speed feedback	Chem	1	5	4	AI		3079	N2	%	0	100	
PFS-2	SIR	406	Poly system 2 speed feedback	Chem	1	5	5	AI		3081	N2	%	0	100	
CFS-1	SIR	302	Coagulant system 1 speed feedback	Chem	1	5	6	AI		3083	N2	%	0	100	
			Spare	Chem	1	5	7	AI		3085	N2				
			Spare	Chem	1	5	8	AI		3087	N2				
			Spare	Chem	1	6	1	AO		3329	N2				
			Spare	Chem	1	6	2	AO		3331	N2				
			Spare	Chem	1	6	3	AO		3333	N2				
			Spare	Chem	1	6	4	AO		3335	N2				
			Spare	Chem	1	7	1	AO		3337	N2				
			Spare	Chem	1	7	2	AO		3339	N2				
			Spare	Chem	1	7	3	AO		3341	N2				
			Spare	Chem	1	7	4	AO		3343	N2				



NOTES:
1. MOVE INTERNAL WIRE FROM TERMINAL 11 TO TERMINAL 6.



- TERMINALS IN PLC CONTROL PANEL
- TERMINALS IN ABS PANEL
- TERMINALS IN VFD
- TERMINALS IN ACTUATOR JUNCTION BOX
- TERMINALS IN AMATECH PANEL
- TERMINALS IN ROTORK CONTROL PANEL

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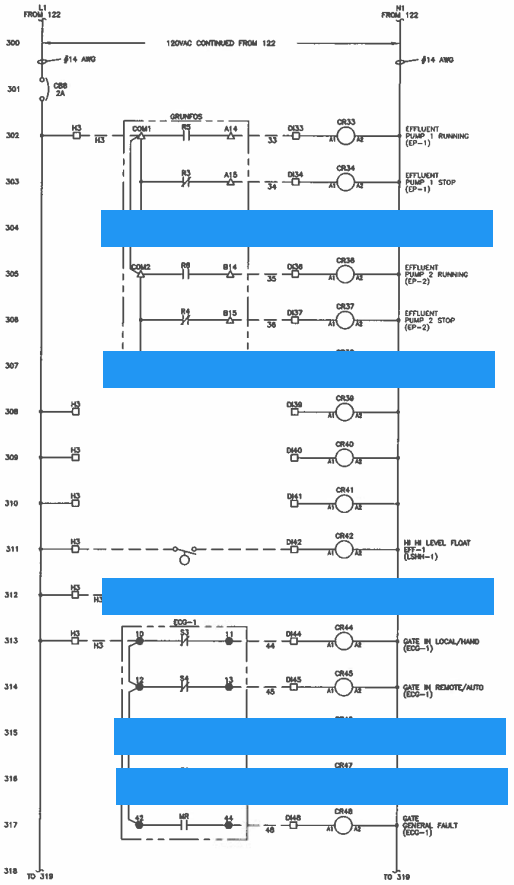
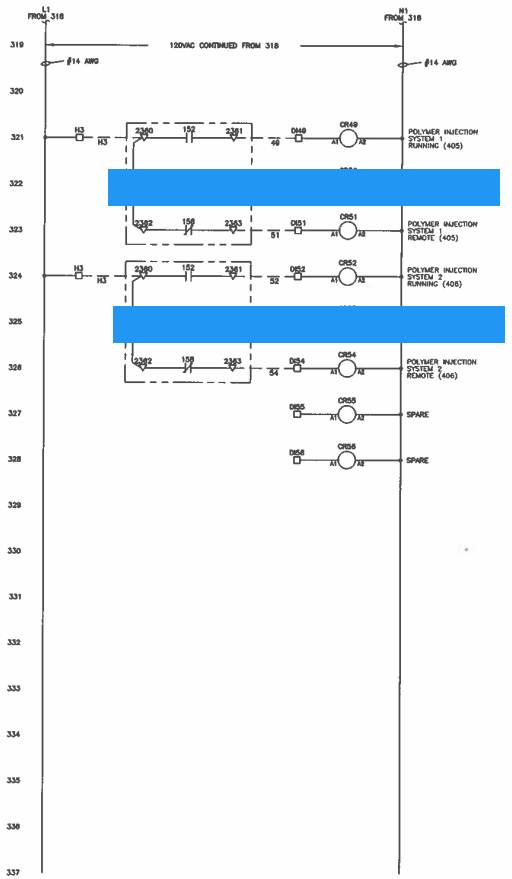
CHEMICAL AREA PLC 2 CONTROL PANEL ELEMENTARY DIAGRAM

E-1040-E-12

SHEET 1 OF 1





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- TERMINALS IN AMATECH PANEL
- TERMINALS IN ROTORK CONTROL PANEL
- TERMINALS IN POLYMER/COAGULANT PANEL

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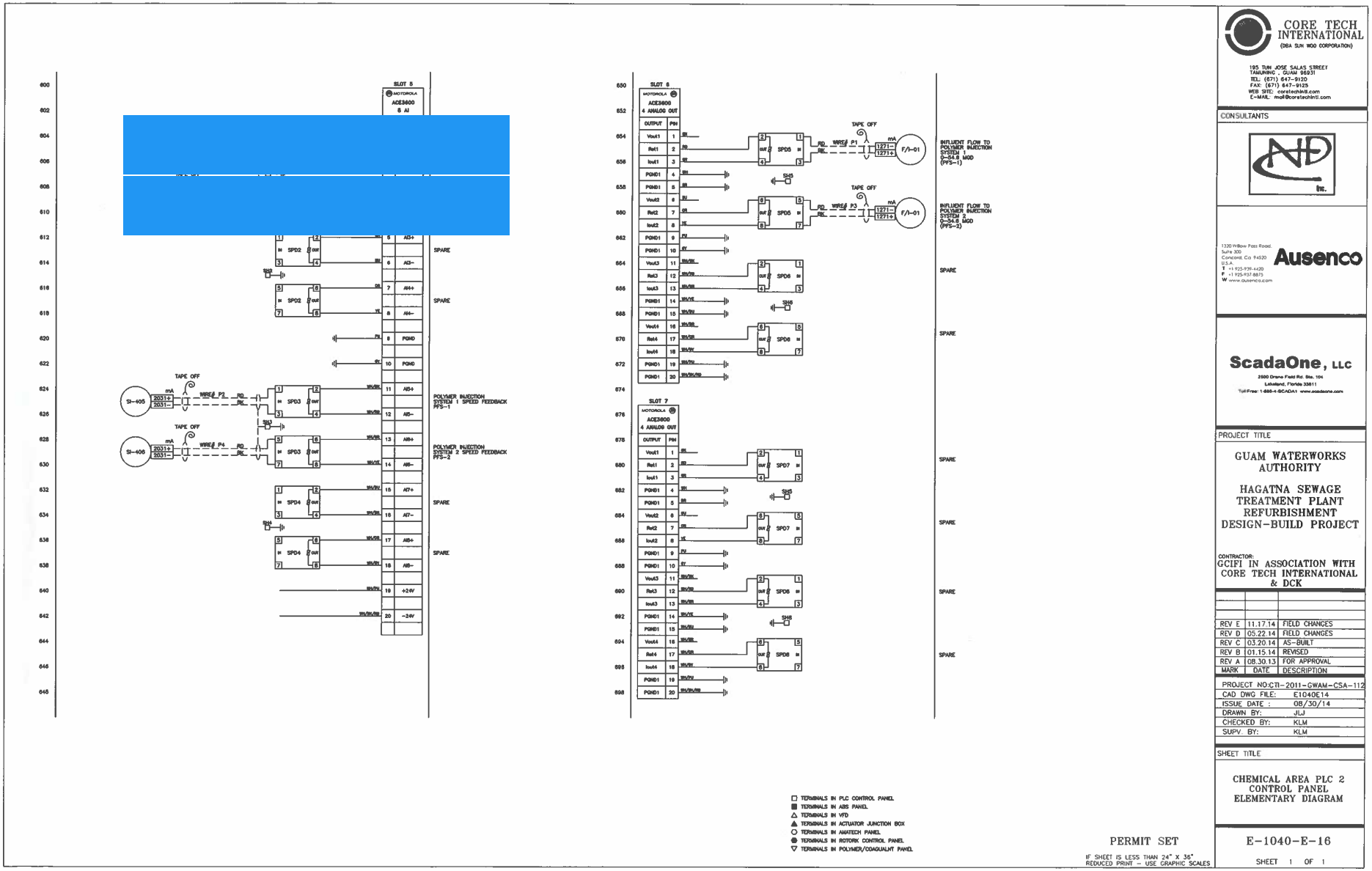

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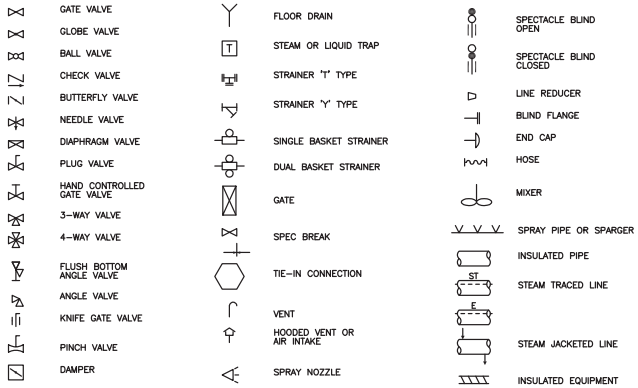

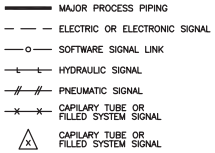

Measurement	Element Type	Alarm	Alarm Low	Alarm Low–Low	Alarm Hi	Alarm Hi–Hi	User's Choice	Controller	Ratio Controller	Sensor (Prim. Element)	Ratio Calc.	Hand Switch	Hand Valve	Indication	Indicator Controller	Light	User's Choice	Orifice, Restriction	Point (Test Conn.)	Totalizer	Indicating Totalizer	Recorder	Switch Low	Switch High	Transmitter	Mitifuction	Well	Calculation
	Code	A	AL	ALL	AH	AHH	B	C	FC	E	FY	HS	HV	I	IC	L	N	O	P	Q	IQ	R	SL	SH	T	U	W	Y
Analysis	A	AA	AAL	AALL	AAH	AAHH	AB	AC	AC	AE	AFY	AHS	AHV	AI	AIC	AL	AN	AO	AP	AQ	AIQ	AR	ASL	ASH	AT	AU	AW	AY
Burner, combustion	B	BA	BAL	BALL	BAH	BAHH	BB	BC	BC	BE	BFY	BHS	BHV	BI	BIC	BL	BN	BO	BP	BQ	BIQ	BR	BSL	BSH	BT	BU	BW	BY
Conductivity or User's choice	C	CA	CAL	CALL	CAH	CAHH	CB	CC	CC	CE	CFY	CHS	CHV	CI	CIC	CL	CN	CO	CP	CQ	CIQ	CR	CSL	CSH	CT	CU	CW	CY
Density or User's choice	D	DA	DAL	DALL	DAH	DAHH	DB	DC	DC	DE	DFY	DHS	DHV	DI	DIC	DL	DN	DO	DP	DQ	DIQ	DR	DSL	DSH	DT	DU	DW	DY
Voltage	E	EA	EAL	EALL	EAH	EAHH	EB	EC	EC	EE	EFY	EHS	EHV	EI	EIC	EL	EN	EO	EP	EQ	EIQ	ER	ESL	ESH	ET	EU	EW	EY
Flow rate	F	FA	FAL	FALL	FAH	FAHH	FB	FC	FC	FE	FFY	FHS	FHV	FI	FIC	FL	FN	FO	FP	FQ	FIQ	FR	FSL	FSH	FT	FU	FW	FY
Dimension or User's choice	G	GA	GAL	GALL	GAH	GAHH	GB	GC	GC	GE	GFY	GHS	GHV	GI	GIC	GL	GN	GO	GP	GQ	GIQ	GR	GSL	GSH	GT	GU	GW	GY
Hand	H	HA	HAL	HALL	HAH	HAHH	HB	HC	HC	HE	HFY	HHS	HHV	HI	HIC	HL	HN	HO	HP	HQ	HIQ	HR	HSL	HSH	HT	HU	HW	HY
Current (electrical)	I	IA	IAL	IALL	IAH	IAHH	IB	IC	IC	IE	IFY	HIS	IHV	II	IIC	IL	IN	IO	IP	IQ	IIQ	IR	ISL	ISH	IT	IU	IW	IY
Power	J	JA	JAL	JALL	JAH	JAHH	JB	JC	JC	JE	JFY	JHS	JHV	JI	JIC	JL	JN	JO	JP	JQ	JIQ	JR	JSL	JSH	JT	JU	JW	JY
KTime, time schedule	K	KA	KAL	KALL	KAH	KAHH	KB	KC	KC	KE	KFY	KHS	KHV	KI	KIC	KL	KN	KO	KP	KQ	KIQ	KR	KSL	KSH	KT	KU	KW	KY
Level	L	LA	LAL	LALL	LAH	LAHH	LB	LC	LC	LE	LFY	LHS	LHV	LI	LIC	LL	LN	LO	LP	LQ	LIQ	LR	LSL	LSH	LT	LU	WW	LY
User's choice	M	MA	MAL	MALL	MAH	MAHH	MB	MC	MC	ME	MFY	MHS	MHV	MI	MIC	ML	MN	MO	MP	MQ	MIQ	MR	MSL	MSH	MT	MU	MW	MY
Power	N	NA	NAL	NALL	NAH	NAHH	NB	NC	NC	NE	NFY	NHS	NHV	NI	NIC	NL	NN	NO	NP	NQ	NIQ	NR	NSL	NSH	NT	NU	NW	NY
User's choice	O	OA	OAL	OALL	OAH	OAHH	OB	OC	OC	OE	OFY	OHS	OHV	OI	OIC	OL	ON	OO	OP	OQ	OIQ	OR	OSL	OSH	OT	OU	OW	OY
Pressure, vacuum	P	PA	PAL	PALL	PAH	PAHH	PB	PC	PC	PE	PFY	PHS	PHV	PI	PIC	PL	PN	PO	PP	PQ	PIQ	PR	PSL	PSH	PT	PU	PW	PY
Delta Pressure	dP	dPA	dPAL	dPall	dPAH	dPAHH	dPB	Dpc	dPC	dPE	dPFY	dPHS	dPHV	dPI	dPIC	dPL	dPN	dPO	dPP	dPQ	dPIQ	dPR	dPSL	dPSH	dPT	dPU	dPW	dPY
Quantity	Q	QA	QAL	QALL	QAH	QAHH	QB	QC	QC	QE	QFY	QHS	QHV	QI	QIC	QL	QN	QO	QP	QQ	QIQ	QR	QSL	QSH	QT	QU	QW	QY
Radiation	R	RA	RAL	RALL	RAH	RAHH	RB	RC	RC	RE	RFY	RHS	RHV	RI	RIC	RL	RN	RO	RP	RQ	RIQ	RR	RSL	RSH	RT	RU	RW	RY
Speed, frequency	S	SA	SAL	SALL	SAH	SAHH	SB	SC	SC	SE	SFY	SHS	SHV	SI	SIC	SL	SN	SO	SP	SQ	SIQ	SR	SSL	SSH	ST	SU	SW	SY
Temperature	T	TA	TAL	TALL	TAH	TAHH	TB	TC	TC	TE	TFY	THS	THV	TI	TIC	TL	TN	TO	TP	TQ	TIQ	TR	TSL	TSH	TT	TU	TW	TY
Delta Temperature	dT	dTA	dTAL	dTALL	dTAH	dTAHH	dTB	dTC	dTC	dTE	dTFY	dTHS	dTHV	dTI	dTIC	dTL	dTN	dTO	dTP	dTQ	dTIQ	dTR	dTSL	dTSH	dTT	dTU	dTW	dTY
Multivariable	U	UA	UAL	UALL	UAH	UAHH	UB	UC	UC	UE	UFY	UHS	UHV	UI	UIC	UL	UN	UO	UP	UQ	UIQ	UR	USL	USH	UT	UU	UW	UY
Vibration, mechanical analyses	V	VA	VAL	VALL	VAH	VAHH	VB	VC	VC	VE	VFY	VHS	VHV	VI	VIC	VL	VN	VO	VP	VQ	VIQ	VR	VSL	VSH	VT	VU	VW	VY
Weight, force	W	WA	WAL	WALL	WAH	WAHH	WB	WC	WC	WE	WFY	WHS	WHV	WI	WIC	WL	WN	WO	WP	WQ	WIQ	WR	WSL	WSH	WT	WU	WW	WY
Unclassified	X	XA	XAL	XALL	XAH	XAHH	XB	XC	XC	XE	XFY	XHS	XHV	XI	XIC	XL	XN	XO	XP	XQ	XIQ	XR	XSL	XSH	XT	XU	XW	XY
Event, state or presence	Y	YA	YAL	YALL	YAH	YAHH	YB	YC	YC	YE	YFY	YHS	YHV	YI	YIC	YL	YN	YO	YP	YQ	YIQ	YR	YSL	YSH	YT	YU	YW	YY
Position, dimension	Z	ZA	ZAL	ZALL	ZAH	ZAHH	ZB	ZC	ZC	ZE	ZFY	ZHS	ZHV	ZI	ZIC	ZL	ZN	ZO	ZP	ZQ	ZIQ	ZR	ZSL	ZSH	ZT	ZU	ZW	ZY

Modifier
- D – Differential
- F – Ration (fraction)
- J – Scan
- K – Time rate of change
- M – Momentary
- Q – Integrate, totalizer
- S – Safety
- X – X–axis
- Y – Y–axis
- Z – Z–axis

Output Function
- B – User's choice
- C – Control
- K – Control Station
- N– User's choice
- S – Switch
- T – Transmit
- U – Multifunction
- V – Valve, damper, louver
- X – Unclassified
- Y – Relay, compute, convert

Modifier Function
- B – User's choice
- H – High
- L – Low
- M – Middle, intermediate
- N– User's choice
- U – Multifunction
- X – Unclassified

	*** Primary Location Normally Accessible to Operator	Field Mounted	*** Auxiliary Location Normally Accessible to Operator
Discrete Instruments	* IP1**		
Shared Display, Shared Control			
Computer Function			
Programmable Logic Control			

* Symbol size may vary according to the user's needs and the type of document. A suggested square and circle size for large diagrams is shown above. Consistency is recommended.

** Abbreviations of the user's choice such as IP1 (Instrument Panel #1), IC2 (Instrument Console #2), CC3 (Computer Console #3), etc., may be used when it is necessary to specify instrument or function location.

*** Normal inaccessible or behind–the–panel devices for functions may be depicted by using the same symbol but with dashed horizontal bars, i.e.

Control interlock fuction, Software or Hardware.

REV.	DRAWING HISTORY	BY	DATE
A	FOR APPROVAL	JLJ	–
–	–	–	–
–	–	–	–

ENGINEER	K. MATHES	–
DESIGNED BY	K. MATHES	–
DRAWN BY	J. JERNIGAN	–
DRFTG. SUPVR.	–	–

PROJ. NO.	PORJECT
CAD FILE	C01
SCALE	NONE

ScadaOne, LLC
2500 Drane Field Rd, Ste. 104
Lakeland, Florida 33811
Toll Free 1-888-4-SCADA1 www.scadaone.com

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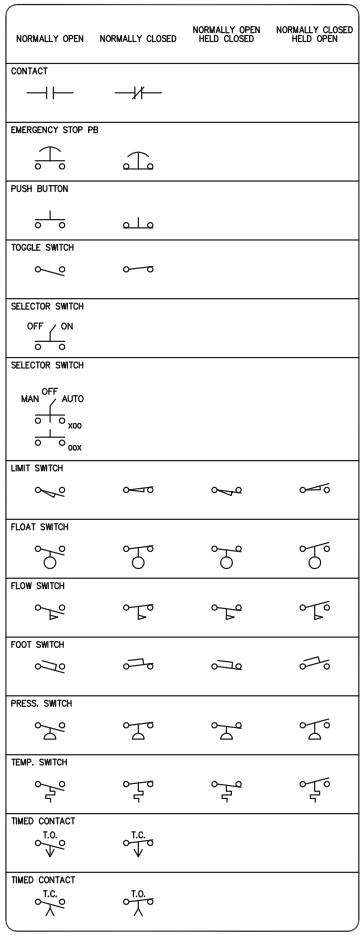
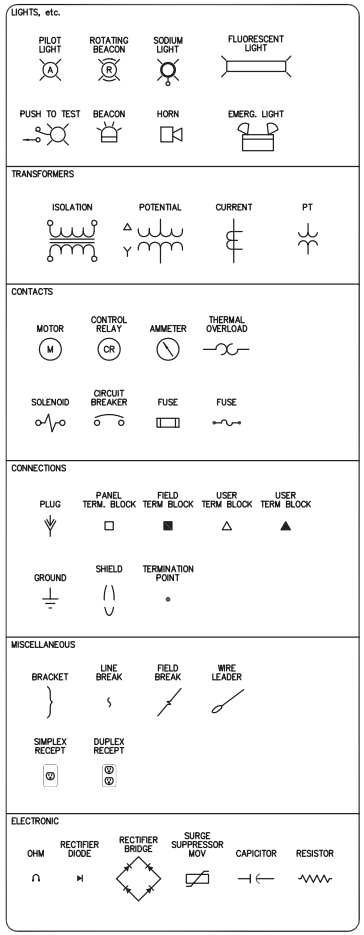
–	
–	
–	
DWG. NO.	C01
REV	A





1. All work shall be performed in accordance with the National Electrical and local codes.
2. The panel shall be constructed to allow for easy and organized expansion.
3. All substitutions in regards to model and manufacturer of parts listed in the bill of materials in these drawings are prohibited without written request and approval.
4. 240 Volts and above shall be clearly identified with commercially available stickers.
5. Power, control, and instrument conductors, in control cabinets and in the field, shall be as follows:
   a. All conductors in panel shall be permanently identified with machine printed wrap around wire markers. Part# Kroy 97-VRAP-0276W or equal.
   b. Conductors shall be sized in accordance with the NEC regarding ampacity and voltage drop considerations. Minimum conductor sizes are below.
   c. Conductor wire colors shall be as follows:

i.	Power	Black	(#12 AWG Min)
ii.	AC Controls	Red	(#14 AWG Min)
iii.	Reduced AC Current	Red/w Gray Stripe	(#14 AWG Min)
iv.	AC Neutral	White	(#14 AWG Min)
v.	DC Controls	Dark Blue	(#16 AWG Min)
vi.	DC Grounded	Dark Blue/w White Strip	(#16 AWG Min)
vii.	Inst Loops	BK/WH Shld Pairs	(#16 AWG Min)(BK +)
		RD/BK Shld Pairs	(#16 AWG Min)(RD +)
vii.	Grounds	Green or Identified	(#14 AWG Minimum)

   d. Each phase conductor, neutral conductor, grounding conductor, and high legs shall be clearly identified with its proper color code.
6. Each terminal and fuse block section shall be identified by its terminal block ID and individual terminal block numbers. Individual terminal blocks that allow identification on both the top (left) and the bottom (right) shall be identified as such.
7. All control and interposing relays shall be rated at 10 amps. A spare relay of each voltage shall be provided with each control panel.
8. All rail mounted fuse holders shall be supplied with blown fuse indicators. Two spare fuses of each size shall be supplied.
9. All control cabinets, equipment, and components shall be identified with machine set pheonalic tags as follows:
   a. Pheonalic tags shall be white with black lettering.
   b. Text shall be clearly readable. Minimum text height shall be three-sixteenth inch tall.
   c. Each tag shall clearly identify each panel and each of its main components including:
      i. Control Cabinet name and description.
      ii. Terminal Block IDs.
      iii. Circuit Breaker IDs and process description.
      iv. Instrument indicator/controller ID and process description.
      v. Each control relay (at its base on the back panel) with its unique ID.
      vi. Remote RTU site ID and configuration address.
      vii. All operator controls and indications shall be clearly identified.
      viii. Any special instructions or safety hazards shall be clearly identified.

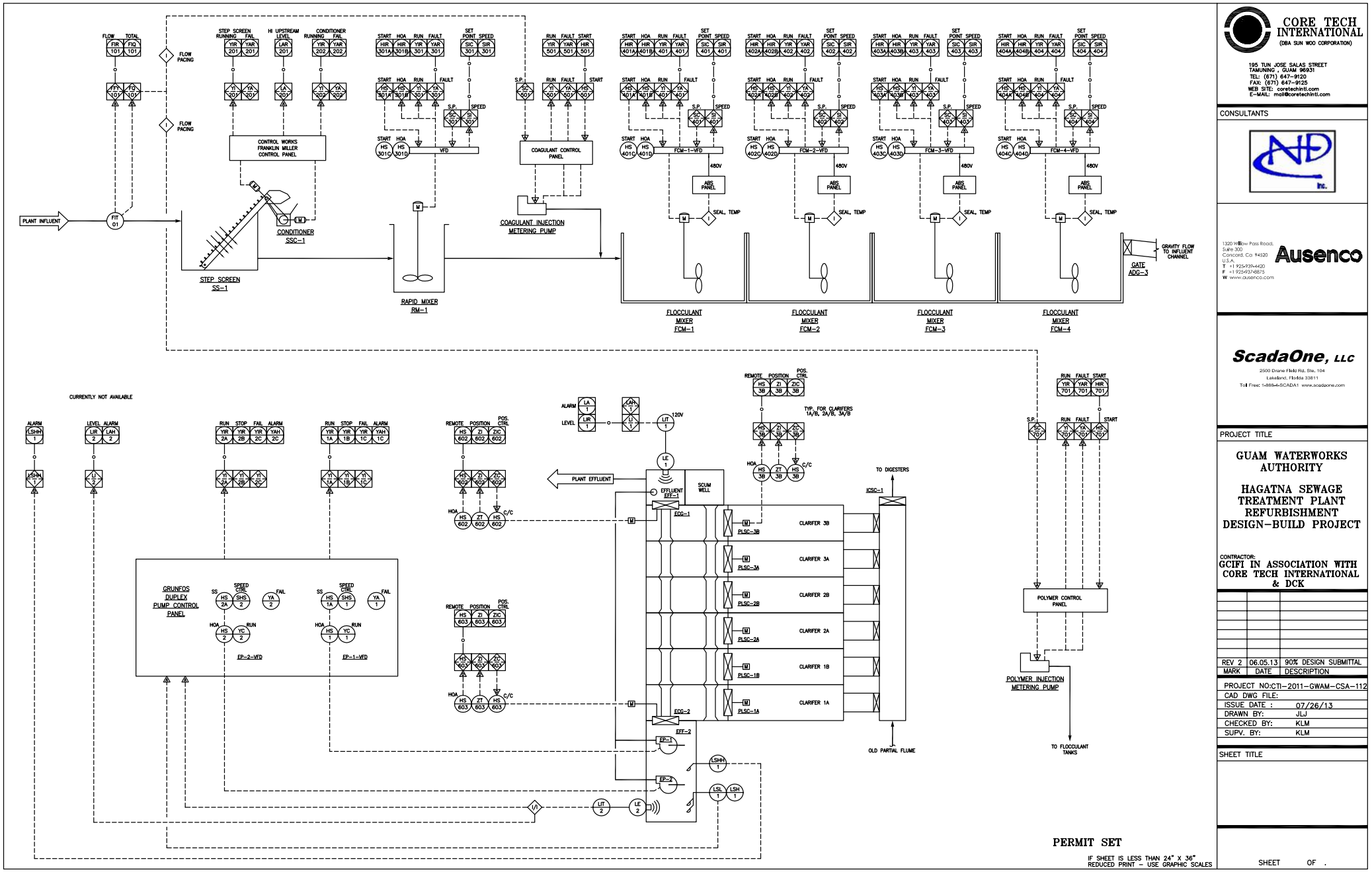
11. All materials shall be un-used and have the manufacturers/distributors full warranty at the time of delivery.
12. All instrument and control enclosures must be delivered and installed scratch and dent free. Failure to do so may result in un-acceptance. It is the installation contractors responsibility to assure the protection of this equipment.
13. All control and instrument enclosures shall be securely grounded to the existing grounding system. The RTU and cabinet back panels are to be bonded to the cabinet with a #8AWG minimum grounding conductor.
14. Instrument and control cabinet floors and bottoms of panels are reserved for conduit entries.
15. Penetrations through exterior walls shall be permanently sealed.

REV.	DRAWING HISTORY	BY	DATE				
A	FOR APPROVAL	KLM	–	ENGINEER	K. MATHES	–	PROJ. NO. PORJECT
–	–	–	–	DESIGNED BY	K. MATHES	–	CAD FILE C01
–	–	–	–	DRAWN BY	J. JERNIGAN	–	SCALE NONE
				DRFTG. SUPVR.	–	–	

ScadaOne, LLC
2500 Drane Field Rd, Ste. 104
Lakeland, Florida 33811
Toll Free 1-888-4-SCADA1 www.scadaone.com

– – – –

DWG. NO. – REV A



CORE TECH INTERNATIONAL
(DBA SUN WOO CORPORATION)
195 TUN JOSE SALAS STREET
TAMUNING , GUAM 96931
TEL: (671) 647-9120
FAX: (671) 647-9125
WEB SITE: coretechintl.com
E-MAIL: mail@coretechintl.com

CONSULTANTS

Ausenco
1320 Willow Pass Road, Suite 300
Concord, Ca 94520
U.S.A.
T +1 925-939-4420
F +1 925-937-6875
W www.ausenco.com

ScadaOne, LLC
2500 Drane Field Rd, Ste. 104
Lakeland, Florida 33811
Toll Free: 1-888-4-SCADA1 www.scadaone.com

PROJECT TITLE

GUAM WATERWORKS AUTHORITY

HAGATNA SEWAGE TREATMENT PLANT REFURBISHMENT DESIGN-BUILD PROJECT

CONTRACTOR:
GCIFI IN ASSOCIATION WITH CORE TECH INTERNATIONAL & DCK

MARK	DATE	DESCRIPTION
REV 2	06.05.13	90% DESIGN SUBMITTAL

PROJECT NO:	CTI-2011-GWAM-CSA-112
CAD DWG FILE:	
ISSUE DATE :	07/26/13
DRAWN BY:	JLJ
CHECKED BY:	KLM
SUPV. BY:	KLM

SHEET TITLE

SHEET OF .

2024 Govt Fee template HWWTP SCADA rev1.xlsx — Fee Estimate

	Task Description	Principal	Principal Structural	Project Manager	Assistant Project Manager	Professional Structural Engineer	Professional Civil Engineer - Special Projects	Professional Civil Engineer	Project Engineer	Civil Engineer	Structural Engineer	Staff Engineer/Designer	Specification Writer	Quantity Estimator	Engineering Technician	CAD technician	Professional Surveyor	Assistant Surveyor	Senior Party Chief	Party Chief (Instrument Man/Junior Party Chief	Computer	Survey Field Technician	Cartographer	Researcher	Survey Drafter / CAD Operator	Survey Aide	2-Man Crew	3-Man Crew	4-Man Crew	Chief of Environmental Services	Environmental Scientist	GIS Manager	GIS Tech	Senior Environmental PM	Construction Manager	Project Construction Manager	Construction Inspector	Aerial Drone Operator	ROV (Marine) Operator	Safety Officer	Structural Engineer	Staff Engineer	CAD Technician	Survey Technician	2-Man Crew	3-Man Crew		Total
	Direct Labor Rates >>>>>	No. of Days	$ 229	$ 215	$ 190	$ 108	$ 215	$ 188	$ 188	$ 174	$ 180	$ 185	$ 116	$ 185	$ 170	$ 79	$ 80	$ 135	$ 122	$ 100	$ 80	$ 71	$ 90	$ 60	$ 81	$ 86	$ 70	$ 55	$ 154	$ 214	$ 269	$ 126	$ 84	$ 102	$ 90	$ 103	$ 154	$ 156	$ 96	$ 69	$ 69	$ 88	$ 101	$ 78	$ 54	$ 39	$ 84	$ 106		
	Total Sheet Count and Effort >>>>>	20	0	0	28	0	12	208	0	0	0	48	302	24	36	0	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 120,676.00
A.		20	0	0	28	0	12	208	0	0	0	48	302	24	36	0	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ 120,676.00
1	**PM**	8			16																																											$ 3,040.00
2	Project Kick off				12			12					12				12																															$ 6,888.00
3	**Interim Communication**																																															$ -
4	Coordination							12					4																																			$ 2,720.00
5	Site Visit							4					16																																			$ 2,608.00
6	Commissioning support							8					16																																			$ 3,360.00
7																																															$ -
8	**Mechanical Equipment Assessment**																																														$ -
9	Data review							4					24																																			$ 3,536.00
10	Site visists							16					40																																			$ 7,648.00
11	Analysis							8					24																																			$ 4,288.00
12	Coordination							16					8																																			$ 3,936.00
13	Draft Report							24					12				60																															$ 10,704.00
14	Performance specifications							2						24																																		$ 4,816.00
15	Bid Documents							16					16																																			$ 4,864.00
16	Final Procurement report							12					12				24																															$ 5,568.00
17	Cost Estimate							2							36																																	$ 6,496.00
18	Plan Sets	6						12					36				72																															$ 12,192.00
19																																																$ -
20																																																$ -
21																																																$ -
22	**SCADA Design**																																															$ -
23	Coordination							4					12																																			$ 2,144.00
24	Site visits							8					16																																			$ 3,360.00
25	Design review							12					4																																			$ 2,720.00
26	Cover pages							4					2																																			$ 984.00
27	Arch/Struc	6					12					48					72																															$ 17,220.00
28	Bid documents							8					8																																			$ 2,432.00
29																																																$ -
30	Bid Support							24					40																																			$ 9,152.00
31																																																$ -
32																																																$ -
33																																																$ -
#####																																																$ -
#####																																																$ -
B.	**Survey Works**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ -
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C	**Post Design Support**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ -
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10																																																$ -
11																																																$ -
12																																																$ -
13																																																$ -
14																																															Direct Labor		$ 120,676.00

	Subconsultants	DL	Fee
5.1	EMCE Elec		$ 99,800.00
5.2	Jacobs		$ 412,199.54
5.3	MCS		$ 80,062.00
5.4	Expediting Fee		$ 7,000.00
5.5			$ -
5.6			
5.7			
	Subtotal - Subconsultants	$ -	$ 599,061.54
	GRT & Handling @	7%	$ 41,934.31
	Subtotal - Subconsultants + DCA Handling		$ 640,995.85

	DCA Expenses	Unit	Quan	Rate	Cost
1	Air Fare	2	0	$ -	$ -
2	Hotel	2	0	$ -	$ -
3	Per Diem	2	0	$ -	$ -
4		1	0	$ -	$ -
5	Plan Sets and Shipping	1	0		$ -
6		1	5	$ -	$ -
7		1	1		$ -
8		1	0		$ -
9		1	0		$ -
10					
	Subtotal - Expenses				$ -

COST SUMMARY

1	LABOR			$ 120,676.00
2	OVERHEAD @	Included		
3	SUBCONSULTANTS		Subtotal, Subconsultants+DCA Handling	$ 640,995.85
4	Subtotal		Row 1 + Row 3	$ 761,671.85
5	PROFIT	Included		
6	EXPENSES		Expenses X 15%	$ -
7	Subtotal		Row 4 + Row 6	$ 761,671.85
8	GRT	@ 5.25%	Included	
			Total	$ 761,671.85
			Say	$ 761,672

EMCE • Consulting Engineers
BUILDING 133
ANTONIA COURT, TAMUNING
P.O. BOX 9940 TAMUNING, GUAM 96931
TEL: (671) 649-0166/7
FAX: (671) 646-EMCE (3623)

FEE PROPOSAL

TO: Ken Rekdahl	DATE: March 20, 2024
COMPANY: DCA	Via email
FROM: Abner Mariano	PROPOSAL NO: 7-
SUBJECT: GWA HWWTP SCADA and Equipment Assessment and Design	

We are pleased to provide you with our Fee Proposal for Electrical Engineering services for the above project.

A. SCOPE OF SERVICES
- 1.0 Conduct Equipment Assessment
  - 1.1 Electrical Systems
    - 1.1.1 Main Service Equipment
    - 1.1.2 Electrical distribution equipment (switchboards, panelboards, etc. rated 480/277V and 208/120V.)
    - 1.1.3 Back-up Generator System
    - 1.1.4 Surge Protection
  - 1.2 Deliverables (Draft and Final Reports)
    - 1.2.1 Narrative and photos of existing conditions
    - 1.2.2 Requirements/recommendations for existing equipment upgrades.
    - 1.2.3 Specifications and other cut sheets needed for reorder and/or repair.
  - 1.3 Cost Estimate – Prepared by Others. EMCE to provide support information on costs for systems under EMCE's scope.
  - 1.4 The following items are excluded:
    - 1.4.1 Low voltage systems
    - 1.4.2 SCADA and related controls
    - 1.4.3 Process Equipment and related controls
    - 1.4.4 Equipment control panels, instrumentation, and communication
    - 1.4.5 Equipment starters (VFDs, soft starters, etc.)
    - 1.4.6 Communication systems
    - 1.4.7 Building electrical (lighting, receptacles, etc.)
    - 1.4.8 Design services other than conduit and power required to support the SCADA design performed by Jacobs.
- 2.0 Limited Services During Construction – Not in Contract

B. COMPENSATION:

1.0	Electrical Assessment & Report	$ 71,911
2.0	Power and conduit in support of SCADA system	$ 27,889

GRAND TOTAL $99,800

If you have any questions regarding this proposal, please call us.

Sincerely,
EMCE Consulting Engineers
Abner V. Mariano
Abner Mariano, P.E.
Principal

HAGATNA WWTP I&C/ELECTRICAL CONDITION ASSESSMENT AND DESIGN UPGRADES
JACOBS DESIGN FEE
Proposal - 6/16/2024

TO Subtask	Activity	Scott Champlin P.E. Project Manager	Jonathan James P.E. Electrical Engineer	Devin Lott I&C Engineer	Dennis Thomas P.E. I&C Engineer	Ed Meyer Cost Estimating	Skylor Flaska Lead Tech / I&C Tech	Leslie O'Connor Clerical/Word Processor	Mike Sinon Health and Safety	Labor Hours	Labor Costs	Expenses	Subtotals	Total
Billing Rate		$300.81	$235.65	$172.41	$248.94	$286.98	$134.82	$147.57	$248.07					
WORK TASK 1	Task 1 - CONDITION ASSESSMENT / SITE VISIT / TM (2 months)													
	Background Study (Record Drawings, Submittals, Memos, Corrective Action Completed, etc.)	4	4	16						24	$4,904.40		$ 4,904.40	
	Kickoff Meeting w/ DCA	2	2	2						6	$1,417.74			
	Site Visit	40		40					8	88	$20,913.36	$13,000.00	$ 33,913.36	
	Final Assessment Report (Draft and Final)	8	4	54	8			8		82	$15,831.30			
	Cost Estimate	4	4	8		24				40	$10,412.64		$ 10,412.64	
	Subtotal Labor Hours	**58**	**14**	**120**	**8**	**24**	**0**	**8**	**8**	**240**				
	Subtotal Labor Revenue	**$17,446.98**	**$3,299.10**	**$20,689.20**	**$1,991.52**	**$6,887.52**	**$0.00**	**$1,180.56**	**$1,984.56**	**$53,479.44**	**$53,479.44**	**$13,000.00**	**$ 66,479.44**	**$66,479.44**

Task 1 Subtotal Labor	$53,479.44
Task 1 Subtotal Expenses	$13,000.00
Work Task 1 TOTAL	$66,479.44

DESIGN	Task 2 - Detailed Design (Drawings, Specifications, Cost Estimate) 8 months													
DESIGN	Concept Design (2 months)													
	Team Meetings	8	4	8	4		8			32	$6,802.68		$ 6,802.68	
	Design Drawings / Specifications	24	16	108			136	12		296	$49,716.48		$ 49,716.48	
	Quality Control Review	12	24	12	24					72	$17,308.80		$ 17,308.80	
	Design Review Meetng	12	4	12						28	$6,621.24		$ 6,621.24	
	Travel and Expenses									0	$0.00	$2,500.00	$ 2,500.00	
	Subtotal Labor Hours	**56**	**48**	**140**	**28**	**0**	**144**	**12**	**0**	**428**				
	Subtotal Labor Revenue	**$16,845.36**	**$11,311.20**	**$24,137.40**	**$6,970.32**	**$0.00**	**$19,414.08**	**$1,770.84**	**$0.00**	**$80,449.20**	**$80,449.20**	**$2,500.00**	**$ 82,949.20**	**$82,949.20**
DESIGN	Pre-Final Submittal (4 months)													
	Team Meetings	12	4	12	4		8			40	$8,695.56		$ 8,695.56	
	Design Drawings / Specifications	32	40	160			196	48		476	$80,145.60		$ 80,145.60	
	Cost Estimating	8	2	12		40				62	$16,425.90		$ 16,425.90	
	Quality Control Review	8	24	8	40					80	$19,398.96		$ 19,398.96	
	Design Review Meetng	48	4	48						100	$23,657.16		$ 23,657.16	
	Travel and Expenses									0	$0.00	$15,500.00	$ 15,500.00	
	Subtotal Labor Hours	**108**	**74**	**240**	**44**	**40**	**204**	**48**	**0**	**758**				
	Subtotal Labor Revenue	**$32,487.48**	**$17,438.10**	**$41,378.40**	**$10,953.36**	**$11,479.20**	**$27,503.28**	**$7,083.36**	**$0.00**	**$148,323.18**	**$148,323.18**	**$15,500.00**	**$ 163,823.18**	**$163,823.18**
DESIGN	Final Design / Bid Set Documents (2 months)													
	Team Meetings	8	4	8	4		4			28	$6,263.40		$ 6,263.40	
	Design Drawings / Specifications	24	16	124			160	24		348	$57,481.56		$ 57,481.56	
	Cost Estimating	8	2	8		24				42	$11,144.58		$ 11,144.58	
	Quality Control Review	8	30	8	24					70	$16,829.82		$ 16,829.82	
	Design Review Meetng	8	4	8						20	$4,728.36		$ 4,728.36	
	Travel and Expenses									0	$0.00	$2,500.00	$ 2,500.00	
	Subtotal Labor Hours	**56**	**56**	**156**	**28**	**24**	**164**	**24**	**0**	**508**				
	Subtotal Labor Revenue	**$16,845.36**	**$13,196.40**	**$26,895.96**	**$6,970.32**	**$6,887.52**	**$22,110.48**	**$3,541.68**	**$0.00**	**$96,447.72**	**$96,447.72**	**$2,500.00**	**$ 98,947.72**	**$98,947.72**

Task 2 - Design Subtotal Labor	$325,220.10
Task 2 - Design Subtotal Expenses	$20,500.00
Task 2 TOTAL	$345,720.10

TOTAL DESIGN LABOR	$378,699.54
TOTAL DESIGN EXPENSES	$33,500.00
TOTAL FEE	$412,199.54